Environmental Report

FY11

Colorado State University
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Why an Environmental Report?

Colorado State University strives to reach its economic and social goals while attaining a higher standard of sustainability. To meet these goals and progress to a carbon neutral campus, it is critical to record measurements and milestones of sustainability. With the publication of this annual environmental report, the Facilities Management Department at Colorado State University can assess CSU’s journey towards carbon neutrality.

What is Sustainability?

The Oxford English Dictionary defines sustainability as, “Of, relating to, or designating forms of human economic activity and culture that do not lead to environmental degradation, esp. avoiding the long-term depletion of natural resources.”

Facilities Management

The Facilities Management Department is committed to quality, competitive service. Our mission is to anticipate and provide the physical environment, which enables Colorado State University to achieve its objectives in instruction, research, and public service.

Why Facilities Management?

Since its founding in 1870, Colorado State University has grown to include over 9,000 acres of land. With plans of further expansion, it is important for the University to remain focused upon its overarching mission: to set the standard for public research universities in teaching, research, service and extension for the benefit of the citizens of Colorado, the United States, and the world.

Facilities Management is a key aspect to achieving that mission with responsibility for all physical aspects of the campus, including long-range planning, design, remodeling, construction, roads, grounds, buildings, and all associated mechanical systems, including heating, cooling, etc.

Facilities Management is committed to projects that conserve water and energy in order to create a healthier and more sustainable campus and community. The following environmental report offers a glimpse of the features and initiatives accomplished by Facilities Management with regard to sustainable practices.
The Behavioral Sciences Building opened in the fall of 2010. This LEED Gold building incorporates energy and water efficient fixtures which drive the cost of both utilities 35% below the baseline.

83% of the waste generated in the construction of the building was diverted from the landfill by means of either repurposing or recycling.
The Research Innovation Center, or RIC Building, on Colorado State’s Foothills Campus earned a LEED Gold rating in 2011. The facility includes several Biosafety Level 2 labs supporting infectious disease research.

The design of the RIC building incorporates solutions that increase energy performance of the building while lowering operating costs by 42%. Low flow faucets and toilets reduced the building’s water use by 38% while the planting of native species cut irrigation water consumption by 90%. Low emitting carpets and paints were used in the building to ensure a high standard of indoor air quality.

Additionally, the RIC building hosts a 54 kilowatt solar array onsite which provides approximately 6% of the electrical load of the building. 830 tons of construction waste generated by this project was either recycled or repurposed.
Constructed and opened in 2010, the new Parking Garage on Lake Street is anticipated to receive a LEED Gold rating in 2011. This 330,000 square foot structure hosts almost 900 parking spaces as well as office and retail space.

10% of the garage’s spaces are reserved for low emitting vehicles. The garage also offers facilities for cyclists including a shower and covered bicycle parking. Affixed to the roof of the garage is a 9,000 square foot, 132 kW solar array providing 30% of the buildings needed electricity. 97% of construction waste was diverted from the landfill by means of recycling or repurposing. While striving to meet the demands of commuters, this structure incorporates environmentally responsible features to serve as an example of sustainability in unlikely places.
Colorado State University embarked on a revitalization of the grounds surrounding Sonny Lubick Field at Hughes Stadium. When complete, this project will have added an 18 hole disc golf course, improved walkways, and over 300 hundred trees and shrubs. A new gate located on the south end of the stadium has been added to aid in traffic flow.

The trees and shrubs – including Colorado blue spruce, Rocky Mountain juniper, ponderosa pine, Scotch pine and others – were transplanted from the nursery at CSU’s Colorado State Forest Service headquarters on the Foothills Campus.
Integrated Waste Management

In the spring of 2011, Colorado State University installed a closed loop composter on the Foothills Campus.

This system can take 2,000 pounds of food waste and bulking material per day. After a 14 day composting cycle, the material cures for 3 weeks. Then, it is ready to be used as nutrient rich compost on various landscaping projects on CSU’s campuses.

The bulking material added to the composter is comprised of straw, wood chips, horse manure, and compostable to-go containers.
Integrated Waste Management

Since 2004, Colorado State has participated in the nation-wide recycling competition RecycleMania.

Colorado State recycled over 50% of its total waste stream in 2011 and earned 21st place in the 2011 RecycleMania competition.

Internally, Academic Village & Newsom finished in first place in the Residence Hall Competition by recycling 43.23 pounds per resident. International House & Lory won the apartment competition with an impressive recycling rate of 67.18 pounds per resident.

2011 Grand Champion Results

2011 Waste Minimization Results
Transportation

Colorado State University garnered a silver ranking from the League of American Bicyclists in their Bicycle Friendly University program.

The university is committed to the safety and proliferation of the nearly 15,000 cyclists in the campus community.

The silver distinction reflects Colorado State’s efforts to educate cyclists and numerous accommodations for bicycles such as indoor bicycle parking, facilities for cyclists, and bicycling events across campus.

Colorado State University partnered with a car sharing program called Zipcar in 2011. This system allows students, staff, and employees to rent a vehicle for as short as 1 hour or as long as 6 days.

This car sharing program aims to deter students from bringing their car to campus. Many of the vehicles hosted at CSU are low-emitting.
In 2011, Colorado State University earned the highest rating from the sustainability reporting tool known as STARS. STARS, or Sustainability Tracking, Assessment & Rating System is a comprehensive system that provides measurement and comparison of sustainable activities on the University level. This report will be recalculated and resubmitted every three years.

The STARS report reflected that the university excels in implementing a sustainability research and curriculum with 56 percent of CSU’s faculty and 72 percent of all academic departments engage in environmental research; one quarter of CSU’s offered courses have a sustainability focus. CSU offers five different undergraduate and graduate degrees tailored to the preservation of the environment.

Colorado State University, as of September 1st, 2011, had a score of 77.73. This figure is helpful in identifying strengths and pinpointing areas of improvement.

To view the full report, visit https://stars.aashe.org/institutions/colorado-state-university-co/report/2011-09-12/
Greenhouse Gas Inventory

A greenhouse gas is an atmospheric gas that absorbs and traps heat. This radiation inevitably raises the overall temperature of the atmosphere leading to the “greenhouse effect” or global warming. The most common greenhouse gasses are methane and carbon dioxide.

As signatories of the American College & University Presidents’ Climate Commitment, Colorado State University has been measuring and accounting greenhouse gas emissions since 2006. These reports can be found at http://www.fm.colostate.edu/sustain/index.cfm?page=about/reports

Colorado State University is devoted to reducing its greenhouse gas emissions by using renewable energy sources, promoting alternative transportation, implementing sustainable construction processes, and providing education regarding sustainability.

Colorado State University’s Greenhouse Gas Emissions Percentage by Source for FY11

- Solid Waste: 0.2%
- Electricity: 52%
- Agriculture: 2%
- Transportation/Fleet: 1%
- Natural Gas: 24%
- Refrigerants: 1%
- Airline Travel: 12%
- Commuting: 9%
Greenhouse Gas Inventory
Greenhouse Gas Emission Trends of Colorado State University

**Greenhouse Gas Emission Trends by Square Footage**

![Graph showing GHG Footprint Trends](image)

**Greenhouse Gas Trends by Category**

![Graph showing GHG Footprint Trends by Category](image)
## Milestones

Colorado State University’s commitment to sustainability has strengthened over the last 11 years.

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>1999-2000</td>
<td>Recycling bins introduced into the residence halls and a vermicomposting project for food waste is also introduced.</td>
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<td>2003</td>
<td>The Main Campus Greenhouse wetlands is completed to help filter sediments and pollutants from storm and waste water.</td>
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<td>2003</td>
<td>The University joins the Fort Collins ClimateWise Program.</td>
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<td>2005</td>
<td>Colorado State receives the Fort Collins Chamber of Commerce Environmental Leader award.</td>
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<td>2006</td>
<td>Colorado State becomes the first University to be awarded LEED CI (commercial interior) Silver certification for the renovation of three classrooms in Guggenheim Hall.</td>
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<td>2006</td>
<td>The University first publishes their first GHG inventory, using a tool provided by the Fort Collins ClimateWise program.</td>
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<td>2007</td>
<td>The Transit Center receives LEED Gold certification</td>
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<td>2007</td>
<td>Colorado State is recognized as an EPA Green Power Partner.</td>
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<td>2009</td>
<td>The University installs the first PV system on main campus. At 18.9 kW, it is the largest system in Fort Collins at the time of installation.</td>
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<td>2010</td>
<td>The University reaches “Platinum” status in the ClimateWise Program.</td>
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<td>2010</td>
<td>A 2 MW solar plant is installed on the CSU Foothills Campus.</td>
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<td>2010</td>
<td>A 3.3 MW expansion of the solar plant on the Foothills campus is completed. At the end of construction, the solar plant is rated at 5.3 MW total.</td>
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<td>2010</td>
<td>Three of CSU’s buildings, the Academic Training Center, Rockwell West, and Aspen Hall, receive a LEED Gold certification.</td>
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<td>2011</td>
<td>With the LEED Gold certification of the Research Innovation Center, the Behavioral Sciences Building, and the Indoor Practice Facility, CSU now has 8 LEED Gold buildings with an anticipated 2 more.</td>
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<td>2011</td>
<td>A commercial grade composter is installed on the Foothills Campus.</td>
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<td>2011</td>
<td>CSU submits the highest score to date within the STARS system.</td>
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Colorado State University is dedicated to progressing towards carbon neutrality. The University must maintain an honest evaluation of what measures must be taken to achieve this goal.

Below is CSU's annual Report Card where areas of environmental impact of facilities operations, both negative and positive, are highlighted.

Ratings are based on whether a smaller or larger ecological footprint was generated compared to FY10.

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<tr>
<th>Land Use and Transportation</th>
<th>Water and Energy Use</th>
<th>Waste and Emissions</th>
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<tr>
<td><strong>Land Use</strong>- Over 300 trees were planted at Hughes Stadium in a grounds rejuvenation project.</td>
<td><strong>Water</strong>- Water use in 2011 was equal to that in 2010.</td>
<td><strong>Waste Generation</strong>- With the addition of a closed loop composter, food waste is now disposed of more ecologically.</td>
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<tr>
<td><strong>Building Design and Construction</strong>- Three buildings earned a LEED Gold rating based on their sustainable features.</td>
<td><strong>Energy Use</strong>- Energy use, including natural gas and electricity decreased in 2011 as compared to 2010.</td>
<td><strong>Recycling</strong>- Despite an effort to clarify recycling options on campus with clear graphics, CSU slipped out of the top 20 competing universities in RecycleMania.</td>
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<td><strong>Transportation</strong>- CSU launched a partnership with Zipcar, a car rental service.</td>
<td><strong>Energy Sources</strong>- Phase II of the solar plant at Chrisman Field came online in FY11.</td>
<td><strong>GHG Emissions</strong>- Carbon dioxide emissions decreased by over 5,000 metric tons as compared to 2010.</td>
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</tbody>
</table>

=A positive trend towards a sustainable campus

=Lack of change or inadequate data

=A negative trend towards a sustainable campus
Other Initiatives

Association for the Advancement of Sustainability in Higher Education (AASHE) Member

This membership connects the University with a growing network of colleges, universities, businesses and nonprofits that are working to achieve a sustainable future. CSU collaborates with this organization to foster education and leadership regarding health, ethics and planetary stewardship. By participating in AASHE membership conferences and meetings, the university develops networking opportunities among other organizations focused on sustainability.

American College and University Presidents’ Climate Commitment (ACUPCC) Signatory

In FY08, CSU became a signatory of ACUPCC. The goal of this effort is for university campuses to reduce Greenhouse Gas emissions to the point of climate neutrality. To reach this goal, CSU annually completes a report of GHG emissions. Also, a Climate Action Plan was published in September of 2010. This document outlines a plan for the university to attain carbon neutrality by 2050.

City of Fort Collins ClimateWise Partner

Colorado State joined other local businesses in 2003 in an effort to reduce greenhouse gas emissions and improve the quality of life in Fort Collins. CSU is currently a Platinum level partner.
Partnerships and Memberships

**EPA Energy Star Program Partner & Green Power Partner**

Colorado State University is a partner of the EPA’s Green Power Program. This program is designed to promote green power by supplying support, tools, and resources to its partners.

**Talloires Declaration Signatory**

In 2001, then University President Albert Yates joined hundreds of other Universities in signing the Talloires Declaration. By signing this declaration, President Yates committed the University to comply with a ten-point action plan for incorporating sustainability and environmental literacy into its teaching, research, operations and outreach efforts. To learn more, visit the University Leaders for a Sustainable Future website, www.ulsf.org

**U.S. Green Building Council Member**

In FY02, Facilities Management joined the U.S. Green Building Council. Council members work together to develop LEED products and resources, the Greenbuild Annual International Conference and Expo, policy guidance, and educational and marketing tools that support the adoption of sustainable building.
Resources

- AASHE: http://www.aashe.org/
- APUPCC: http://acupcc.aashe.org
- Bicycle Traffic Education: http://police.colostate.edu/pages/bike-traffic.aspx
- Colorado Governor’s Energy Office: http://www.colorado.gov/energy
- Colorado State Forest Service: http://www.csfs.colostate.edu
- CSU Facilities Management: http://www.fm.colostate.edu/sustain
- CSU Green is Gold Website: http://www.green.colostate.edu/ghg.aspx
- CSU School of Global Environmental Sustainability: http://soges.colostate.edu
- Environmental Protection Agency: http://www.epa.gov
- Fort Collins Bike Library: http://www.fcbikelibrary.org
- Fort Collins ClimateWise Program: http://www.fcgov.com/climatewise
- RecycleMania: http://www.recyclemaniacs.org
- RideShare: http://www.rideshare.colostate.edu
- University Leaders for a Sustainable Future (USLF): http://www.ulsf.org

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