



Facilities and Services

Office of Sustainability

2013 Annual Report



Discover Sustainability at NMSU!

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Acknowledgements

"When the last tree is cut down, the last fish eaten and the last stream poisoned, you will realize that you cannot eat money."

- Alanis Obomsawin

**Wait! Wait!
Don't print me!**

2013 continued the focus on sustainability at NMSU. The more we talk about our connection to the planet the greater the chance for all of us to change our thinking and behavior. **97% of scientists say that humans are causing climate change** so it's time that humans decide to change our behavior and do a better job of taking care of Mother Earth. Words like "upcycling" and "Environmental Product Declaration" and "resilience" are more and more often a part of our everyday vocabulary. As standard procedure we build green buildings, we install bottle filling stations where possible, we replace burned out light bulbs with LED bulbs. We xeriscape using low water use plants, put timers on irrigation systems to water appropriately, and we only plant local plants that can survive the harsh summers with little water. We provide recycling centers in all of our buildings but encourage waste reduction first. Read on to find out more about all the wonderful things we did in 2013 to be Green Aggies.

Major NMSU Sustainability Accomplishments in 2013

- Five more LEED certified buildings, bringing our total count to 15
- ACUPCC "Climate Action Plan" update
- Ameresco, energy services company, Investment Grade Audit for retrofitting and upgrading lighting and mechanical systems
- A very successful Campus Sustainability Day with Provost Dan Howard as our keynote speaker
- Lowest kwh usage in December despite increasing building square footage by 126,114
- "Bags to Benches" - Green Aggies donated enough plastic bags to the City of Las Cruces program that the City received three free park benches from the recycler
- Elected our fourth Sustainability Council chair

Letter from the Sustainability Manager

This was the third year of the Office of Sustainability. It was our busiest year ever taking on more and more things to green our campus and beyond. Green Aggies showed up in great numbers and I am grateful.

Managing this office remains a great honor for me. My vision stays solid and true to bring the NMSU community to a place of conscious living on a daily basis in our work and personal lives. When I created the eleven sustainability initiatives I knew that we could focus on only a few at a time. To not lose sight of the importance of all eleven initiatives I personally keep my focus on them in all that I do.

This year we had more volunteers and programs, greater outreach to the community, as well as partnering with Facilities and Services. We live in a delicate desert environment and are connected to everyone and everything on the planet. Care must be taken to tend and nourish what we have. Educating you on environmental topics is one of the most joyful parts of my job. I thank each and every one of you for your efforts. Let us go forward to lovingly care for Mother Earth – join me on this journey!



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<http://sustainability.nmsu.edu>
575-646-7563

A handwritten signature in black ink that reads "joni". The signature is stylized with a long, sweeping underline that loops back under the name.

Mission Statement

To be a resource for the NMSU community to develop a common vision of sustainability through innovation, education, and action.

2013 Goals

1. Lower energy use, cost and greenhouse gas emissions
2. Expand role of Sustainability Manager to support Administration & Finance
3. Improve effectiveness and efficiency
4. Actively follow Administration & Finance strategic plan
5. Strengthen relationships

Sustainability Initiatives

1. Relationships and Resilience
2. Energy reduction
3. Waste reduction
4. Climate adaptation
5. Education
6. Food and Health
7. Green buildings
8. Transportation
9. Water
10. Materials
11. Social Justice



The new Satellite Chiller Plant on a winter morning - saving energy across campus

What is Sustainability at NMSU?

Sustainability at NMSU is a lifestyle and a responsibility. It relates to improving and maintaining the quality of human life while preserving the integrity, stability, and beauty of ecological systems for the future.

Energy Management

NMSU's Green Accomplishments



NMSU has partnered with
Ameresco, an Energy Services Company
to become more energy efficient and
promote sustainability.



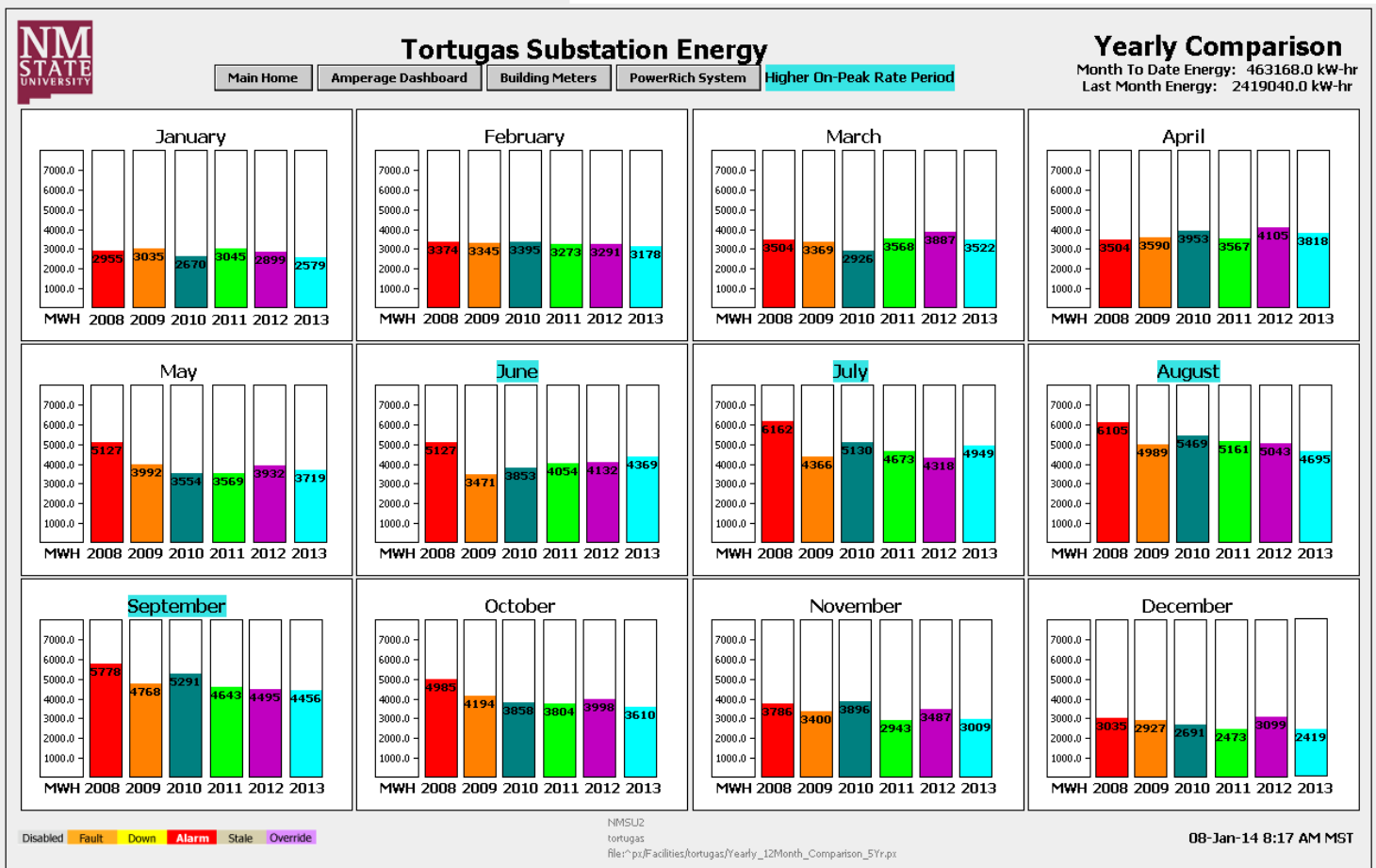




Thanks to our Energy Manager and our Utility Plant operators, December 2013 had its lowest comparative energy consumption ever!

ASNMSU Feed Slide

NMSU Main Campus Energy Usage Chart from 2008-2013



Energy Management

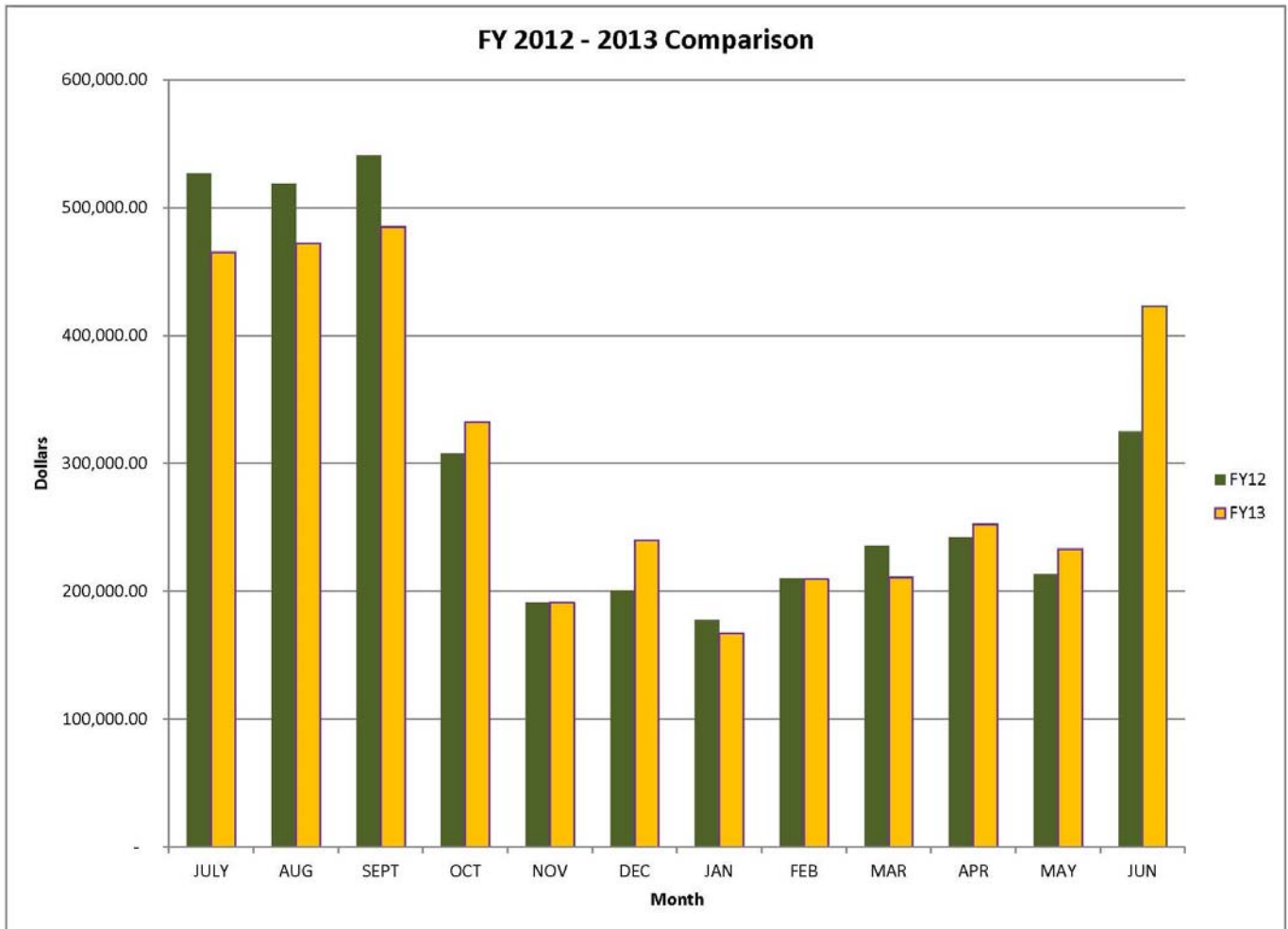
Utility Cost Savings

Energy Management at NMSU is a full time job. We have a full time Energy Manager in Facilities and Services. If you are a newcomer, you are the Queen of Green, then **Pat Chavez is the King of Kilowatts**. An electrical engineer, Pat has designed the Niagara Energy Management system and installed energy meters in buildings and put them to work helping us monitor and then cut our kilowatts. Remember that energy use and energy costs are not the same! You can use a lot of kw during a low-cost time of day and have less cost but still use a lot of energy, which emits greenhouse gasses.

From June through September El Paso Electric charges us **\$.05/kilowatt from 6 PM to noon**. During our high energy use times, **noon to 6 PM, we are charged \$.25/kilowatt**. This is why we encourage you to be more careful with your energy use during the hottest time of the day. Thank you!



It all adds up!



Go Aggies! Go Green!

Facilities and Services

Facilities and Services shops are very aware of environmental efforts on campus. On the next two pages are a few of the things that they do to take care of the campus environment.

Access Control

- The locksmiths **recycle all the old keys and metals**
- New door hardware keeps buildings safer and saves money in repairs and preventing damage from break-ins.

Custodial

- Submitted Custodial Sustainability Initiatives
- Purchased day-time cleaning equipment that will **improve the indoor air quality** and lower noise pollution level during operation
- Continuing to expand use of **micro-fiber technology**
- Now using Green Seal® certified toilet cleaner that is safer for humans and the facilities
- Installed 2000 sq. ft. of entryway matting; each mat is made from 60 water bottles

NMSU placed 7th in the Grand Champion Category of RecycleMania in 2013 with a diversion rate of 66.87%.

Environmental Health & Safety

- Installed our second **Fix-it bicycle station** at Aggie Xpress
- Lowered safety incidences - keeping Aggies healthy and sustaining lives



Go Aggies! Go Green!

Electricians

- Standard procedure to replace all old fluorescent fixtures with either up-graded fixtures or LED fixtures
- Replaced old parking lot lights in lots 68, 71, and 33 with new high-efficiency LED lights
- Standard policy to use Cree 100 watt LED for lamp (bulb) replacement
- Major upgrade at Center for the Arts replacing one hundred old 50 W halogen lamps with new 7 W LED; also replaced 120 old 100 W incandescent lamps with 18 W LED lamps

Grounds

- **Xeriscaped** almost 2 acres of grounds (ARC/Genesis, Arrowhead Dr., inside corners of the stadium, Branson Library, American Indian Student Center, Jett Hall, Pan Am Ticket Booth, Gardiner Hall, and Ed Services) saving water and creating a beautiful desert environment
- Installed water management system for athletics to control water evapo-transpiration
- Landscape restoration at Business College courtyard: 11,000 sf of eco-pavers keep water from going to waste stream by runoff; new poles and LED lights installed (below)

Energy Mgmt. Systems

- Repaired or replaced chilled water meters in a dozen buildings
- Replaced failed electric meters to get better data quality to make better decisions on daily operations and better energy management information



- Brought new Center for the Arts building under Niagara Energy Management System control
- Installed new lab projects to **operate more efficiently**
- Converted **exterior lighting to LED** at domestic water storage tank
- Built a new Niagara server housed at computer center for better reliability to maintain **quality of data and operations**
- Worked in close partnership with Ameresco, our energy services contractor, to develop metrics for the Internal Grade Audit.

Mechanics

- Recycling fluids, oils, filters, and tires
- **Keeping engines tuned up for highest efficiency and lowest emissions**

Facilities and Services

Paint/Movers

- Continuing use of **low VOC** paint
- Movers partnering with Office of Sustainability to pick up recycled toner boxes

Mechanical (HVAC)

- Replaced old 10 SEER rooftop package units with to 14 SEER which saves energy
- Replaced failed electric meters with new meters to get better data quality to make better decisions in daily operations and **better energy management information**



- Reclaiming refrigerants and recycling metal from old refrigerator units
- Using only **high-efficiency motors** as standard procedure when replacing failed motors
- Using as much outside air as possible to open dampers instead of using production chilled water
- Repairing condensate leaks underground to save water, chemicals, and save energy in the production of re-heated cold water
- Filter Preventive Maintenance program to help reduce purchase of filters and extend their life. **This improves indoor air quality**, protects coils so they have better heat transfer, and lowers electrical energy due to cleaner filters.

Plumbing

- Installed a **total of 15 bottle filling stations** across campus
- Standard procedure to use **low flow toilets and faucets** when replacing failed units; recycling old metal
- **Backflow prevention program** makes our drinking water safer as well as saving our precious water
- Installed manhole covers to prevent groundwater from infiltrating sewers, thus saving us money for only the water we use (not rainwater); also saves money because we're not pumping water out
- Installed a **state-of-the-art water production system** with sophisticated water quality controls

Project Design + Eng.

- Managed the design and construction of five LEED (Leadership in Energy and Environmental Design) buildings giving us a total of 13 LEED buildings

Recycling

- Placed **7th in RecycleMania** tournament in Grand Champion category out of over 600 schools
- Increased our diversion rate from 36.5% to 52%, keeping ever more objects from the landfill

Sign Shop

- Saving scraps of vinyl and plastic to use again for smaller jobs
- Using environmentally friendly application liquid
- Using rags instead of paper towels

Structural Maintenance

- Extend roofing with reflective coating that raises albedo (reflectance) and heat in building
- **Recycling construction materials**
- Using water-base products instead of solvents creating better indoor air quality
- Abating asbestos flooring and replacing with new recycled and water-based products
- Teaming crews to **save fuel and lower our GHG emissions**

Utilities

- Using new chillers that utilize excess steam at the Chiller Satellite Plant (CSP)
- New ice plant at CSP builds up ice in the evening at lower electrical costs; then melts during the day to shut the chillers down during higher electrical utility rate times
- **Operators are running the system as efficiently as possible** due to new ability to access information and understand cause and effect of utility systems.
- On-going training on new computer systems and mechanical systems at CSP to run things more efficiently
- **Preventive Maintenance program** lessens unscheduled downtimes and allows scheduled down times.
- New turbine at the Central Utility Plant produces more electricity than the old one - the more energy we produce the less we buy from El Paso Electric



Campus Sustainability Day

NMSU celebrated its second annual Campus Sustainability Day (CSD) event on October 23. The national CSD theme was “Climate Adaptation: Resilient Campuses and Communities”. CSD was a national day of focus on the environment - on what has been accomplished and what is needed to maintain the momentum to green NMSU. Emphasis is on connecting to new groups and allies on campus, highlighting student stories, connecting diverse planning efforts, and outreach beyond the campus to other environmental organizations.

Tabling

The Office of Sustainability started the day off by hosting a tabling event outside Corbett Center. We invited outside organizations (Savers, Habitat for Humanity, Prom Dress Project, and La Tienda) to show off their reuse principals. Green Chamber of Commerce, Great Conversations, and the City of Las Cruces were there to talk green. NMSU students and other departments included ESSO, OASIS, ASNMSU, Phi Eta Gamma, Career Services, Leyendecker Farm for biofuels and Housing & Residential Life. The night before CSD we had a poster-making party. Students from NMSU and Arrowhead Park Early College High School made posters with environmental messages and those were hung in the trees to share “green factoids” (below). The posters were designed by each individual student so they could share their knowledge of sustainability and share it with other students and visitors.



Campus Sustainability Day posters made by the students hang in the trees at Corbett Center during morning tabling session.

Webinar

During the lunch hour we joined a webcast for discussion from higher education and climate leaders on the role of campuses in adapting to a changing climate, innovations in climate resilience and mitigation, and community partnerships. The broadcast featured presentations and a discussion from panelists, touching on leadership and practical issues related to campuses, community, and addressing both opportunity and responsibility in a changing climate.



Provost Howard speaking to Green Aggies at evening forum

Evening Campus Forum

The evening forum is always the most popular event of CSD. This year was no exception. Our keynote speaker was our new Provost, Dr. Dan Howard. He told great stories of how he lives a sustainable life. Then we had three fantastic speakers. Greg Block spoke on all the green things that Housing & Residential Life is doing. Mark Uchanski spoke about sustainable agriculture. Steve Self spoke on living a consciously green life as “who you are”. Q&A followed with great questions. We had a Greek meal catered by Sodexo using compostable plates and utensils, recycled paper napkins, and recycled plastic cup giveaways. We encouraged people to follow Green Meeting practices and bring their own dining items, which a few people did.

Green Buildings

NMSU 2013 LEED Certified Buildings								
Bldg. #	Project Name	LEED Version	Pts. Achvd.	Cert. Level	Cert. Date	FS PD+E Proj. Mgr.	Architect	Gross Sq. Ft.
	DACC							
639	East Mesa Phases 6 and 7	LEED-NC v2009	56	Silver	5/1/2013	Joe Payyapilly	Williams Design Group	66,500
640	DACC Hatch Center	LEED-NC v2009	57	Silver	6/21/2013	Joe Payyapilly	ASA Architects	6,854
	Main Campus							
619	Health and Social Services Annex	LEED NC 2.2	41	Gold	1/11/2013	Orasa Vaught	The Design Group	7,387
631	Center for the Arts	LEED NC 2.2	41	Gold	11/20/2013	Orasa Vaught	Holzman Moss Bottino	59,000
632	Auxiliary Services/Barnes & Noble	LEED-NC v2009	60	Gold	2/26/2013	Orasa Vaught	Antunovich Associates	45,000



Center for the Arts lobby under construction

In 2006 an Executive Order was signed that requires all Executive Branch state agencies, including the Higher Education Department to adopt the [US Green Building Council's Leadership in Energy and Environmental Design \(USGBC LEED\) Rating System](#).

In 2013 there were **five new LEED buildings**: two Silver and three Gold. When we first started building green it was new to the project managers and to the architects and contractors. Now it is standard building practices. With buildings using 40% of the overall energy use and with our 7th OoS initiative as green buildings, we believe that we continue on the right path to conscious planet-friendly structures.

"...buildings and communities define our lives. They are habitat. Shelter. Places for assembly or sanctuary. But they are also our front line of defense in battling climate change and the final piece of a complex puzzle in how we create communities that enhance our lives, not compromise them. The walls around you and the floor beneath your feet, the sidewalks and bike paths that are increasingly linking us together are all critical pieces of how we are reimagining our lives and our economy.

Rick Fedrizzi, USGBC

Toner Recycling

Office of Sustainability has a Toner Recycling program in partnership with Office Max. There is no charge for this program and for each cartridge recycled money is donated by Office Max to **Feeding America**. In 2013 we helped **donate \$100.45**. The FS Movers picked up a total of 66 20" X 20" boxes from 41 departments across campus.

Toner cartridges recycled in 2013	
Qty of units kept from landfill	424
Total cartridge wt/lbs	1072.89
Material wt/lbs kept from landfill	
Plastic	474.99
Aluminum	64.39
Steel	266.46
Copper	3.56

Green Basketball Game

On January 10th the Office of Sustainability participated in the women's basketball game during halftime. Two students were selected to choose between recyclable, non-recyclable and trash items and to get them to the correct bins as quickly as possible. The goal was to bring awareness about the importance of recycling.



Reuse Office Supplies

Spring 2013, we sent out a campus-wide request to share used office supplies to be able to give away to our students for free. During on-campus tabling sessions we had a "Free!" sign and the students loved getting materials at no cost. Below is the inventory of the items donated for this cause.

Reuse Program Inventory 2013	
Item	Qty.
3-ring binders	12
Hole punch	1
Pendaflex folders	50
Pendaflex folder tabs	1600
Vertical file dividers	3
Jumbo paper clips, 100 ct.	10
4" X 2" labels 120 ct.	3
100 ct. paper clips boxes	30



Bags to Benches

Suzanne Montes, Admin. Assistant, Sr. for Administration & Finance began an outreach program with the City of Las Cruces. It was a competition between the four A&F departments:

1. Auxiliary Services (Team Leader: Tammy Anthony)
2. Business Affairs (Team Leader: Suzanne Montes)
3. Facilities and Services (Team Leader: joni newcomer)
4. ICT (Team Leaders: Norene Hammond and Christine Quintana)

Over a period of three months, we collected 3,228.7 pounds of plastic bags, allowing the City of Las Cruces to be awarded three park benches through the Trex "Bags to Benches" program.

The Office of Sustainability manager was asked why we don't do this program at NMSU and the answer is that the OoS is about



Angela Throneberry and Norma Grijalva with the award made by Suzanne Montes out of recycled wood



Miscellaneous Outreach

The Manager of the Office of Sustainability reaches out regularly to people and business in the community. Some of her many presentations included the following:

- **Workshop with a dozen high school teachers** from Las Cruces discussing what NMSU does to be green; invitation by Jack Greene, A.P. environmental science workshop consultant for the College Board.
- **DACC Pre-Architecture Summer Camp** - presented NMSU sustainability initiatives to junior high and high school students; helped with individual class projects; judged final projects.
- Spoke to Dr. Mark Andersen's Honors class "**The Global Environment**" about being a Green Aggie
- Shared the pros and cons of the STARS program with the **UTEP President's Advisory Committee on Sustainability** to help them decide whether to do STARS or not.
- joni newcomer spoke to **biology students at Oñate high school** about climate change as her final project for the Honors Climate Change class she took with Sundt Honors Professor Connie Falk.
- Met with City of Las Cruces group and NMSU group to collaborate on a possible bike share program.

NO cans or bottles!

"Bags to Benches"

A+F outreach program and competition to get park benches for the City of Las Cruces

recycle your plastic here!

The following plastics are recyclable:

- grocery bags
- bread bags
- case over-wrap plastic
- dry cleaning bags
- newspaper sleeves
- ice bags, pellet bags
- food storage bags, i.e., Ziploc
- produce bags
- bubble wrap
- cereal bags

- Bags must be clean and contain no paper or food products
- Competition coordinator will pick up bags on a monthly basis: 8/21, 9/20, 10/18 - if pickup is needed before that, please contact joni at newcomer@nmsu.edu or 6-7563

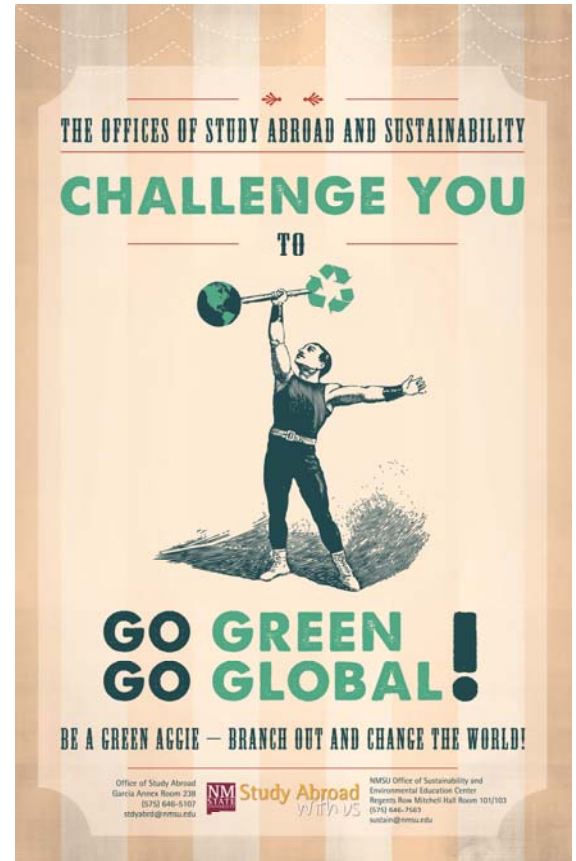
Go Aggies! Go Green!

Study Abroad and OoS “Go Green! Go Global!”

In collaboration during the spring semester with International Programs we developed a program called “We Challenge You to Go Green! Go Global”. The students from Study Abroad volunteered to participate in the City “Keep Las Cruces Beautiful” first-ever *Reuse and Recycle Fashion Show*. The show was to educate and entertain on how materials that would normally be thrown away can be turned into something new. We participated in the reuse portion of the show using items that were reused instead of purchased new.



The students designed and constructed a dress out of reused materials. Jasmin Bouquet (left) was the model that walked the runway showing off the design and construction skills of the international students. Below, Andrea de la Rosa shows off the dress.



Internships

Two students did internships with the Office of Sustainability.

Alyssa Ybarra did her internship to learn about the many different ways that you can live a sustainable lifestyle. Her final presentation was a lovely Power-Point with a broad array of green actions to share with other NMSU students.

Grant Hamilton created a bicycle map of all the bike paths across the city, on campus, and mapped all the bike racks on campus.

I am grateful for the students that like to focus on sustainability topics in their internship. It is a shared learning experience and benefits both the student

“Aggie Welcome Orientation”



Odds and Ends

Bicycle Friendly University (BFU)

NMSU got a bronze designation for the Bicycle Friendly University from the League of American Bicyclists. The BFU program recognizes institutions of higher education for promoting and providing a more bikeable campus for students, staff and visitors. Three of our Council members, Jean Conway, Jamie Lakey, and David Shearer, worked with other NMSU faculty and staff to get our rating that includes the "5 E's" - Engineering, Education, Encouragement, Enforcement, Evaluation and Planning. Another hopeful project will be a bike share program - stay tuned!

Council Leadership Team

The Council elected a new leadership team in November 2013. All are welcome! Thank you to all the volunteers who spend their time caring for the planet with like-minded people.

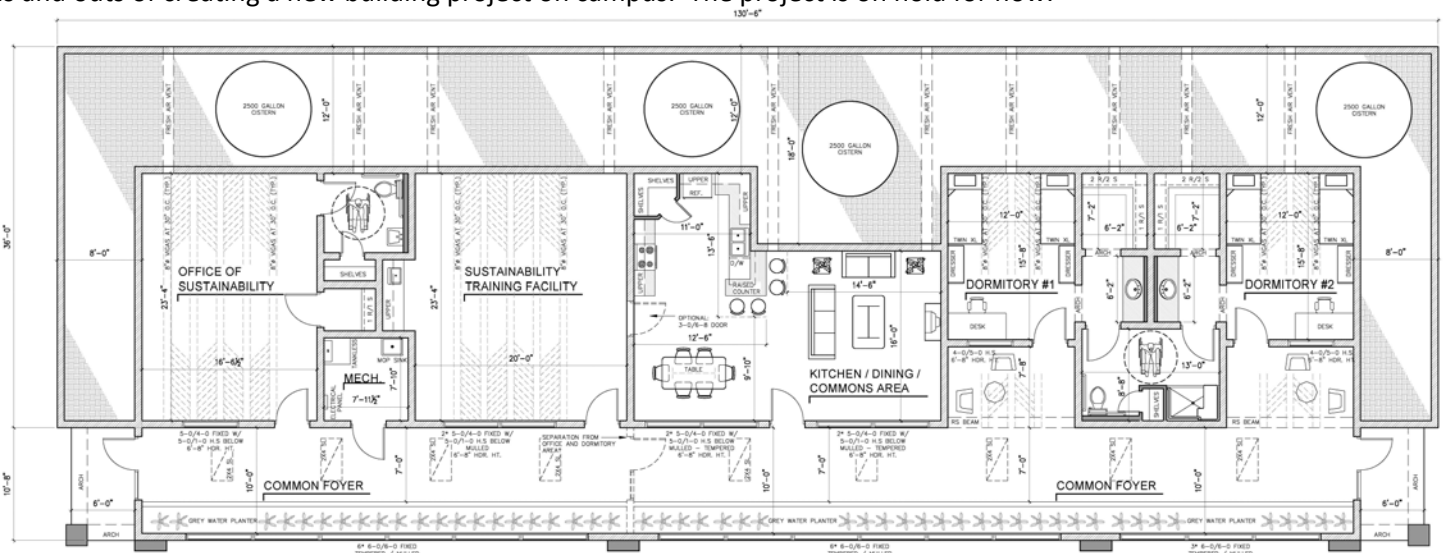


New Council leadership team November 2013

Sustainability Council 2013-2015 Leadership Team		
Approved by President Carruthers 10/7/2013		
Committee	Chair	Term
Council Chair	Steve Self, FS Space Planning	11/01/2013 - 10/31/2015
Past Chair	David Boje, Business faculty	08/01/2012 - 07/31/2013
Education and Research	Rani Alexander, Anthropology faculty	11/01/2012 - 10/31/2014
Operations	Pat Chavez, Energy Management	11/01/2013 - 10/31/2014
Planning Administration and Engagement	joni newcomer, Mgr. Environmental Policy and Sustainability	11/01/2013 - 10/31/2015
Secretary	Emily Kelley, Sustainability Communications Specialist	11/01/2012 - 10/31/2014

Sustainability Research Center

What if we built a building whose soul focus was sustainability? What if that building was built by students, faculty and staff and people from the community? What if that building was an earthship? Now we have your attention, right? As a result of our 2012 Campus Sustainability Day forum, one of the breakout groups made this dream one of the goals for environmentally-related projects on campus. January 2013 Steve Self, FS Space Planning Manager, took that project by the horns and gathered a task force of interested people to brainstorm the idea into fruition. Daniel Fernandez, a Project Manager at FS Planning Design & Engineering (PDE), drew up the plan per Steve's ideas (below). Greg Walke, Campus Architect, helped us understand the ins and outs of creating a new building project on campus. The project is on hold for now.



Acknowledgements

Special thanks to the following people:

NMSU Board of Regents
 Haubold, Glen
 Breedlove, Brittany
 Kelley, Emily
 Self, Steve

Rios, Karin
 Rios, Luis
 Shearer, David
 Silva, Dario
 Uchanski, Mark
 Walke, Greg

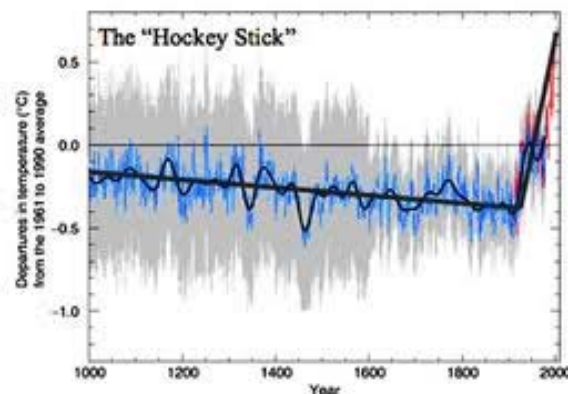


Individuals

Baker, Matt
 Block, Greg
 Cast, Melissa
 Chavez, Pat
 Christmann, Danny
 Conway, Jean
 Cruz, Sativa
 De Necochea, Gladys
 Doolittle, Katrina
 Getchell, Amanda
 Gosnell, Joyce Newcomer
 Hamblen, Carrie
 Harrell, Dale
 Harris, Randy
 Howard, Dan
 Luchau, Mike
 Maestas, BJ
 McCoy, Chelsea
 Michaels, Suzanne
 Molina, Cesar
 Montes, Suzanne
 Moreno, Omar
 Nature, Mother
 Richard, Bryce

Thanks to the following organizations:

ASNMSU
 ESSO - Environmental Science Student Organization
 OASIS—Organization of Aggie Students Inspiring Sustainability
 The operators of the Utility Plants
 Sustainability Council
 Facilities and Services
 Last but not least, thanks to the students who inspire us to do better to ensure their healthy future



The trouble is that the hockey stick graph became an icon and deniers reckoned if they could smash the icon, the whole concept of global warming would be destroyed with it.

- Michael E. Mann