

Los Alamos County Department of Public Utilities Outreach Service Agreement AGR16-033

2018 Calendar Year Report March 6, 2019



Prepared by Elizabeth Watts, Education Programs Director
Pajarito Environmental Education Center
2600 Canyon Road, Los Alamos, NM 87544
(505) 662-0460
educator@peecnature.org

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Program Summary

In February 2016, Pajarito Environmental Education Center (“PEEC”) entered into a contractual agreement with the Los Alamos County Department of Public Utilities (“DPU”) to provide educational services to DPU customers about water and energy conservation in Los Alamos County.

This contract continues the work started under a previous contract between DPU and PEEC, carried out between 2012 and 2015.

The period covered by this report is calendar year 2018. During this time, PEEC engaged in outreach efforts through Los Alamos Public Schools (“LAPS”) and at public venues, including at the Los Alamos Nature Center, which is operated by PEEC.

This report contains a summary of outreach efforts and results, budget summaries for 2018, and overviews of each of the task orders, including a brief summary of work completed and plans for continuation of each project. A summary of lesson plans is provided. Finally, the report includes a list of teacher contacts, publicity materials and teacher evaluations.

Complete curricula, outfitted trunks, activities, exhibits, giveaways and other materials are stored at the Los Alamos Nature Center and may be viewed there. If you would like to observe a lesson, please contact the Education Program Director at educator@peecnature.org.

Cover photo: Los Alamos Fourth Grade students at the Fourth Annual Water Festival.

Year at a Glance

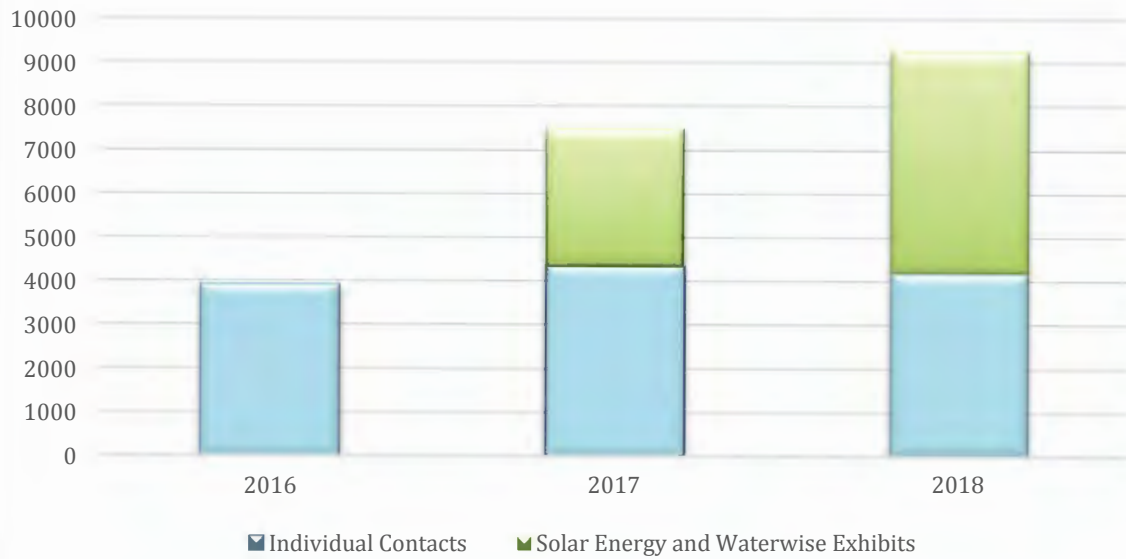
2018 Outreach Summary

- **4218 connections** made with community members about energy and water conservation through interpretive lessons, workshops and events
- **5093 visitors** learned about solar energy through the new interactive exhibit
- **2872 student contacts** allowed Los Alamos Public School students to engage with water and energy in hands-on lessons
- **1346 people** participated in water and energy conservation activities at the Los Alamos Nature Center, the Los Alamos Science Fest, and other community venues
- **286 4th graders** took part in interactive demos about water at the 4rd annual Los Alamos Water Festival
- **350 visitors** attended the Electric Vehicle show to learn and experience all types of electric vehicles

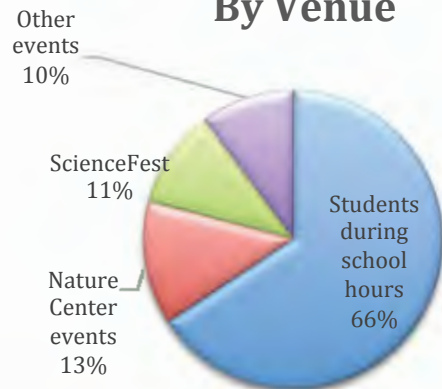


Above: Visitors learn about the many different types of electric vehicles at the 2018 Electric Vehicle Show that was held in conjunction with Los Alamos County ScienceFest. Photo by Thomas Graves

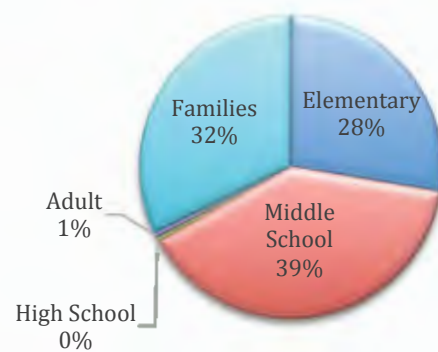
TOTAL PEOPLE REACHED, BY CONTRACT YEAR



2018 Outreach By Venue



2018 Outreach By Age



Los Alamos Middle School engineering students learn about passive solar heating by designing and building their own model houses and then measuring the temperature inside the model.



An 8th grader at LAMS performs an experiment to see how chemical energy can transform into heat.

Participant Feedback:

"After the water festival, students were much more aware of water conservation. The waste water handling was fascinating for the kids."

- 4th-grade teacher

Students asking great questions. How did the rocks get there? Is there any soil in the aquifer? Were there big rocks in the aquifer? How did the water get in there?

- 5th-grade teacher

Well done! Great to see this sort of sustainability event in Los Alamos. Overall, terrific!

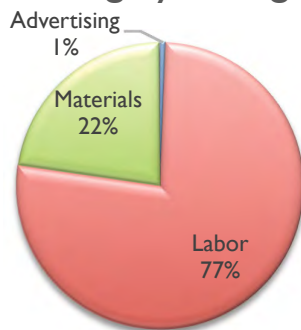
- Comment on Electric Vehicle Show

Budget Summary

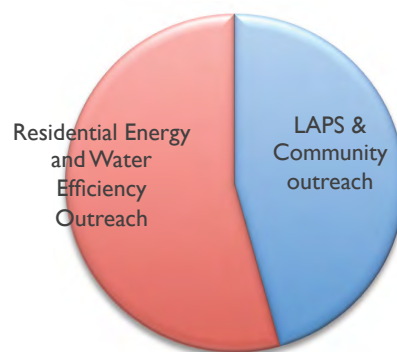
Budget Overview January – December 2018

Task Order	Visitor Contacts	Hours	Category	Budgeted	Spent
3 & 5: LAPS & Community	3842	393	Advertising	\$500	\$40.00
			Labor	\$24,000	\$16,526.04
			Materials	\$11,500	\$5,651.71
			Transportation	\$2,000	\$0.00
			Total	\$38,000	\$22,217.75
4 & 6: Residential E & W	5445	391.75	Advertising	\$1,200	\$216.70
			Labor	\$7,200	\$20,092.08
			Materials	\$3,600	\$3,934.65
			Transportation	\$0	\$54.50
			Total	\$12,000	\$24,297.93
All Task Orders	9287	784.75	Total	\$50,000	\$46,515.68

Spending by Category



Spending by Task Order



Invoice Summary January – December 2018

MONTH	PEOPLE	HOURS	COST
JANUARY	1100	94.25	\$6,303.36
FEBRUARY	685	90.5	\$7,447.99
MARCH	556	39.75	\$5,384.85
APRIL	1781	181.25	\$8,628.38
MAY	310	33.25	\$1,479.13
JUNE	535	54.25	\$3,050.10
JULY	1396	134.5	\$6,430.66
AUGUST	554	34	\$2,136.89
SEPTEMBER	549	32.5	\$1,501.80
OCTOBER	621	38.25	\$1,761.68
NOVEMBER	773	35	\$1,590.75
DECEMBER	451	17.25	\$823.99
TOTAL	9311*	784.75	\$46,539.58

* Includes visitors to the waterwise gardening and solar energy exhibits, calculated as a percentage of nature center visitors during 2018.

2018 Task Order Overviews

Los Alamos County Public Schools and Community Outreach

Task Order 5

Goal:

Educate Los Alamos students about energy and water and the importance of conservation through hands-on instruction in K-12 classrooms and at community events.

Scope:

Modify and implement classroom curricula that include hands-on in-class activities and field trips that meet New Mexico State curriculum and Common Core standards. The instruction should focus on energy and water especially as they relate to Los Alamos County; understanding energy conservation; and/or other topics deemed appropriate by agreement between PEEC and DPU staff. A PEEC representative will present the curricula, on invitation from the classroom teachers, in Los Alamos schools. Organize a water festival for 4th-grade students including water-themed activities and giveaways. Bring energy and water themed exhibits to community events.

Year-End Comments:

1) Accomplishments:

- We worked to align the energy and water programs with the Next Generation Science Standards (NGSS) that were adopted by New Mexico this year.
- We hosted the fourth annual 4th-grade water festival. The festival featured presenters from around the community, and received resoundingly positive feedback from participating teachers.
- We brought water-conservation-themed activities and exhibits to community events, including PEEC's Earth Day and Los Alamos Science Fest.

2) Plans for future work:

- We plan to complete our revision of all lessons to incorporate the new New Mexico STEM Ready science standards as well as social studies standards about resource management.
- We would like to expand the number of people capable of being instructors for this program.
- Teachers are excited about the 5th annual water festival, scheduled for April 12 and May 3, 2019.
- We plan to continue bringing energy and water-conservation activities to school science nights and community events.

Los Alamos/White Rock Residential Energy and Water Efficiency Outreach

Task Order 6

Goal:

Educate Los Alamos County residents and homeowners about energy and water conservation at home.

Scope:

Organize events, programs, and initiatives to demonstrate energy and water efficient solutions to Los Alamos residents and homeowners. Create signage to be displayed at the Los Alamos Nature Center highlighting energy and water conserving features such as photovoltaics, water harvesting and waterwise gardening.

Year-End Comments:

1) Accomplishments:

- One major accomplishment this year was the installation of a new solar energy exhibit outside the Los Alamos Nature Center.
- We updated the brochure for the waterwise garden exhibit.
- We organized and hosted an electric vehicle show to coincide with the Los Alamos Science Fest. This show featured electric vehicles of all types and information about Los Alamos County's electric grid and solar projects
- We organized a tour of the hydroelectric power plant in Abiquiu to help Los Alamos residents learn about electricity generation.

2) Plans for future work:

- Update the solar energy exhibit with real-time data from Los Alamos as well as an interactive portion on local monsoons.
- Plan another Electric Vehicle Show during ScienceFest but change the location of the cars so that more people attend.

Curriculum Overview

2018 Lesson Summaries

Complete lesson plans are stored at PEEC.
Contact educator@peecnature.org to see them.

Elementary

Grade/Topic	Academic Standards	Lesson Overview
3/Energy	Electricity & Magnetism	Students explore electricity and magnetism, and find out how electromagnetic generators are used to produce our electricity.
3/Water	Weather & Climate	Students learn how specific traits allow plants to survive in our arid climate, and design a garden with plants selected for our climate.
4/Energy	Energy conversion, fuels	Students observe how energy changes form, and role-play the energy transformations in a coal-fired power plant.
4/Water	Human-natural environment interaction	Students demonstrate human impacts on the water cycle through an active game.
5-6/Energy	Science can be used to protect resources	Students discover factors affecting passive solar energy by building and testing a model house.
5-6/Water	Locations of water on Earth	Students build a model aquifer and design and test solutions to extract the water.

Middle School

Grade/Topic	Academic Standards	Lesson Overview
7	Water & carbon cycles	Students do experiments and play games to explore the water and carbon cycles.
8	Energy sources and transformations	Students perform laboratory experiments to discover how energy changes form, and how energy transformations are used to produce electricity.

2018 Teacher Contact List

(some teachers organize lessons for others at their school)

Teacher	School	Email
Allison Washburn	Aspen	al.washburn@laschools.net
Amy Gilbert	Aspen	a.gilbert@laschools.net
Ronda Harmon	Aspen	r.harmon@laschools.net
Tammy Moore	Aspen	t.moore@laschools.net
Angela Lopez	Barranca	an.lopez@laschools.net
Annemarie Brown	Barranca	an.brown@laschools.net
Kareen Reyer	Barranca	k.reyer@laschools.net
Samantha Waidler	Barranca	s.waidler@laschools.net
David Parsons	Chamisa	d.parsons@laschools.net
Mitzi Mann	Chamisa	m.mann@laschools.net
Katie Tauxe	LAHS	k.tauxe@laschools.net
Angie Chipera	LAMS	a.chipera@laschools.net
Curtis Terrill	LAMS	c.terrill@laschools.net
Eva Abeyta	LAMS	e.abeyta@laschools.net
Lindsey Fullop	LAMS	l.fullop@laschools.net
Megan Rains	LAMS	m.rains@laschools.net
Sarah Blom	LAMS	s.blom@laschools.net
Brent Collum	LAMS	b.collum@laschools.net
Barbara Kerley	Mountain	b.kerley@laschools.net
Donna Schaefer	Mountain	d.schaefer@laschools.net
Kim Clayton	Mountain	k.clayton@laschools.net
Lorraine Whalen	Mountain	l.whalen@laschools.net
Lindsay Gibson	Mountain	l.gibson@laschools.net
Barbara Kress	Piñon	b.kress@laschools.net
Herb Siegel	Piñon	h.siegel@laschools.net
Kati Steinberg	Piñon	k.steinberg@laschools.net
Kristen Martines	Piñon	k.martines@laschools.net
Whitney Holland	Piñon	w.holland@laschools.net

Water Festival Information

Water Festival Summary

Date: April 6 & 13, 2018

Location: UNM-LA

Time: 9 AM – 2 PM

Description

We hosted Los Alamos 4th-grade students at our fourth annual Los Alamos Water Festival at UNM-LA. During the day, students participated in several mini-lessons about water presented by community experts, and then created a water-themed art project to help them summarize their learning.

Giveaways (all items with DPU logo)

- String backpacks for all students
- Totes and water-related books for all teachers
- Water-conservation-themed water bottles for all participants
- Color-changing pencil for all participants

Attendance

All 4th grade classes in the district took part, however there were no homeschool students that attended this year. Three homeschool students were registered for 4/13, but none of them showed up. In total 288 students, 13 teachers, 6 IAs and approximately 20 parents/chaperones attended this event.

Post-Event Comments

- Almost all of the presenters came back from previous years, and we had more presenters than we needed on both days.
- We tried to alternate when classes saw a hands-on presentation and a model.
- Teachers commented that their students were very engaged and that students were able to participate frequently during most presentations.
- PEEC volunteers were experienced from previous years and were therefore a huge help in logistics.
- UNM-LA was a wonderful location for the event. Alex was gracious with indoor options for when the weather was less than ideal.
- Teachers and presenters appreciated that lunch was provided.
- One of the teachers (Mitzi Mann) had a water cycle song. Having the group sing the song together was an effective way to get the kids focused at the beginning of the festival. Consider having all students learn this song for next year.

Community Presenters

Organization	Contact Name	Email	Presentation Title
LANL	Michelle Bourret	bourret@lanl.gov	Groundwater
LANL	Sanna Sevanto	ssevanto@gmail.com	Plants, Water & Climate
DPU	Jennifer Baca Joshua Silva	Jennifer.baca@lacnm.us	Water Distribution/Wastewater Collections
DPU	Clay Moseley	tclaynm@gmail.com	Pump Power
Bandelier	Hanna Davis	Hanna_davis@nps.gov	Fire & Water
NM Environment Department	Megan Green	Megan.green@state.nm.us	Pollution and the Water Cycle
City of Santa Fe	Lisa Noriega	lmnoriega@santafenm.gov	Enviroscape Watershed/Non-point Source Model
NMSU	Rossana Sallenave	rsallena@nmsu.edu	Water Quality: How Do We Measure It?
PEEC	Denise Matthews	denise@peecnature.org	Surface Tension
PEEC	Siobhan Niklasson	educator@peecnature.org	Watercolor Prints
UNM-LA	Jane Clements	Janec181@unm.edu	Water Explorations

Water Festival 2018 Schedule

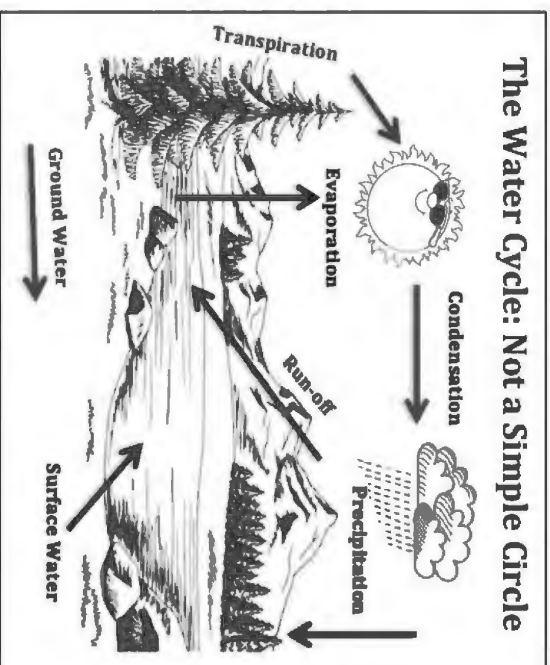
Date: Friday, April 6, 2018
Location: UNM-LA

Schedule Overview

8:30 AM Presenter Set-up
9:15 – 9:30 Buses arrive at Sullivan Field
9:30 – 9:40 Introduction (Student Center)
9:45 – 10:10 Lesson 1
10:15 – 10:40 Lesson 2
10:40 – 10:55 Snack/Recess Break on Mesa Field
11:00 – 11:25 Lesson 3
11:30 – 11:55 Lesson 4
12:00 – 12:40 Lunch on Mesa Field
12:45 – 1:15 Closing Project
1:20 – 1:40 Closing Session (Student Center)
1:40 – 1:45 Buses Depart from Sullivan Field
1:45 – 2:15 Clean-up spaces

April 6th Lesson Schedule

Class	Lesson 1 9:45-10:10	Lesson 2 10:15-10:40	Snack/Recess Break On Mesa Field 10:40-10:55	Lesson 3 11:00-11:25	Lesson 4 11:30-11:55	Lunch Break on Mesa Field 12:00-12:40	Art Project 12:45-1:15
Kress 1	230	517		606	Kiva		610
Kress 2	203	625		627	610		606
Siegel 1	Kiva	312		230	606		230
Siegel 2	610	627		203	230		517
Lee	606	610		220	517		625
Mann	220	Kiva		312	625		203
Thornton	627	220		625	203		627
Koski	312	203		517	627		220
Reyer	625	606		Kiva	220		312
Schmidt	517	230		610	312		



Water Festival 2018 Schedule

April 6th Presentations and Locations

Room Number	Title	Presenter
230	Groundwater	LANL Earth & Environmental Sci.
203	Plants, Water and Climate	LANL Earth & Environmental Sci.
606	Water Distribution/Wastewater Collections	Department of Public Utilities
Kiva (Outdoors)	Pump Power: Moving Water	Department of Public Utilities
610	Fire & Water	Bandelier Fire Department
220	Pollution and the Water Cycle	NM Environment Dept.
627	Enviroscape Watershed/Nonpoint Source Model	City of Santa Fe
312	Water Quality: How do we measure it?	New Mexico State University
625	Surface Tension	PEEC
517	Watercolor Prints	PEEC

Notes

- Today's theme is the Water Cycle: Not a Simple Circle
- Student takeaways:
 - Water moves through many complex processes on Earth
 - Most of the water on earth is not available for us to use/consume (it's stored in the ocean, frozen in glaciers, and found underground), so it's important to conserve what we do have!
- Each presenter will be assigned to one space and will stay there as classes rotate.
- Each class will attend 4 lessons, and each presenter will give 4 lessons.
- The project will be a circle book to help the students synthesize what they have learned and will be led by teachers and PEEC educators and volunteers.

Community Events Overview

2018 Public Event Summaries

Date	Title	Description	Attendees
4/21/18	Earth Day Festival	Visitors of all ages learn about water conservation through hands-on activities.	530
6/18/18	Nature Playtime: Garden Water Conservation	Families learn techniques for conserving water in their home gardens, including mulching soil and using water-conserving plant nannies.	33
7/14/18	Science Fest	Visitors of all ages did hands-on activities to see how people have conserved water on the Pajarito Plateau throughout history.	450
7/14/18	Electric Vehicle Show	Provided an opportunity for people to learn about electric vehicles through direct observation and discussion with electric vehicle owners.	350
9/21/18	Hydroelectric Dam Tour	Los Alamos residents toured the Abiquiu hydroelectric powerplant to learn about electricity generation.	24

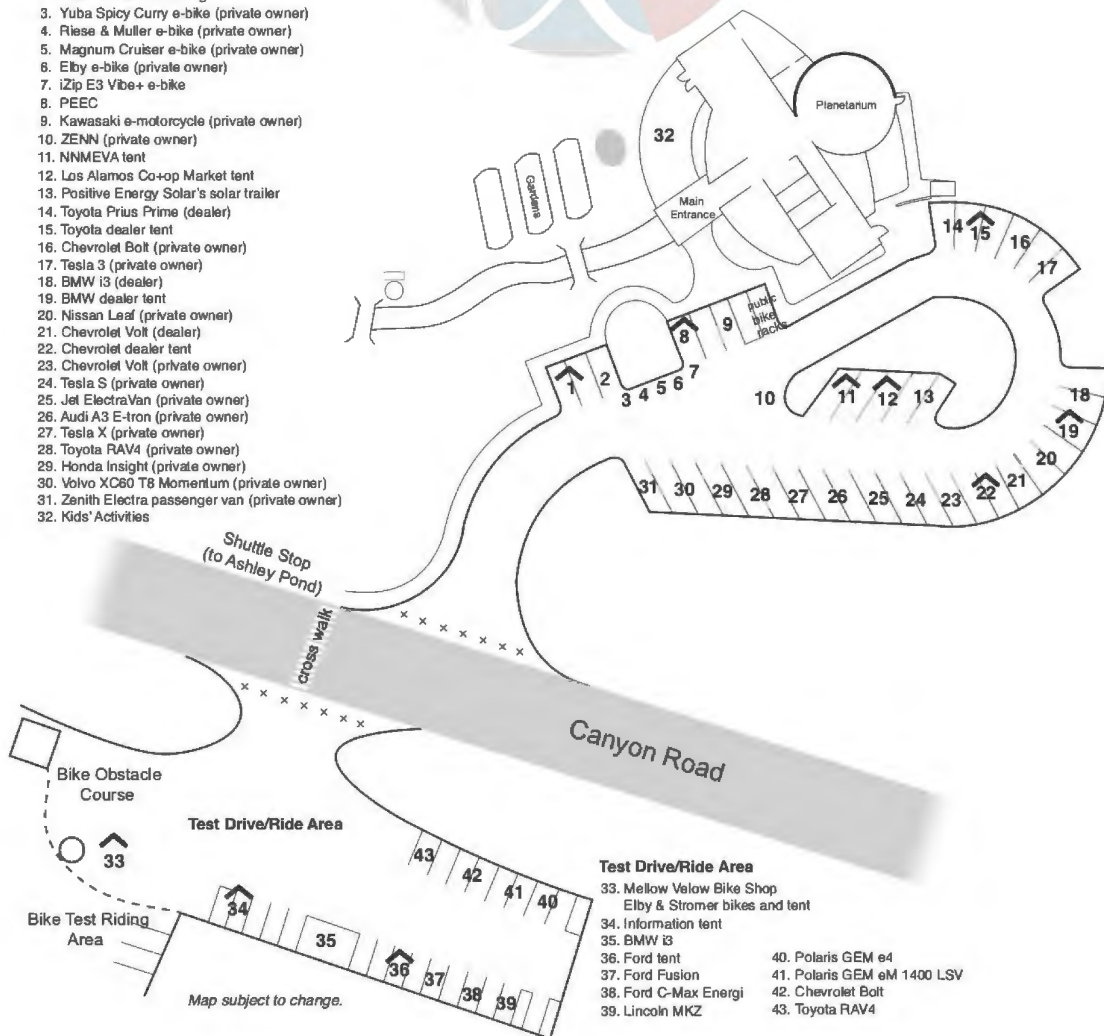


Electric vehicle show. Photo: Thomas Graves

2018 Electric Vehicle Show

Display Area

1. LAC Department of Public Utilities tent
2. LAC Ford C-max Energi
3. Yuba Spicy Curry e-bike (private owner)
4. Riase & Muller e-bike (private owner)
5. Magnum Cruiser e-bike (private owner)
6. Elby e-bike (private owner)
7. iZip E3 Vibe+ e-bike
8. PEEC
9. Kawasaki e-motorcycle (private owner)
10. ZENN (private owner)
11. NNMEVA tent
12. Los Alamos Co-op Market tent
13. Positive Energy Solar's solar trailer
14. Toyota Prius Prime (dealer)
15. Toyota dealer tent
16. Chevrolet Bolt (private owner)
17. Tesla 3 (private owner)
18. BMW i3 (dealer)
19. BMW dealer tent
20. Nissan Leaf (private owner)
21. Chevrolet Volt (dealer)
22. Chevrolet dealer tent
23. Chevrolet Volt (private owner)
24. Tesla S (private owner)
25. Jet ElectraVan (private owner)
26. Audi A3 E-tron (private owner)
27. Tesla X (private owner)
28. Toyota RAV4 (private owner)
29. Honda Insight (private owner)
30. Volvo XC60 T8 Momentum (private owner)
31. Zenith Electra passenger van (private owner)
32. Kids' Activities



Test Drive/Ride Area

33. Mellow Velow Bike Shop
Elby & Stromer bikes and tent
34. Information tent
35. BMW i3
36. Ford tent
37. Ford Fusion
38. Ford C-Max Energi
39. Lincoln MKZ
40. Polaris GEM e4
41. Polaris GEM eM 1400 LSV
42. Chevrolet Bolt
43. Toyota RAV4

Tour of Abiquiu Hydroelectric Generator



EXHIBITS

Powering Our Planet

The sun provides energy for life on Earth.



How does life on Earth depend on the sun? Plants survive by turning sunlight into food through photosynthesis while also creating the oxygen we breathe. Animals survive by eating plants—or eating other animals that eat plants. Energy for our planet begins with the sun.

The sun drives Earth's weather patterns and shapes ecosystems. It changes our landscapes and determines how and where humans thrive across the planet.

Energy for Our Homes

From ancient cliff dwellings of the Anasazi to the nature center where you stand, humans design structures considering the sun's energy. Discover more about how we use solar power by touching the screen below.



LOS ALAMOS
Department of Public Utilities
Bioscience, Energy, and Environment Center

The new solar energy exhibit has an informational panel about the sun and an interactive touch screen component for visitors to explore.

Throughout history, humans have taken advantage of the sun's power.

Modern Solar Power

Today, architects do the same things by designing houses with big windows facing south and may add an overhang to keep the hot summer sun from hitting them. However, we also have technology that captures the sun's energy and converts it to electricity. The panels on the nature center do just that.



Tap Here to learn more about current solar power!





Water is a precious resource in our high-elevation desert. Given our challenging growing conditions, choosing plants adapted to our climate is the best way to grow a successful and water-wise garden. Native plants thrive without added care in local wild areas. They add color to your garden and are the preferred food sources of native pollinators. Once established, drought-tolerant plants survive on little water. While exploring our gardens, look for other water-saving measures including mulches and soil amendments, irrigated oasis zones, and drip irrigation.

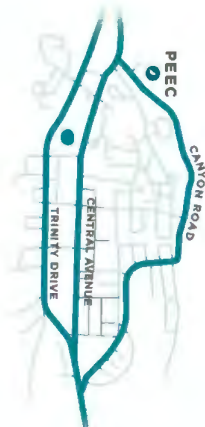
LOS ALAMOS
Department of Public Utilities
Electric, Gas, Water, and Wastewater Services

Explore nature.



Los Alamos Nature Center is operated by the
Pajarito Environmental Education Center
for Los Alamos County

2600 Canyon Road
Los Alamos, New Mexico 87544
505-662-0460, losalamosnature.org



PEEC
Pajarito Environmental
Education Center

PEEC is a non-profit organization founded in 2000 to connect people with nature. Los Alamos County hired PEEC in 2015 to operate the Los Alamos Nature Center. PEEC's Mission: Enriching people's lives by strengthening their connections with our canyons, mesas, mountains, and skies.



NATURE CENTER GUIDE RAISED BED GARDENS



PEEC
Pajarito Environmental
Education Center

Native/Wildflower Garden

Shrubs:

1. *Curt Leaf Mahogany (*Cercocarpus ledifolius*)
2. Golden Currant (*Ribes cereum*)
3. * Three Leaf Sumac (*Rhus trilobata*)

Grasses:

4. Indian Rice Grass (*Achnatherum hymenoides*)
5. Little Bluestem (*Schizachyrium scoparium*)

Perennials:

6. Anemone Sage (*Eriogonum jamesii*)
7. Bitterweed (*Hymenoxys richardsonii*)
8. Blue Flax (*Linum lewisii*)
9. Butterflyweed (*Asclepias tuberosa*)
10. Cardinal Penstemon (*Penstemon cardinalis*)
11. Chocolate Flower (*Berlandiera lyrata*)
12. Dotted Gayfeather (*Liatris punctata*)
13. Firewheel (*Gallardia aristata*)
14. Hooker's Evening Primrose (*Oenothera elata*)
15. Indian Paint Brush (*Castilleja integra*)
16. James's Penstemon (*Penstemon jamesii*)
17. Little Red Columbine (*Aquilegia triterata*)
18. Mexican Hat (*Ratibida columnifera*)
19. Missouri Evening Primrose (*Oenothera macrocarpa*)
20. Nodding Onion (*Allium cernuum*)
21. Prairie Sagewort (*Artemisia frigida*)
22. Purple Geranium (*Geranium caespitosum*)
23. Perky Sue (*Tetaneuris or Hymenoxys argentea*)
24. Rocky Mountain Columbine (*Aquilegia caerulea*)
25. Santa Fe Phlox (*Phlox nana*)
26. Scarlet Bugler (*Penstemon barbatus*)
27. Showy Four O'Clock (*Mirabilis multiflora*)
28. Spreading Fleabane (*Erigeron divergens*)
29. Sun Drops (*Calypophus hartwegii*)
30. Vining Four O'Clock (*Mirabilis oxybaphoides*)
31. Winter Fat (*Krascheninnikovia lanata*)
32. Whipple's Penstemon (*Penstemon whippleanus*)

*Outside the raised bed, on the south side.

Water-wise Garden

Shrubs:

1. Bur-woods Broom (*Cytisus scoparius* 'Burkwoodii')
2. Creeping Sumac (*Rhus trilobata* 'Autumn Amber')
3. Giant Purple Sage (*Salvia pachyphylla*)
4. Hedge Cotoneaster (*Cotoneaster lucidus* 'Peking')
5. Lavender Cotton (*Santolina chamaecyparissus*)

Perennials:

6. Shrubby Cinquefoil (*Dasiphora fruticosa*)
7. Spanish Broom (*Cytisus purgans* 'Spanish Gold')
8. African Daisy (*Osteospermum* 'Avalanche')
9. Ava's Hummingbird Mint (*Agastache* 'Ava')
10. Baby Tears Stonecrop (*Sedum album chloricum*)
11. Bearded Iris (*Iris germanica*)
12. Daylily (*Hemerocallis* 'Frais Hais')
13. Daylily (*Hemerocallis* 'F-cooled Me')
14. Golden Clematis (*Clematis tangutica*)
15. Ice Plant (*Delosperma floribundum* 'Starburst')
16. Ice Plant (*Delosperma* 'Fire Spinner')
17. Lavender (*Lavandula x intermedia* 'Grosso')
18. Meadow Sage (*Salvia nemorosa* 'May Night')
19. Mexican Feather Grass (*Nassella tenuissima*)
20. Mullein Southern Charm (*Verbascum phoeniceum*)
21. Red Hot Poker (*Kniphofia* 'Stark's Early Hybrid')
22. Rocky Mountain Penstemon (*Penstemon strictus*)
23. Spreading Fleabane (*Erigeron divergens*)
24. White Creeping Phlox (*Phlox subulata*)

Pollinator Garden

Shrubs:

1. Blue Mist Spirea (*Caryopteris clandonensis*)
2. Butterfly Bush (*Buddleia davidii* 'Nanho Blue')
3. Fernbush (*Chamaebatia millefolium*)
4. Red Lake Currant (*Ribes rubrum* 'Red Lake')

Grasses:

5. Little Bluestem (*Schizachyrium scoparium*)

Perennials:

6. Dog Day or Mint-Leaf Bergamont (*Monarda fistulosa* var. *menthifolia*)
7. Black-Eyed Susan (*Rudbeckia hirta*)
8. Blue Sage (*Salvia sylvestris* 'Caradonna')
9. Blue Hyssop (*Hyssopus officinalis*)
10. Coronado Hyssop (*Agastache aurantiaca*)
11. Creeping Oregon Grape (*Mahonia repens*)
12. Double Bubble Min (*Agastache cana*)
13. Firewheel (*Gallardia aristata*)
14. Hairy Golden Aster (*Heterotheca villosa*)
15. Mexican Hat (*Ratibida columnifera*)
16. Pineleaf Penstemon (*Penstemon pinifolius*)
17. Purple Coneflower (*Echinacea purpurea*)
18. Prairie Wine Cups (*Callitriche involucrata*)
19. Red Salvia (*Salvia greggii* 'Furnan's Red')
20. Sulfur Flower (*Eriogonum umbellatum* 'Kannah Creek')
21. Threadleaf Coreopsis (*Coreopsis verticillata* 'Zagreb')

Evaluations

Teacher/Parent Evaluation Summary

(original evaluations are stored at PEEC;
contact educator@peecnature.org to see them)

DATE	GRADE	HOW SATISFIED (1-5)	COMMENTS
2/1/18	8	5	Students enjoyed the labs and were engaged. They were able to apply what they learned and also gained lots of new information. Would love to know about life science lessons for 7th grade.
2/13/18	4	5	Energy-how it changes chemical, heat, movement, sound . Visual - age appropriate and interesting opportunities for student to move and collaborate and share.(To internalized information.) Lots of student discussions about changes in energy. Awesome 4th grade lesson!! I like how you pull potential (stored) energy and kinetic (motion) energy into the lesson.
2/20/18	3	5	I observed my class being engaged working together, and feeling empowered to solve problems and draw conclusions. They seemed comfortable and supported enough to try trial and error. Thank you so, so much for meeting their socio-emotional, academic and curiosity needs. Adjusting the centers to fit the set up of our classroom made the lesson flow and limited the potential disruptions. Thank you for getting a quick sense of what helps this group thrive.
2/20/18	4	5	Great opportunity for students to visualize how water is used. Will help them understand the need for conservation. All of the terms used in your diagram are excellent for student recall. Transpiration and infiltration are terms students need to know. They are not as familiar with them. Thank you for including them. Great student engagement. Awesome game.

2/22/18	3	4	Great questioning to increase engagement. Everyone felt validated and had a chance to participate. They liked going outside and learning more about our own backyard.
3/8/18	5	5	Students asking great questions. How did the rocks get there? Is there any soil in the aquifer? Where there big rocks in the aquifer? How did the gravel build up? How did the water get in there? Where is it from? Ideas of how to get the water out before you wet done giving instructions. I predict.....Girls who had been to EYH were excited to do this activity again. Siobhan did a great job of keeping the students engaged and calling up prior knowledge. Her own knowledge was evident when she was able to validate the students' work by telling them that industry uses machines similar to some of their ideas for extracting water or oil from the earth
3/15/18	5	5	Students really enjoyed this lesson. There was a lot of text to self discussion as they talked about cliff dwellings and the ones they had seen in person. Great opportunity to apply science lessons about earth tilt, sunlight and the seasons taught in the classroom and connections made to lessons learned on or PEEC Planetarium visit. Students loved the hands-on activity of building the solar house. The cooperative learning aspect was great as kids collaborated to design and build the best house.
2/12&13	3	5	Students work in groups to make their own discoveries on magnets. Students inquiry and hands-on exploration. Student's conversations discussing their ideas and thoughts. The kids love the PEEC lessons and hands-on activities.
2/12&13	3	5	Students making observations and classified types of leaves. Scientific drawings and making scientific reasoning/conclusions. Identified leaves outdoors. The students enjoy the visuals and applying their learning

			in the outdoors.
4/16/18	4	5	After the water festival students were much more aware of water conservation! The waste water handling was fascinating for the kids. Mr. Mosely is a favorite, even if we didn't get to go outside!! He pulled in some history that they liked! Plus how water gets to Los Alamos--great! As always, thank you for your hard work (and the teacher lunches!).
4/17/18	4	5	They seemed very engaged. It was hard to get them to end and move on to the next session.
4/6/18	4	5	Lesson time vs. hands-on time was good. I have not been to the water festival before. Excellent job!
4/5/18	3	5	Students noticed that changing connection wires (+/-) made the compass change directions. Asking each other about the parts of a motor. Lots of "experimenting and showing each other. Great set of stations for rotating. Great follow-up explanation.
4/12/18	8	5	Students were engaged.
2/28/18	3	5	Students were working together to explore magnets and motors and discussing how that relates to electricity.
4/22/18	3	5	Great job on noticing and calling on all students, especially girls. Great adapting to outdoor finds like the ant hill.
4/18/18	3	5	Students were discussing adaptations plants use to live in our climate. Students were out observing in the real world.
4/13/18	4	5	Kids were excited about the activities and learning new information. One of my students even asked one of the presenters for her notes! A big THANK YOU to everyone who had a hand in making the Water Festival possible! :) Love the water color and all the different stations for surface tension! I prefer the new closing project as well. Much more engaging.

4/13/18	4	5	The students were very engaged! They moved smoothly from one station to the next. You adjusted very well to the bad weather!
4/13/18	4	5	My students were very engaged all day! Students participated in every lesson actively. Students hypothesized and verbalized their observations. Students were sad to not go to every station.
4/6/18	4	5	My students were using vocabulary that was taught before attending. Questions were very insightful from students
4/6/18	4	4	We will see more of the impact once we are back at school later this week.
4/6/18	4	4	Students were using learned vocabulary. Their engagement level was high. They were listening and making eye contact. Well organized! Always wonderful. Thanks so much. Beneficial to kids. Love the movement and free lunch.
4/6/18	4	5	This is an excellent program. Thank you!
4/6/18	4	4	Students seemed to gain a better understanding of water tables (based on their observations, questions, and discussion answers). They enjoyed the water experiments with the tablets but didn't seem to fully comprehend the results (acidic vs. basic, etc.). I would like to know the activities in advance so I can build necessary background information. Overall it was really fun! Thank you!
4/4/18	6	5	Students were excited about the space in between the rocks. They found it interesting trying to figure out how to get pollution out of the auqifer. Ms. Niklasson was amazing with the students and kept them very engaged. Loved the lesson!

Feedback from Electric Vehicle Show participants:

<https://www.surveymonkey.com/results/SM-HQBTH5YSL/>

What worked? What didn't work?

- It was nice to be located right next to the solar charged battery. As someone who was setting up a stand without an electronic vehicle, I felt a bit rushed to move my car while unloading. Overall the event was great!
- Organization was terrific, steady stream of interested residents, shade tent for bikes was much appreciated!
- The whole thing worked. Great turn out
- The placards were a great idea, and I liked how you had a dedicated test drive area. This was the best EV show I've been in, I don't have any opinions on what could be better!
- It was good when they set up the shade for the e-bikes, since the batteries are exposed directly to the sun. But then we were all a bit crowded. A little more space under the shade would be good.
- The overall setup worked well. Some important EVs, PHEVs were missing. I would be willing to help solicit new showings in a follow up event.
- I wish we had had the turnout of Earth Day, but we didn't. We did have interest in the e-bikes, though, and part of that may have been the differing models. People could really do a little comparison between the bikes.
- I wondered if we'd get many people with ScienceFest going on at the same time, but the car show had a lot of publicity and I thought we got very good attendance. I'm curious how well the test drives went. I didn't get a chance to get up there and even see what they had available. The ice cream booth was much appreciated. It was hot! It was great having the wide range of vehicles. I liked looking at everything, the bikes, motorcycles, and cars of all sizes and types, and talking with all the owners and comparing notes.
- Nice venue, plenty of space for people to get into cars, I wouldn't change anything.
- Everything seemed fine. Better than expected and very well organized.
- Well organized. I had a place to exhibit my vehicle.
- It would have been nice to have more dealer participation, especially tents. It was hot out there!
- It was a little hectic with having it the same time as ScienceFest, but I also think that is what made it work.
- Great variety of vehicles. More shade would have been nice.
- I think it was well organized and well publicized and the posters and handout materials were excellent.

Any other comments or suggestions for the organizers?

- It was a great show. Thanks for inviting us to vend.
- Well done! Great to see this sort of sustainability event in Los Alamos. Perhaps make it even more visible next year by moving it downtown (library or Justice Center parking lot?)... Overall, terrific!
- I thought it was really cool to be next to the tiny VW Bus guy, his car was a great way to explain to people how my Tesla works, since everything's out in the open in his bus. He was a really cool dude, too :) The Positive Energy solar trailer was only used by the ice cream freezer by the co-op. It would have been a neat message if someone had been able to plug their car into it too, even if the truck isn't outputting much electricity. Also it would have been cool to have cars plugged into the Nature Center's charging station. I got a ton of questions about where I could charge, and it would have been neat to point to somebody actively using it.
- An additional educational component would be good. Maybe there could be a couple of guided walk-throughs that point out representatives of the different technologies and highlight their features. About half of the people that showed up at my plug-in hybrid did not understand what it was.
- I thought there was a great selection of cars also. Good opportunity for people to see the variety of vehicles on the market.
- Nice job!
- There didn't seem to be much interest in test driving most of the cars in the distaff lot. Not sure why, though the reps mostly hid out somewhere...
- Thanks. I think it's important to get the word out about electric vehicles.
- Keep doing this. It would be great if the dealerships would take it more seriously and really have a big showing. This is the future after all :)
- Good job to PEEC organizers and staff.