

NOVEMBER / DECEMBER 2021

CREATING A RESILIENT AND SUSTAINABLE FUTURE

# GREEN FIRE TIMES

*News & Views from the Sustainable Southwest*



INVESTING IN A CLEAN ENERGY ECONOMY

A NEW PARADIGM FOR WATER CONSERVATION

VOLUME 13 NUMBER 6

GREENFIRETIMES.COM

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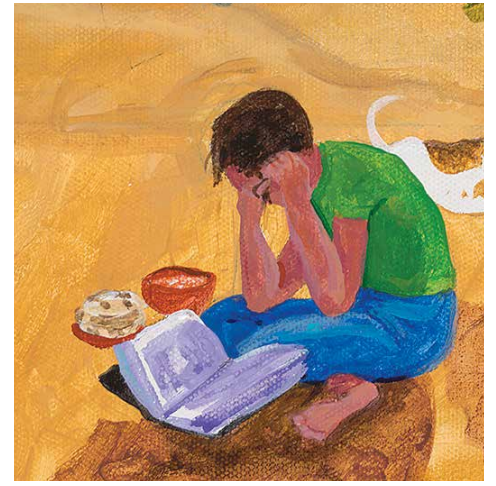
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505-989-8898, P.O. BOX 8627, SANTA FE, NM 87504-8627  
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**COVER** "QUERENCIA Y PROGRESO = PROSPERIDAD PA' TODOS"  
BY ANITA RODRÍGUEZ.

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THE IMAGE PORTRAYS THE FUTURE THE ARTIST ENVISIONS FOR HER BELOVED HOME TOWN, TAOS. SHE SAYS, "BEFORE WE CAN CREATE A NEW AND BETTER PARADIGM FOR OUR IMPERILED WORLD, WE HAVE TO ENVISION IT—THE JOB OF ARTISTS. 'QUERENCIA' MEANS LOVE OF LAND, CULTURE AND PLACE, NONE OF WHICH HAVE TO BE SACRIFICED FOR PROGRESS. THE GESTURE OF A MAN FROM TAOS PUEBLO IN THE CENTER FOREGROUND SYMBOLIZES COMMUNICATION WITH AND RESPECT FOR NATURE, WHILE BEHIND HIM ARE AGRICULTURAL PROSPERITY AND EARTH-FRIENDLY SOURCES OF ENERGY. PEOPLE OF ALL RACES, REFLECTING TAOS'S DIVERSITY, RELATE TO EACH OTHER IN THIS PAINTING WITH LOVE, MODELING A HEALTHY COMMUNITY WITH HISTORICAL AND CULTURAL CONTINUITY." SEE "LA COALICIÓN DE TAOS" ON PAGE 17.



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## OUR PATH TO A RESILIENT AND SUSTAINABLE FUTURE

BY **KATHERINE MORTIMER**

As 2021 draws to a close, *Green Fire Times* focuses this edition on how we can work together to overcome obstacles and create the systems or “infrastructure” needed to achieve a resilient and sustainable future. Northern New Mexico communities have been attempting to stem the potentially catastrophic effects of climate change for many years. We have created plans, policies and programs aimed at resiliency and sustainability, yet real progress is not happening fast enough to ensure a stable future. What are the obstacles standing in our way?

**Short-term self-interests:** The for-profit business model disincentivizes anything that cuts into its bottom line. This includes anything that adds costs, even when they are investments in a sustainable future and even if, in the long-term, they would increase profits or prevent losses resulting from climate change. The short-term, business-as-usual approach is incentivized by stock values and returns for investors, immediate compensation for company employees and executive bonuses.

**Inertia:** Large organizations tend to change slowly. Reluctance to change can be exacerbated when coupled with the attitude of “we’ve always done it this way” and “it was good enough for my parents and grandparents so it’s good enough for me.” This is often bolstered by a belief that things were better when we were kids, true or not. It certainly wasn’t true for people who have been held back by biases of race, gender, sexual preference, identity, etc.

**Other Crises:** The economic downturn in 2009, which had a slow recovery in New Mexico, followed by the COVID-19 outbreak and overlain by a polarized political environment, has taken attention and resources away from addressing other priorities such as lasting climate change reduction and other sustainability and resiliency goals.

As the conditions and outlook for businesses and organizations evolve, they expect investments to stay competitive and meet the evolving needs of clients, customers and constituents. Increasing the resiliency of an organization is a strong motivation to make changes and investments that also have social or environmental benefits. Climate change is a threat to the resiliency of the world and every business, organization and government in it. So how can we create a broader understanding of the risks of not making the changes needed, what those changes are, and how organizations and individuals can align their efforts?

Infrastructure is defined as the basic physical and organizational structures and facilities needed for the operation of a society or enterprise. A community needs infrastructure such as a water supply, wastewater treatment, roads, electricity, educational institutions, etc. To develop a winning sports team, you need talented players and coaches, facilities, equipment and an environment that brings out the best in everyone involved. To create a great meal you need quality ingredients, tools, equipment, stove, refrigeration, etc. To increase sustainability and resiliency, the “infrastructure” needed includes adapting some of our traditional infrastructure, such as buildings that are less impactful, which is explored in Edward Mazria’s article, *If We Act Now, We Change the World*, in this issue.

But it also includes things that are not normally considered infrastructure, like a common understanding of the challenge, a common trust in the science and solutions, leaders in every industry to identify and press for changes needed in their areas



*Sustainability crosses many disciplines.  
Ecosphere from Mark Yuschak, Kean University*

victory gardens during World War II, or collectively taking precautions to stem the advancement of a pandemic.

One challenge to activating the human potential available is that many people are in survival mode and must focus their energies, talents and time to ensure basic needs of themselves and their families. This is the case for about 40 million people in the U.S., or about 1 in 8, who live below the poverty line. Working to achieve long-term survivability for the human race is a luxury they mostly can't afford. The concept of *querencia* is a New Mexico-borne idea that the love of place can bridge disparate groups of people and develop ideas and actions that are culturally relevant and community-led. Place-based actions that emerge using a *querencia* lens are described in several articles in this issue including *How to Make Senior Capstones Truly Anti-Racist*; *Reese Baker Envisions Santa Fe as a Model for Large-Scale Water Conservation*; Jack Loeffler's *Sustainability and the Necessity for Partial De-Centralization*; and *La Coalición do Taos*.

Addressing poverty is also part of the needed infrastructure. Just like recycling drew attention to resources we were literally throwing away, we are currently allowing poverty and biases to squander precious human resources.

So, how do we create the conditions necessary in New Mexico to advance sustainability and resiliency, especially in the face of the climate crisis? I believe one key component is communication infrastructure. New Mexico's internet access is rated #43 among the 50 states, with an average rate of 30.0 Mbps accessible to 80.3 percent of the population.[i] The challenge to connect all of the state to the internet and ensure that those who want it can afford a computer is huge. However, this is infrastructure that will bring educational resources, jobs and economic activity to people who currently aren't connected.

Vehicle recharging stations throughout the state would create the infrastructure to facilitate residents and visitors moving to electric cars. Electric cars have a lower total cost of ownership. However, the cost to buy one can be a barrier, so programs to assist people to make that transition would hugely benefit individuals and the community by helping to reduce greenhouse gas emissions.

New Mexico is in a unique position to be a provider of clean electricity, given the state's solar and wind energy potential. However, we are lacking the infrastructure needed to transmit that electricity to where it will be most needed. The cost of that infrastructure is substantial, but the transition from fossil fuels will allow New Mexico

of expertise, and a shared nationwide vision of what needs to be done and how to do it. The challenge is so enormous it will take a lot of people with a wide range of expertise, all pulling in the same direction and taking leadership. To actively be a part of the solution, we also need as many people as possible by contributing "human resources" to the challenge, like the

to become an exporter of clean energy and replace income the state currently gets from oil and gas as those sources become obsolete.

Climate change predictions show greater drought potential in New Mexico as well as in places that have not experienced drought before. New Mexico is a leader in water conservation, but as we move forward, conservation alone will not be enough. Technologies are emerging to safely and affordably clean wastewater for re-use. New Mexico would benefit from incentivizing development of such technology and reducing barriers to widely deploying it. Without such technology, the limits of growth will be limited in arid states. So the development community could become a strong ally in incentivizing use of that technology.

Political capital is as important to creating the infrastructure needed as financial capital. By achieving a shared vision, we can all make our desires known to our state and federal representatives. New Mexicans best understand what needs to happen to secure our communities from the worst effects of climate change, to be more resilient and to reduce the overall impacts. Please join me in making our voices heard.



*Katherine Mortimer is the founder and principal of Pax Consulting, LLC, a New Mexico business providing government and businesses with tools they need to achieve the interconnected pillars of sustainability: environmental stewardship, economic vitality, and most importantly, social justice. [KAT@PAXCONSULTING.BIZ](mailto:KAT@PAXCONSULTING.BIZ), [WWW.PAXCONSULTING.ORG](http://WWW.PAXCONSULTING.ORG)*



*San Ildefonso Pueblo elder Kathy Sanchez (r) of Teva Women United, spoke at Renewable Energy Day in the New Mexico Capitol, in front of a mural entitled "We Are All in the Same Boat" by Bobbe Besold and children's artwork. 2020*

## **CREATING MORE RESILIENT, GREEN, SMART AND INCLUSIVE CITIES**

As local governments work to build healthy, prosperous communities where all residents can thrive, sustainability is a growing priority. Addressing climate change, inequality, aging infrastructure, and establishing a viable economy requires innovation, collaboration and careful planning. By incorporating sustainability principles, a community can identify best practices, and design and implement solutions.

LEED stands for Leadership in Energy and Environmental Design. LEED for Cities is the leading global rating system and certification program for local governments committed to measuring and managing community-wide sustainability and quality of life. Hundreds of stakeholders and partners contributed to the development and evolution of LEED's rating systems and programs since 2007. LEED for Cities can support and enhance local planning efforts in establishing a framework, integrating equity, or setting benchmarks and measure progress in improving economic, environmental and social performance. The standards and strategies can be adapted to support all types of plans. LEED for Cities tracks and scores performance in nine categories: Integrative Process, Natural Systems and Ecology, Transportation and Land Use, Water Efficiency, Energy and Greenhouse Gas Emissions, Materials and Resources, Quality of Life, Innovation, and Regional Priority.



The City of Santa Fe has found the LEED for Cities framework to be a valuable tool in its pursuit of its sustainability goals. In 2018, the city published the *Sustainable Santa Fe 25-Year Plan*, which envisions “a thriving community where climate impacts are neutralized, natural resources are abundant and clean, and sustainable economic activity

is generated through enhancing social equity and the regenerative capacity of the environment.”

The Sustainable Santa Fe Commission built out this mission statement into four core themes that align strongly with the LEED for Cities framework: carbon neutrality, ecological resilience, economic vitality and quality of life and social equity. The SSF Plan is also guided by a triple-bottom-line framework and aspires toward carbon neutrality. The plan also prioritizes forward-looking investments such as community health and education.

Given the city's commitment, certifying with LEED for Cities was a natural step in Santa Fe's sustainability journey. Local leaders found that certification provides transparent ways for community members to measure the city's progress in quality of life or water efficiency. In May 2020, Santa Fe was awarded LEED Gold Certification. The progress that sustainability and planning staff continue to make will be reflected when the city seeks recertification in 2025. To learn more about the rating system and certification program, visit [HTTPS://WWW.USGBC.ORG/LEED/RATING-SYSTEMS/LEED-FOR-CITIES](https://www.usgbc.org/leed/rating-systems/leed-for-cities).

## **IF WE ACT TOGETHER NOW, WE CHANGE THE WORLD**

*A response to the Intergovernmental Panel  
on Climate Change's 6<sup>th</sup> Assessment Report*

BY **EDWARD MAZRIA**

Architecture 2030 is calling on *all* architects, planners, engineers and those responsible for designing and constructing the built environment worldwide, to design all new buildings, renovations, landscapes, cityscapes and infrastructure to be zero-carbon beginning right now. If we act together today, we prevent the worst effects of climate change. Our calling is, and has always been, to make the world a better place. Now we get the chance to do it on a global scale and help protect life on the planet.

Almost 15 years ago, in 2007, I was sitting next to Dr. James Hansen at the Architecture 2030 Global Emergency Teach-in and asked him, “When will we begin to see the actual effects of global warming?” He leaned over and whispered, “At about 1°C warming.” Today, I checked NASA's “Vital Signs of the Planet” website and, sure enough, the planet is currently at 1.02°C warming above pre-industrial levels.

As I write this, the IPCC recently released an alarming report on the state of the climate crisis, and brutal heat waves, droughts, deadly flooding and fires are shattering records all over the planet and ravaging Europe, North America, China and India—the regions currently responsible for 58 percent of global CO<sub>2</sub> emissions. These events have driven home two essential facts: we're all in this together and must all act quickly and boldly. The time for half-measures and outdated timelines is over if we are to prevent irreparable destruction of our cities, towns and natural environments.

As architects and design professionals, we have a unique and critically important role to play. Buildings alone account for about 40 percent of total annual global CO<sub>2</sub> emissions, and with building interiors, sitework, landscapes, cityscapes and infrastructure, that percentage is much, much greater. If the world is to meet the 1.5°C carbon budget set out in the Paris Agreement, our community must provide the leadership necessary and reduce CO<sub>2</sub> emissions in the entire built environment by 65 percent by 2030 and to zero by 2040.

We directly shape and influence the built environment worldwide and are the one industry across all political and geographic boundaries with the design and planning freedom to affect global emissions immediately. In other words, we can decide to design and build to zero carbon today. How difficult is it to design to zero carbon? Not difficult at all.

### **ZERO Carbon in Three Steps**

#### **1) Design to the Latest Code Standards**

Design all new buildings, major renovations and developments to the most current energy code standards—ASHRAE 90.1 2019 and IECC 2021, their equivalent, or better. In other words, *design energy-efficient buildings that use little energy to operate.*

Local building energy codes only set *minimum* energy-efficiency requirements and do not prevent architects, engineers and building sector professionals from designing to the most current code standards or producing energy-efficient buildings.

*Buildings alone account for about 40 percent  
of total annual global CO<sub>2</sub> emissions.*

Designing to current standards has several advantages: They are evaluated to be cost effective, reduce occupant energy burdens, and include ready-to-use energy modeling compliance tools, checklists and trade-off options such as COMcheck and REScheck. In the developing world, free EDGE software can be used to design energy-efficient commercial or residential buildings in over 160 countries. EDGE will pinpoint least-cost options, calculate utility savings, payback periods and a building's carbon footprint.

## 2) Design All-Electric + Renewables

Design all new buildings, major renovations and developments to use *no* on-site fossil fuels—no gas, oil, or propane—and to be 100 percent powered by on-site and/or new off-site renewable energy.

*The architecture, planning, engineering and building community has an extraordinary opportunity to lead efforts to solve the climate crisis.*

Burning fossil fuels directly in buildings accounts for about 5.4 percent of total worldwide greenhouse gas emissions, and burning gas, oil and propane in buildings accounts for 35 percent of all U.S. building sector CO<sub>2</sub> emissions. To meet the 1.5°C carbon budget, buildings must be designed all-electric, with the electricity supplied by on-site and/or new off-site renewable energy (see the Zero Code and 2021 IECC Zero Code Appendix). The health, economic and environmental benefits of all-electric buildings are well documented. This will also further lay the groundwork for new renewables to decarbonize the power sector and, in turn, the existing building sector.

## 3) Zero Out Embodied Carbon

While steps #1 and #2 will produce zero-carbon building operations, it is also critical that we confront the embodied carbon of construction and building materials if we hope to phase out CO<sub>2</sub> emissions by the year 2040.

Architects, planners and designers can minimize the embodied carbon emissions from all new buildings, major renovations, infrastructure and construction by adopting the following:

**A. Reuse**—Repurpose and upgrade urban areas and renovate existing buildings instead of constructing new buildings whenever possible; use local and recycled materials when available; design buildings so that they can be deconstructed and their materials reused at the end of life.



**B. Reduce**—Infill and densify urban areas to utilize existing infrastructure; reduce material use by optimizing structural designs; specify low- to zero-carbon materials using comparative tools such as the Embodied Carbon in Construction Calculator (EC3), among many others.

**C. Sequester**—Use mass timber and glue/cross-laminated wood from existing sustainably managed forests; use bamboo structural members and panels where available; specify materials that sequester CO<sub>2</sub> in their manufacture or application; plan and design carbon-sequestering sites, parks and urban landscapes.



Bottom left: Edward Mazria was celebrated with a cover story in the May/June 2021 issue of Architect Magazine (photo by Robert E. Rosales). Mazria founded the Santa Fe-based Architecture 2030 in 2002. Its mission: “to rapidly transform the built environment from the major emitter of greenhouse gasses—to a central solution to the climate crisis.”

Twenty years ago, when I founded Architecture 2030 and issued the 2030 Challenge, achieving zero-carbon buildings seemed a far-off aspiration. Today, thanks to many years of creativity and ingenuity on the part of the global design and building community, we have the knowledge, standards, tools and technologies readily available to achieve zero-carbon buildings in all climates.

The global architecture, planning, engineering and building community has an extraordinary opportunity to lead efforts to solve the climate crisis. This is the ultimate design project; this is our legacy. ■

This letter originally appeared in Architect Magazine.

Edward Mazria FALA is founder and CEO of the Santa Fe-based nonprofit Architecture 2030 ([HTTPS://ARCHITECTURE2030.ORG](https://architecture2030.org)). He is an internationally recognized architect, author and educator. His decades of research into the sustainability, resilience, energy consumption and greenhouse gas emissions of the built environment has helped redefine the role of architecture, planning, design and building. Mazria was awarded the 2021 American Institute of Architects (AIA) Gold Medal for his “unwavering voice and leadership” in the fight against climate change.

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## **LEADING BUILDING INDUSTRY GROUPS COMMIT TO 1.5°C PARIS AGREEMENT TARGET**

In October, more than 60 member firms of the American Institute of Architects (AIA) Large Firm Roundtable, along with two dozen organizations representing over one million building industry professionals worldwide, issued a communiqué to government leaders headed to the United Nations Climate Change Conference of the Parties (COP26). The 1.5°C COP26 Communiqué was an open letter demonstrating the firms' and organizations' commitment to meet the Paris Agreement's 1.5°C carbon budget and demanding governments do the same.

The independent, Santa Fe, N.M.-based, non-profit, Architecture 2030, spearheaded this unprecedented joint initiative by inviting select firms and professional organizations to reach a collective commitment to decarbonize the built world by 2040.

The AIA Roundtable members are among the largest and most influential international architecture, landscape architecture, engineering, planning and construction firms, collectively responsible for over \$300 billion in annual construction. Pamela Conrad, of the International Federation of Landscape Architects (IFLA), said, "This is aligned with the recently launched IFLA Climate Action Commitment that represents 77 nations around the world and shows the steps landscape architects are taking as global citizens to limit planetary warming to 1.5°C."

Other signatories included: Union Internationale des Architectes, comprised of professional organizations from 124 countries; American Planning Association; American Society of Heating, Refrigerating and Air Conditioning Engineers; Royal Institute of British Architects; China Engineering and Construction Association, Architecture Branch; U.S. Green Building Council; DGNB German Sustainable Building Council; Royal Architectural Institute of Canada; Australian Institute of Architects; and the Congress for New Urbanism.

## **NATIONAL ENERGY EFFICIENCY INITIATIVE**

### *Sustainable Education for Advanced Buildings*

An initiative aimed at lowering energy usage and utility bills across the U.S. called Sustainable Education for Advanced Building, is part of \$83 million the U.S. Department of Energy recently awarded for "improving energy-efficiency in residential and commercial buildings and incorporation of related technologies."

The New Mexico Department of Energy, Minerals and Natural Resources received \$750,000 of that amount, which it divided among four community colleges for new education and training programs that are to begin by the end of 2022.

Doña Ana Community College in Las Cruces is developing energy-efficiency courses for students and working professionals. The college's Architecture and Construction Technologies Department and Community Education and Customized Training will offer credit and non-credit options. In a statement, Chipper Moore, advanced technologies division dean said, "The goal is to better inform and educate students and industry professionals in best practices for energy-efficiency and energy-management design for existing buildings where applicable and for future building projects."

# NMED Budget Invests in Clean Energy Economy—and a Hydrogen Hub

## *Fossil-fueled Hydrogen a Climate Threat?*

BY **SETH ROFFMAN**

The New Mexico Environment Department (NMED) is requesting a budget increase of \$7.1 million for fiscal year 2023 to spur clean energy investments across the state. "Investing in climate solutions is investing in clean energy jobs," said Cabinet Secretary James Kenney. NMED's budget includes funding to decarbonize fuels used in the transportation sector. The department estimates that implementing a clean fuel standard will bring \$47 million in economic investments to the state annually while reducing carbon dioxide emissions by 6.8 million metric tons.

A NMED press release says, "The budget also includes funding to establish New Mexico as a world-class, clean hydrogen hub focusing on the production, consumption and export of hydrogen. In doing so, the state will seek its share of the \$8 billion proposed for clean hydrogen in the federal infrastructure bill and the estimated \$300 billion in clean hydrogen capital investments expected by 2030."

Manufacturers of large commercial trucks, planes and trains, as well as passenger vehicles, are beginning to embrace hydrogen fuel cell technologies. Hydrogen can also be used to manufacture steel and to generate heat. However, it is harder to transport by pipeline because it can make existing infrastructure brittle and prone to cracking. It can be stored for long periods of time and converted to electricity on demand but requires more storage space than fossil fuels.

## **San Juan County Touted as a Center for Hydrogen Production**

The \$8 billion proposal, which has bipartisan congressional support, would build four initial "hydrogen hubs" around the country as a key piece toward achieving the Biden-Harris administration's goal of net-zero carbon emissions economy-wide by 2050. When U.S. Secretary of Energy Jennifer Granholm met in New Mexico with San Juan County leaders in August, the administration's Infrastructure Investment and Jobs Act, which includes hydrogen research and development, was a major topic of discussion. Granholm also discussed the initiative with Gov. Michelle Lujan Grisham.

Farmington Mayor Nate Duckett told Granholm and U.S. Sen. Martin Heinrich that decades of energy development have created a skilled workforce and infrastructure that are ready for the challenge of hydrogen production. The county is looking to diversify in preparation for closure of two coal-fired power plants and the mines that feed them. The San Juan Basin has many abandoned oil and gas wells that need to be cleaned up. The Energy Transition Act promised that the region can become a renewable energy and storage hub. Solar production sites are not yet up and running because of manufacturing disruptions overseas.

Granholt and Heinrich toured PESCO Inc. in Farmington, where they saw modular reactor units the company is manufacturing in partnership with the Albuquerque-based company BayoTech. The mobile units produce hydrogen, ammonia and fertilizer. Andrew Leedom, Bio Tech's head of policy said, "Hydrogen is the clean fuel source for a decarbonized future and BayoTech is ready to supply it worldwide. We can make this state and the U.S. the center of the global hydrogen economy. BayoTech is working with San Juan College to build a local workforce."

## Hydrogen Hub Act

On Oct. 5, Gov. Lujan Grisham addressed the N.M. Oil and Gas Association, where she called hydrogen the "transitional fuel of the future" and urged the NMOGA to back the Hydrogen Hub Act, which she said would be "our signature piece of legislation" in the January 2022 legislative session. The Act would provide standards, regulations and a legal framework to incentivize public-private sector partnerships. It would also create "hydrogen highways," or corridors, to include fueling stations, vehicle service stations, servicing and possibly manufacturing operations to facilitate statewide hydrogen-based transportation.

While acknowledging that the oil and gas industry provides more than one-third of the state's \$7.4 billion budget, Lujan Grisham, who, in 2019 issued an executive order calling for the state to cut greenhouse gases by 45 percent by 2030, has pushed for stronger environmental rules and advocated for the state's transition to a renewable energy economy. At the NMOGA meeting, she suggested that the industry could play a key role in that transition with the emerging hydrogen industry. Already underway are projects to transform the closed coal-fired Escalante Generating Station near Grants into a hydrogen production and generating facility, and construction of another such facility in Farmington. A hydrogen hub has also been proposed for Lea County in the Permian Basin.

## Groups Call Fossil-Fueled Hydrogen a Climate Threat

Nearly all current hydrogen production involves an energy-intensive process fueled by methane and emits carbon dioxide. The fossil-fuel industry has been promoting unproven carbon capture projects using "blue" hydrogen. A recent peer-reviewed study in *Energy Science & Engineering* shows that blue hydrogen—the majority of hydrogen in use today—is worse for the climate than coal ([BIT.LY/307ZATS](https://bit.ly/307ZATS)). Creating "green" hydrogen by electrically separating hydrogen from water is expensive, requires huge amounts of fresh water, and produces nitrogen oxide (NOx), which, when combusted, generates much more emissions than methane. Still, some environmental groups see green hydrogen as a better choice. On Oct. 7, the U.S. Department of Energy (DOE) announced \$20 million in funding to demonstrate technology that will produce "clean hydrogen energy" from nuclear power.

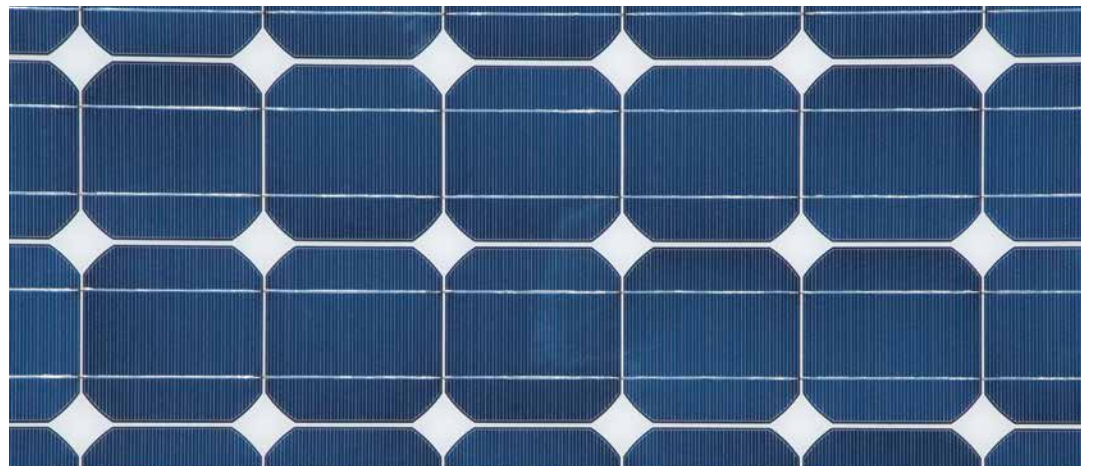
In October, a coalition of 30 New Mexico community and environmental organizations sent a letter to state and federal lawmakers, citing safeguards the groups think must be enacted before hydrogen projects are considered for the state. The letter says that hydrogen derived from fossil gas presents significant climate and health dangers, would drive new methane, carbon dioxide and other emissions, and would create a massive new market for fracked gas, just when climate scientists say it is urgent to dramatically scale back the use of fossil fuels. The groups also said that the focus on hydrogen could distract from expediting a transition to greener energy. ■

## USDA TO HELP FUND SOLAR AND ENERGY STORAGE PROJECTS IN NEW MEXICO

The U.S. Department of Agriculture plans to invest in renewable energy infrastructure across the country, including 11 solar array and energy storage projects in New Mexico. The projects include:

- \$8,800 to help McGinn Enterprises, Inc. in Alamogordo, purchase and install an 11.85-kilowatt solar array that is expected to generate 61 percent of the energy the business uses.
- The Toby Bell pistachio farm in Alamogordo will receive an \$11,028 REAP (Renewable Energy for America Program) grant to purchase a 14.72 (kW) array that will provide 150 percent of the electricity the business uses every year.
- Seddin Investments will receive two REAP grants of \$43,761 and \$83,737 for a solar array, energy-efficient heating, ventilation, air conditioning units, water heaters, insulation and cook stoves at a retreat in Angel Fire.
- A \$7,500 investment will help Denny's in Deming build a 236.9-kilowatt solar array.
- New Mexico Wineries, Inc. in Deming will receive \$154,314 to help install a 271.92-kilowatt array.
- Nichols Ranch in La Luz will receive a \$38,800 grant for a 30.38 kW solar array.
- Burnt Well Guest Ranch in Roswell will receive \$12,436 for a 15.68 kW array.
- Brown Rice Internet Inc., a Taos-based web hosting company, will receive \$19,982 for a 30-kW photovoltaic array/parking canopy. The system will generate 50,635 kW hours of electricity, which will supplement an existing 20-kW structure funded by a REAP grant in 2015.
- A REAP grant in the amount of \$3,667 will go to Taos Communications Corp. toward the purchase of a 16-kW energy storage battery system for KTAO-FM.
- Matthew Draper in Los Ranchos will receive a \$3,859 grant to install a 3.75 kW solar power array on his farm.

Applications for grants and/or loan/grants of \$20,000 or less are due by March 31, 2022. For information, visit: [HTTPS://WWW.RD.USDA.GOV/PROGRAMS-SERVICES/ENERGY-PROGRAMS](https://www.rd.usda.gov/programs-services/energy-programs)





# Citywide Solar Project Underway

## Project Advances “Sustainable Santa Fe” Goals

On Oct. 13, Santa Fe Mayor Alan Webber, City Councilors Carol Romero-Wirth and Signe Lindell, Public Works Director Regina Wheeler, Sustainability Program Officer Neal Denton, and representatives from Yearout Energy Services and Positive Energy Solar broke ground for the city’s solar project at the MRC Sports Complex Pump Station.

The project will add 2.75 (MW) of renewable energy to the city’s portfolio. Seventeen sites were selected for photovoltaic arrays, including seven city facilities, eight water utility facilities and two Buckman Direct Diversion facilities. The capacity of the arrays will offset 80 percent of electricity consumption at the city facilities and 60 percent at the water and BDD facilities.

The project’s other improvements will reduce energy and water consumption. They include retrofitting or replacing lighting fixtures with LEDs at 29 facilities; recommissioning and upgrading plumbing fixtures at 15 facilities; building envelope improvements, including sealing around windows and doors to improve comfort and efficiency; and replacing old transformers with high-efficiency models.

In total, the project is estimated to save more than \$750,000 per year in utility costs, with approximately \$500,000 of that resulting from solar. The water conservation measures are estimated to directly save over 2.2 million gallons a year. A reduction of more than 6,742,000 pounds per year of CO<sub>2</sub> emissions is projected, the equivalent of taking 588 vehicles off the road.

Mayor Webber said: “We are committed to 100 percent renewables by 2040. Our aim is to be the most sustainable city in America. The more we invest in that, the more we save. We’ve made a commitment to save energy, to produce renewable energy and to sustain our way of life.”

Regina Wheeler said: “With these arrays, the city will generate renewable energy at the point of use for less than it costs to buy from the grid. This project achieves a major milestone in the city’s strategy to solarize all facilities where it is economically and physically feasible. Next, the city is working to make community solar a reality by making renewable energy from large arrays available for purchase by the city as well as homeowners, schools and businesses.”



© Seth Roffman

Neal Denton said: “This project includes energy efficiency. Energy efficiency is the jelly to solar’s peanut butter—they both work on their own, but together they’re magic.”

## Sustainability Strategies

The city identified 91 strategies in the 2018 Sustainable Santa Fe 25-Year Plan to neutralize climate impacts, produce and preserve clean natural resources, generate economic activity and enhance social equity. Denton reported that 58 of those are underway or complete. Other recent examples of the city’s implementation of the plan include:

- Reducing the carbon footprint from streetlights by 60 percent by installing more efficient LED lights.
- The construction of a combined heat and power plant at the wastewater treatment facility that recycles waste gas into energy. When combined with the existing solar array, this facility is now almost 100 percent powered by renewable energy.
- Replacing 23 non-emergency fleet vehicles with electric vehicles. This will help cut greenhouse gas emissions, save taxpayer money and improve public health.
- Coordinating the launch of Solarize Santa Fe, a community solar purchasing initiative being offered to teachers and staff at the Santa Fe Public Schools this fall. The pilot program is designed to make solar power affordable and accessible regardless of income. ■

## SOLARIZE SANTA FE

Solarize Santa Fe is a bulk purchasing program designed to help homeowners of all income levels overcome financial barriers to solar installation and save money on energy bills. Basically, it’s a way of buying solar energy at wholesale prices. The more people who sign up, the more everyone saves. The pilot program is only available to 50 homeowners within city limits.

The City of Santa Fe is working with program partners, the Sierra Club, the Coalition of Sustainable Communities-N.M., Santa Fe Public Schools and Sol Luna Solar to package low-cost installations with low-interest loans. The Sierra Club brought in \$50,000 of private contributions to further lower the cost for income-qualified households. To gauge long-term interest and feasibility, the program is initially being marketed through Santa Fe Public Schools, whose workforce and demographic reflects the city.

Residents who sign up for Solarize Santa Fe will receive a free home energy audit from PNM and a solar assessment from Sol Luna Solar, a company the city selected through an RFP process. Sol Luna will prepare a proposal for the home, and after a contract is signed, take care of all permitting and connection requirements. Residents will also receive technical assistance from Neal Denton, the city’s sustainability program manager. Almost everyone who signs up will see no upfront costs. Many homeowners will have their solar panels paid off in less than 10 years. That means 15 to 20 years of free energy after those panels are paid off.

The initial four-month application period ends on Jan. 18, 2022. All of the installations will be completed by July. If this program is successful, the city hopes to institute a larger program later in 2022.

## DOE SETS 2025 COMMUNITY SOLAR TARGET TO POWER FIVE MILLION HOMES

Community solar projects are small arrays that provide electricity to subscribers, many of whom are unable to install rooftop solar. That includes renters, people who live in apartments and low-income households whose energy burden may be three times higher than non-low-income households. Subscribers receive a portion of the revenue from the energy produced, typically as savings on their monthly electric bill.

In October, the U.S. Department of Energy (DOE) announced a National Community Solar Partnership (NCSP) target: to enable community solar systems to power the equivalent of five million households by 2025, creating what the agency says would be \$1 billion in energy bill savings. Reaching these milestones would help achieve the Biden-Harris administration's goal of achieving 100 percent clean electricity by 2035.

“Community solar is one of the most powerful tools we have to provide affordable energy to all American households, regardless of whether they own a home or have a roof suitable for solar panels,” said Sec. Jennifer M. Granholm. “Achieving these ambitious targets will lead to meaningful energy cost savings, create jobs in these communities and make our clean energy transition more equitable.”

According to a DOE press release, there is enough solar installed to power 19 million households across the U.S. Despite this, many Americans still lack access to affordable solar electricity, including many renters, homeowners who lack financing options and those without suitable roofs.

There is enough community solar installed in the U.S. today to power 600,000 households. Achieving DOE's new NSCP target would mean an increase of more than 700 percent in the next four years. The recently released Solar Futures Study from DOE and National Renewable Energy Laboratory (NREL) shows how solar can play a major role in a decarbonized grid.

The NCSP is a DOE initiative led by the Solar Technologies Office, in collaboration with the NREL and Lawrence Berkeley Laboratory. The partnership includes a coalition of community solar stakeholders, such as state, local and tribal governments, solar developers and community-based organizations. Partners leverage peer networks as well as technical assistance funding and resources to overcome barriers to expanding community solar access, with a focus on underserved communities. As of September, NCSP had over 650 members from over 440 partner organizations.

The Sharing the Sun report (<https://www.nrel.gov/docs/fy21osti/80246.pdf>) released by NREL in collaboration with NCSP shows that community solar can lead to bill savings from 5 to 25 percent. Achieving \$1 billion in cost savings would mean that, on average, community solar projects would provide a 20 percent savings. This target, along with other potential solutions for equitable community solar deployment, was informed by NCSP stakeholders.

To achieve these targets, DOE is offering free, on-demand technical assistance to NCSP partnership members. Technical assistance provides personalized support to organizations deploying community solar to help them accelerate implementation, improve the performance of their program or project, and build capacity for future community solar development. NCSP said it has already distributed \$1 million for technical assistance and hopes to provide \$2 million in the next year. To learn more, visit [HTTPS://WWW.ENERGY.GOV/COMMUNITYSOLAR/ABOUT-NATIONAL-COMMUNITY-SOLAR-PARTNERSHIP](https://www.energy.gov/communitysolar/about-national-community-solar-partnership).

## DEVELOPERS, UTILITIES REACH AGREEMENT ON INTERCONNECTION APPLICATIONS

BY HANNAH GROVER, N.M. POLITICAL REPORT

While community solar interconnection applications cannot fully be processed until the New Mexico Public Regulation Commission adopts rules next spring, the three investor-owned utilities are now accepting applications from developers hoping to build a community solar array.

In June, the PRC ordered the utilities to provide notice to developers that stated the rules are not complete and the applications cannot be processed at this time. The utilities went further and added language stating that applications would not be accepted. The same language was also included in a notice posted on the PRC website.

But the Renewable Energy Industries Association (REIA) filed a complaint with the PRC alleging this violated both federal and commission rules and policies. REIA represents 24 solar developers and, in its complaint, it stated that the utilities not accepting the applications made it so those developers could not begin interconnection studies. REIA further argued that the Community Solar Act, which became law this year, does not require developers to apply as community solar facilities. Instead, they can apply for interconnection and later have the application for community solar status considered based on rules that the PRC has yet to adopt.

The investor-owned utilities reached an agreement with REIA in August to change the language in the notice and continue accepting applications. The new language states that: “No NMPRC community solar rules are currently in place. For this reason, utilities will not accept or record applications to become a community solar facility whose output the utility is legally obligated to acquire. It is also not known whether there will be NMPRC interconnection rules specific to community solar facilities.”

However, the notice also informs developers that the utilities are accepting interconnection applications “irrespective of any community solar program” and that acceptance of the application does not mean the project is eligible for the community solar program. Nor does filing such an application early provide any advantage to a developer in terms of consideration. “Customers applying for interconnection application prior to the promulgation of such rules bear the risk that the NMPRC's rules could render the facility ineligible for the community solar program; or require filing of a new interconnection application under the community solar rules to participate in the program,” the new notice states.

The PRC approved an order stating that REIA's complaint has been satisfied. At the same time, PRC counsel Russell Fisk said these applications cannot yet be approved by the utilities because the rules for community solar are not in place and applicants cannot anticipate exactly what the final rules and regulations will look like. The commission will issue the final rules by April 2022. One of the unanswered questions that the PRC will have to determine is how many megawatts of community solar capacity each of the investor-owned utilities can have within its service area.

# The South Central Climate Adaptation Center

BY CYNTHIA NAHA

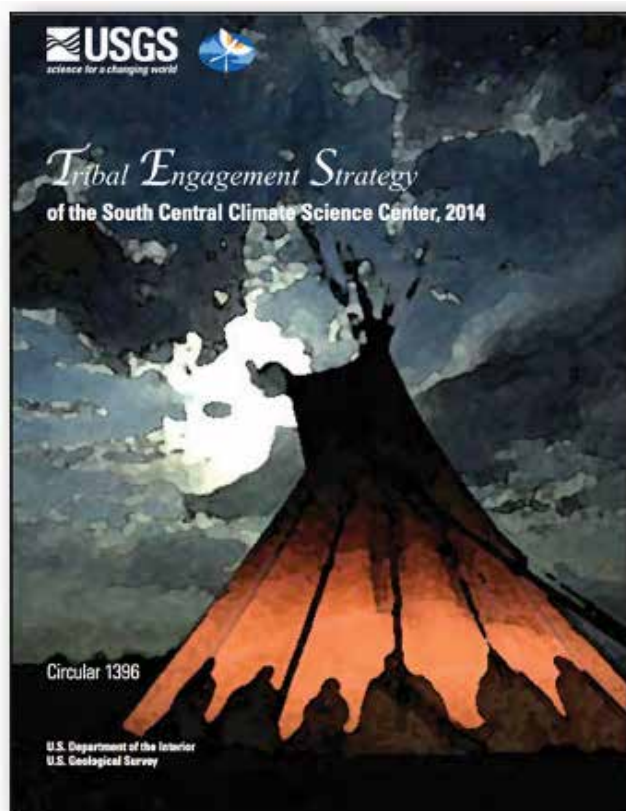


**SOUTH CENTRAL**  
CLIMATE ADAPTATION SCIENCE CENTER

The South Central Climate Adaptation Science Center was established in 2012 to provide decision-makers with the science, tools and information they need to address impacts of climate variability and change. The South Central CASC has been expanding how climate science is applied in the south-central United States. We support big thinking, including multi-institutional and stakeholder-driven approaches to assessing extreme impacts on natural and cultural resources. We develop strategies to minimize economic, sociological and ecological consequences.

*Tribal citizens and governments can lead climate adaptation initiatives.*

The organization's main office is in Norman, Okla. at the University of Oklahoma. The South Central CASC works across a region encompassing Oklahoma, Texas, New Mexico and Louisiana. It is organized under the U.S. Department of the Interior as part of a larger federal network of nine regional CASCs, all managed by the U.S. Geological Survey's (USGS) National Climate Adaptation Science Center (NCASC). The NCASC and the regional CASCs work with natural and cultural resource managers to gather information and build tools to help fish, wildlife and ecosystems adapt. Priority activities include measurement, modeling and decision support. Some of the data generated is used in publications. The broader South Central CASC includes a consortium of academic institutions across the region, including the University of New Mexico.



Many, if not all, Tribes have experienced climate change, and since time immemorial have been resilient. They have demonstrated adaptability, even those that were forcibly relocated to new territories and landscapes. The South Central CASC's region includes significant acreage owned by private and Tribal landowners. Tribal citizens and governments can lead climate adaptation initiatives. It is important to note that Tribes have a significant role in water management within the region due to Tribal treaty water rights.

The South Central CASC has a priority of working with Tribes. The organiza-

*"We, as tribal people, want research and scholarship that preserves, maintains and restores our traditions and cultural practices. We want to restore our homelands; revitalize our traditional religious practices; regain our health; and cultivate our economic, social and governing systems. Our research [and evaluation] can help us maintain our sovereignty and preserve our nationhood."*

– Cheryl Crazy Bull, 1997

tion's Tribal Engagement Strategy recognizes the 68 Tribal nations within the region and their diverse histories, cultures and governmental structures. Tribal engagement builds relationships and provides technical education for Tribal staff for vulnerability assessments and climate adaptation planning. The South Central CASC has two full-time Tribal liaisons and one assistant Tribal liaison, all of whom are Tribal members or citizens. Staff positions also include a Río Grande program manager, Bureau of Indian Affairs (BIA) Pathways interns and student interns.

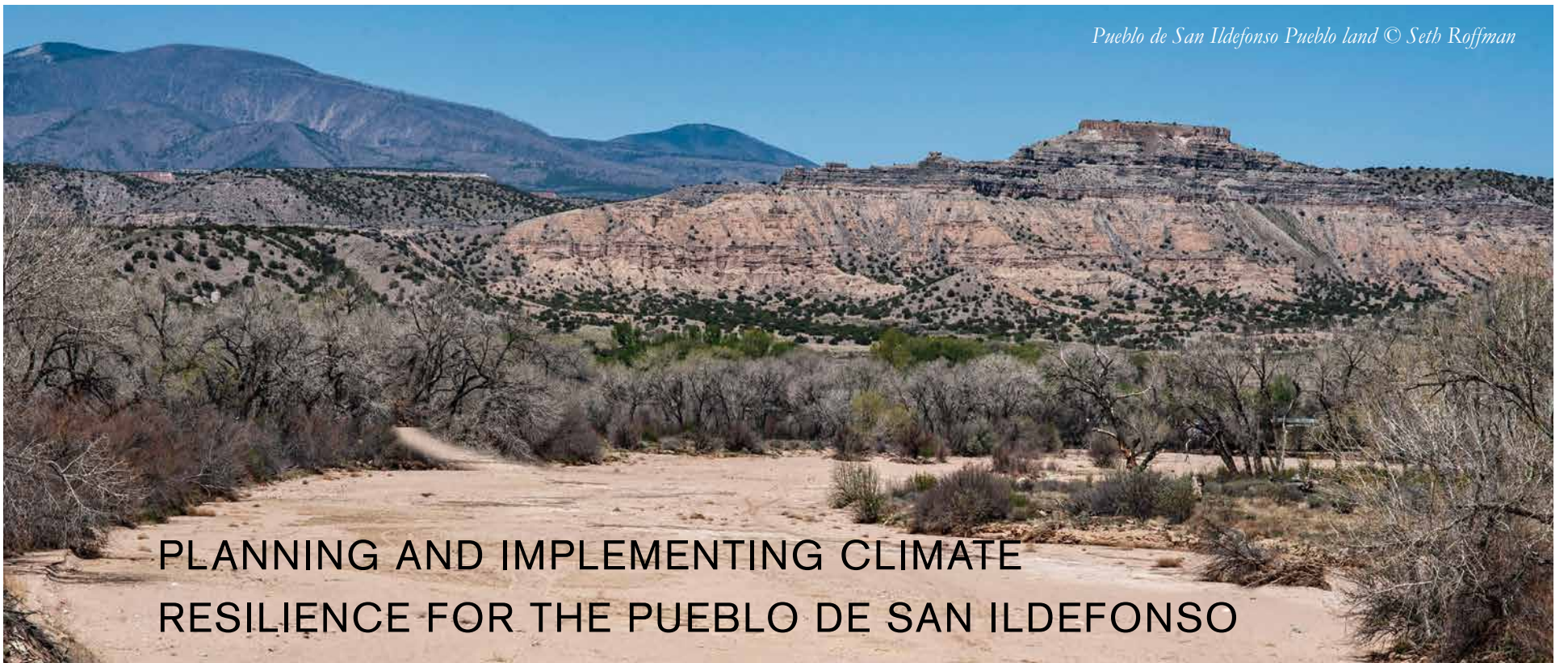
Workforce development is an essential part of the South Central CASC's approach. Tribal youth outreach programs promote Native scientists in climate-related fields. This outreach includes K-12 Native STEM (science, technology, engineering, and mathematics) activities at Tribal community events such as festivals, camps and after-school programs. Over nine years, the South Central CASC has hosted 43 Native undergraduate and graduate students.

South Central CASC's Tribal Liaisons build capacity for technical staff through training that develops a knowledge base for understanding climate change and how it is impacting communities and homelands. Working with Tribal staff, South Central CASC liaisons identify independent climate projects and integrate climate science into adaptation plans. Since 2012, liaisons have provided 58 trainings, with a total of 1,211 attendees from 153 Tribes. They also help researchers better understand the ethics of working with Tribes and how to foster respectful relationships.

As we continue to experience climate change and its associated extreme events, it is important to ensure that you, your family, your community, Tribe, Pueblo and homeland are prepared. By identifying vulnerabilities and opportunities, people can discuss how to address them. The South Central CASC is there to assist with adaptation and build resilience in your location. For more information, please visit our website: [HTTPS://SOUTHCENTRALCLIMATE.ORG/native-nations/](https://southcentralclimate.org/native-nations/). ■



*Cynthia Naha (Hopi-Tewa- Ihanktowan Dakota Oyate) is South Central CASC's N.M. Tribal liaison & science communications specialist, based at UNM. Previously, she was the Natural Resources Department Director for Santo Domingo Pueblo and U.S. EPA Region 6 Tribal representative on the E-Enterprise for the Environment Leadership Council. [CYNTHIANAHA@OU.EDU](mailto:CYNTHIANAHA@OU.EDU)*



# PLANNING AND IMPLEMENTING CLIMATE RESILIENCE FOR THE PUEBLO DE SAN ILDEFONSO

BY **RAYMOND MARTINEZ, MICHAEL CHACON, TIM MARTINEZ, KAYLENE RITTER, HEATHER HOSTERMAN AND OLIVIA GRIOT**

Concern about climate change led the Pueblo de San Ildefonso to undertake a climate planning process which aims to ensure that the pueblo's culture and traditions thrive for future generations.

Climate change affects Pueblo life, including traditional uses of water, birds, animals, plants, wood, clay, deer, rabbit, turkey and elk; as well as the spiritual well-being of our pueblo. There are also human impacts due to the proximity of Los Alamos National Laboratory (LANL), which has left a legacy of contaminants in the local environment. Wildfires, rainfall and flooding increase the risk of exposure to these contaminants on the pueblo.

*Na' inbe wo'wabaa'tsi din' pidin'an, Nain'be towa kuu gin, Gin'kon ma'a gin te'e, paa, puu, pindee, daa, p'oe tsideb'e, Tsee'nee'ay, son, pi'in nan. Nang inbin wo'watsi nacha'muu. Los Alamos National Laboratory nako ho' pin k'evah bugeh. Wen p'oe de yoe'an Na' oepaa p'in k'e web. Na'e pin'paa,*

*The community vision integrates four aspects of Pueblo life with broad cross-cutting themes.*

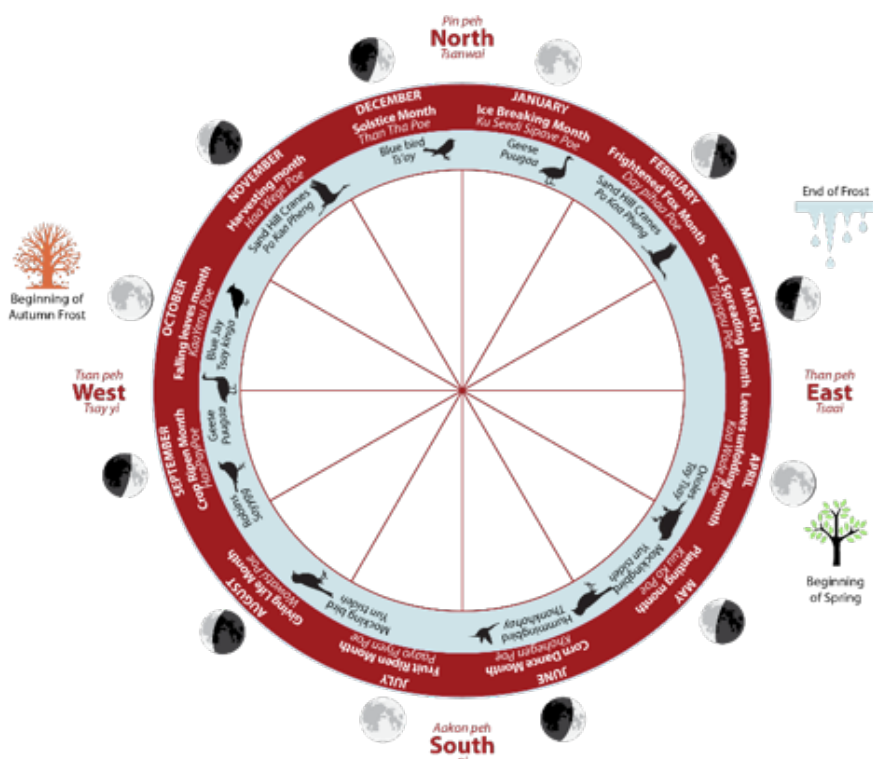
*kwan, kwan po. Na'e pin'paa(eeyaa) e'haa'ho, p'oe a sumva de'. Ba'ge na'inbe towa de'haybo.*

Through a series of workshops, different groups within the community—including elders, youth, resources managers, and the Tribal Council—identified key aspects of Pueblo life that are critical to preserve and protect, and developed a vision for the community. This community vision integrates four aspects of Pueblo life (the four quadrants)—traditional activities, traditional places, community health, and infrastructure and governance—with broad cross-cutting themes that overlap—traditional knowledge, language, income, spiritual health, water and food sovereignty (the outer circle). San Ildefonso's Department of Environmental and Cultural Preservation (DECP) then assessed the vulnerability of each aspect of the community vision and identified adaptation actions that could reduce vulnerability to climate change.

*THAA'EGO- Na'inbe Owinge, Kweeyoe, Saydoe, Ayyaa, beda in Than'the'kiieeqy, na'inbe un'sbaa. Wow'a'tsi nacha'muu. Na'inbe Nava ay e'bee ami. Nain'be towa kuu, Nain'be Nan ochu kviyo, K'uu kwa'yeh, Na'inbe Owinge Ge'hay puvi pidi'ee, badaa in' Menekana be'kuu, Na'in PO'WHO GEH OWINGE be K'uu, un'sbaa de ta'nannmidi.'*

Through climate planning community workshops and follow-up webinars, the pueblo developed a climate action plan and story map highlighting climate hazards, the pueblo's climate risk and vulnerabilities, and proposed actions to address in adapting to climate change. The Climate Action Plan is a living document that the pueblo is continuing to revise as new information becomes available.

Using the plan, the pueblo has begun implementing adaptation. Currently, four resilience actions are underway or have been completed in conjunction with DECP:





*The pueblo has begun implementing its Climate Action Plan.*

**Evaluation of the Health Effects of Climate Change and Contaminant Exposure:** This study of health effects from heat and wildfire found that the severity of climate-related health impacts could be 90 times worse for the Pueblo by 2050 and nearly 300 times worse by 2090, compared to current conditions, and showed that extreme climate events may result in increased risk of exposure to contaminants.

**Wildfire Landscape Management Practices:** Wildfires can burn important cultural sites and result in flooding and erosion, which expose Pueblo members to contaminated soils and sediments that are transported from the nearby LANL property. Working closely with members of the pueblo and other partners, this project will develop a plan that focuses on which landscape management practices can best protect the Pueblo against wildfire-related impacts.

**Supporting Traditional Agricultural Knowledge by Developing a Resilient Farm Plan:** Many Pueblo elders and cultural leaders retain traditional agricultural practices and knowledge that they learned as children, but this has not been documented for future generations. This project will document traditional agricultural knowledge and develop a Farm Plan to pass this knowledge from elders to Pueblo youth to help preserve important cultural traditions and strengthen resilience to climate impacts.

**Enhancing water retention and facilitating groundwater recharge to protect and maintain springs:** The pueblo is currently applying for funding to protect springs from drought to help sustain wildlife and native vegetation while also ensuring the Pueblo community can visit the springs for traditional and cultural practices. If funded, the project would restore areas directly surrounding springs on Pueblo lands and assess the need for actions to enhance or protect infiltration of precipitation and runoff in the recharge areas.

Along with these new projects, the pueblo and DECP are actively seeking funding for additional projects to implement climate resilience action. The Climate Action Plan and story map will be updated as new projects are implemented and can be viewed here: [HTTPS://ABTMEETINGS.COM/CLIMATECHANGEPLAN/INDEX.HTML](https://abtmeetings.com/climatechangeplan/index.html). ■

*Raymond Martinez is Department of Environmental and Cultural Preservation director and Tribal Risk Assessment program manager for the Pueblo de San Ildefonso. Michael Chacon, Tim Martinez and Kaylene Ritter are also with the DECP. Heather Hosterman and Olivia Griot are with ABT Associates.*



## Diné Communities Seek Justice

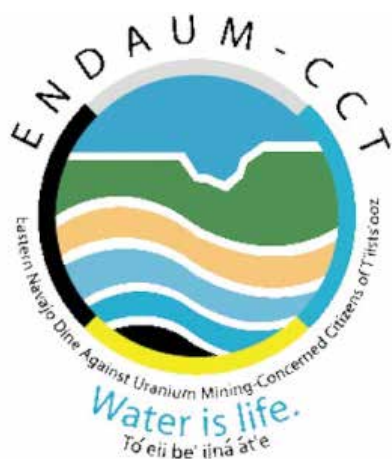
BY VALERIE RANGEL

Access to a clean environment is vital to continuation of language and culture for Indigenous communities. The Diné have distinct cultural and spiritual ties to the land. The environment provides subsistence within their traditional homeland. The Diné worldview is that all things are interrelated and interdependent—to exploit or destroy any aspect of creation is to harm one's self and the balance and harmony of Hózhó. Specific cultural beliefs about uranium instruct that it should not be disturbed.

### Environmental Injustice

In 1998, the Nuclear Regulatory Commission (NRC) granted a license to Hydro Resources, Inc. to conduct uranium mining using in situ leach technology, at four sites in the communities of Church Rock and Crownpoint, in northwestern New Mexico. The NRC conceded that the operations would pollute community aquifers with heavy metals and cause contamination to air, soil and other resources on lands traditionally used and occupied by the Diné. In 1979, a mill broke and 93 million gallons of radioactive liquids flowed into the Río Puerco, killing livestock and destroying crops.

The Navajo Nation hosts 520 abandoned uranium mines and three uranium mills that are Superfund[1] sites.[2] These sites have contaminated billions of gallons of groundwater and countless acres of land, and are the cause of significant illnesses and death in nearby Indigenous communities. Miners say they were not told of the dangers related to uranium exposure. A recent University of New Mexico study found that more than one-quarter of over 700 Navajo women tested had high concentrations of uranium in their bodies.



The threat to groundwater by extractive colonialism is an environmental justice issue that many communities of color face. The Ute Mountain Ute community of White Mesa in southeastern Utah and the Havasupai Tribe in the Grand Canyon also face threats posed by uranium operations.

#### Petition for a Hearing

Despite ongoing public health and environmental crises that have resulted from a failure to adequately regulate the industry, New Mexico continues to license uranium operations that will contaminate natural resources within the Navajo Nation. As the U.S. pushes for more clean energy in the fight against climate change, nuclear power, which

requires uranium, has gained support. “We continue to stress that nuclear energy is not clean energy and uranium mining is not welcome on the Navajo Nation,” said Jonathan Perry, director of the Eastern Navajo Diné Against Uranium Mining (ENDAUM), at a press conference.

In an effort to convince state and federal leaders to more fully address legacy issues of contamination of mining-impacted communities, ENDAUM filed a petition in March with the Inter-American Commission on Human Rights, an independent body of the Organization of American States (OAS). The petition alleged that NRC’s licensing of uranium operations violated Articles in the Constitution: Articles 1 (Right to Life), 3 (Right to Religious Freedom), 11 (Right to Health), 13 (Right to Culture), and 23 (Right to Property) of the American Declaration of the Rights and Duties of Man (“Declaration”).

*The threat to groundwater by extractive colonialism is an environmental justice issue.*

In October, the commission ruled that ENDAUM’s human rights petition against the United States is

“admissible.” The New Mexico Environmental Law Center, representing ENDAUM, filed additional evidence, including witness testimony. Navajo Nation President Jonathan Nez signed a proclamation in support of the petition. Eric Janz, the law center’s attorney, who has been working on the case for two decades, said a ruling from the commission could be used in future litigation or policy discussions. ■

Valerie Rangel is Community Outreach manager for the New Mexico Environmental Law Center. [HTTPS://NMELC.ORG](https://nmelc.org)

[1] “Superfund” is the fund created by the Comprehensive Environmental Response, Compensation and Liability Act (“CERCLA”) of 1980, 41 U.S.C. § 9601 et. seq. It is also the name given to the U.S. Environmental Protection Agency (“EPA”) program that oversees abandoned hazardous waste sites. [HTTP://WWW.EPA.GOV/SUPERFUND/ABOUT.HTML](http://www.epa.gov/superfund/about.html).

[2] United States Environmental Protection Agency (“EPA”), Abandoned Uranium Mines on the Navajo Nation, [HTTP://YOSEMITE.EPA.GOV/R9/SFUND/R9SF-DOCW.NSF/VIEWBYEPAID/NNN000906087?OPENDOCUMENT#DESCR](http://yosemite.epa.gov/r9/sfund/r9sf-docw.nsf/viewbyepaid/nnn000906087?opendocument#descr).

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Río Embudo, Northern New Mexico

# A STATEMENT FROM THE ALL PUEBLO COUNCIL OF GOVERNORS

## *Pueblo Governors Applaud Restoration of Protections for Cultural Resources and Sacred Sites in Utah*

The All Pueblo Council of Governors' (APCG), collectively representing the 20 Pueblo Nations of New Mexico and Texas, has long called upon the United States federal administration and Congress to recognize Tribal Nations' sovereign right to protect traditional cultural properties, cultural resources and sacred ancestral landscapes. Today [Oct. 8, 2021], the Pueblo Governors celebrate President Biden's actions, with the support of Interior Secretary Deb Haaland, to restore and expand Bears Ears National Monument and Grand Staircase-Escalante National Monument. Protections for these cultural landscapes in Utah will include permanent protections for important Pueblo cultural resources including ancestral villages, great houses, kivas, shrines, burials, pictographs, ancestral dwellings and ancient roads. These landscapes and their cultural resources are critical to the Pueblos' ongoing maintenance of languages, cultures and traditions.

APCG Chairman Wilfred Herrera Jr., former governor of Laguna Pueblo, said, "The desecration of the sacred landscapes of Bears Ears and the Grand Staircase Escalante has been devastating to the preservation of our ancestral histories and knowledge left to us by our ancestors. We applaud the current administration's efforts to rebuild a meaningful relationship with Pueblo and Tribal Nations through this historic action and look forward to continue working in the spirit of collaboration and cooperation to protect sacred sites and ancestral landscapes for the benefit of Pueblos, Tribes and all Americans."

In 2016, Tribal leaders, after many years of advocacy to prevent ongoing desecration of cultural resources in Utah, secured President Obama's support when he took action to establish Bears Ears National Monument. President Obama's original designation was approximately 1.3 million acres, incorporating input from the Bears Ears Intertribal

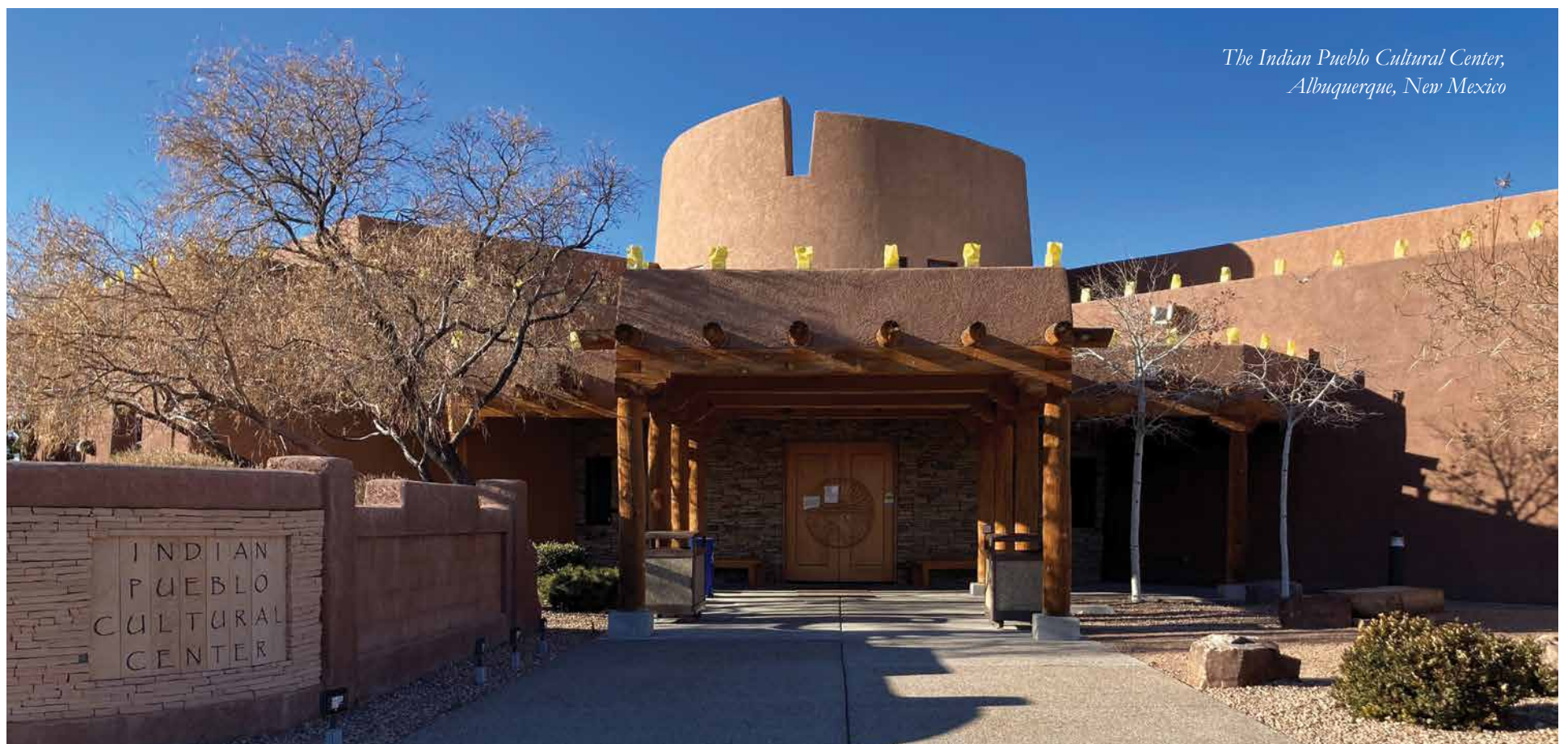
Coalition, with support of many Tribal Nations, including members of the APCG, to prioritize cultural resources. Historically, mining and oil and gas development threatened and desecrated the landscape. In 2017, President Trump formally reduced the size of the original designation by approximately 200,000 acres. Many tribes called President Trump's reduction a reflection of America's historic prioritization to profit from extractive developments over meaningful tribal input and consultation.

When Tribal leaders learned of President Obama's actions in 2016, we celebrated, broke bread, shed tears and offered prayers for thanks to our Creator and our spirits for their guidance and strength, which helped us achieve protections for a landscape so vital and important to our way of life. Once again because of President Biden's historic leadership, we are grateful to experience that same feeling of overwhelming joy. With President Biden's help and guidance from Sec. Deb Haaland, a Pueblo person, we are securing the preservation of our people and our beautiful songs, dances and responsibility to steward our lands for generations to come."

Gov. Val Panteah of Zuni stated, "We thank you Sec. Haaland for your recommendation to restore Bears Ears National Monument to its original designation. Pueblo Governors knew that you would provide an unprecedented voice for securing the federal trust responsibility to Tribal Nations. Many Interior Secretaries after you will look to your example of historic leadership. We wish many blessings to you in return for your role and your commitment to the Tribal Nations. On behalf of APCG and Zuni Pueblo, we thank you for your contributions to our people."

APCG Vice Chairman Phillip A. Perez, governor of Nambe Pueblo, stated, "Pueblo Governors are overwhelmingly grateful for the restoration of protections to these important landscapes in Utah. APCG also seeks President Biden's leadership and support for permanent protections to equally important cultural landscapes such as the Greater Chaco Region, which are similarly threatened by overwhelming oil and gas development. We urge the Biden-Harris Administration to take actions afforded by federal law."

**All Pueblo Council of Governors  
October 2021**



## A GREEN AMENDMENT FOR NEW MEXICO

Air pollution in New Mexico is increasing and contributing to severe health consequences, particularly in children, people who live near industrial facilities, the elderly and those with pre-existing conditions. The American Lung Association has identified the Albuquerque metro as the 26<sup>th</sup> most polluted city in the United States. Las Cruces is listed as 13<sup>th</sup> most polluted for ozone and Eddy is identified as the 24<sup>th</sup> most polluted county.

PFAS chemicals—associated with cancer, liver damage, diabetes and affecting cognitive and neurobehavioral development in children—contaminates some of N.M.'s surface water and groundwater and has impacted milk production.

A legacy of environmental racism continues. People of color, Indigenous and low-income communities are subjected to significantly higher rates of environmental harm and health, economic, and quality-of-life disparities.

Clean air and water, a livable climate, healthy ecosystems and environments and healthy soils to grow food are essential to healthy, safe lives. And yet, these basic human rights are not given the highest protection in New Mexico's Constitution alongside speech, property and gun rights. The proposed N.M. Green Amendment would place them in the Bill of Rights section of the Constitution.

While N.M. has significant environmental protection laws, policies and programs, in some instances pollution problems exist because of gaps in the law. In other cases, the law explicitly provides for alarming levels of environmental degradation and/or contamination through permitting. The N.M. Green Amendment will reorient government decision-making to prioritize prevention of environmental pollution and degradation. It will strengthen environmental justice by constitutionally mandating equitable protection regardless of race, ethnicity or socioeconomic status.

Adding the right of all people in the state to a “clean and healthy environment, including water, air, soil, flora, fauna, ecosystems and climate” to protection of “natural, cultural, scenic and healthful qualities of the environment” will ensure environmental protection and justice are given highest constitutional and legal recognition and protection in N.M. The amendment will also be an empowering tool for people to advocate firmly and confidently for environmental and climate protection, and it will provide a check on government action and inaction that leads to significant environmental harm.

It is fundamentally flawed to suggest that rights to a clean and healthy environment are any less appropriate for Bill of Rights protection than inalienable rights such as rights to bear arms, free elections, free speech, freedom of religion, and the rights of victims of serious crimes to be treated with respect, fairness and dignity.

Constitutional environmental rights protection will also foster economic development and job creation by encouraging environmentally sustainable, protective and innovative businesses and industries. Clean, beautiful and healthy environments are vitally important in New Mexico. Visitor spending has generated \$846 million annually, supporting 13,000 direct jobs—more than twice the number of energy and mining jobs.

In the two states that have Green Amendments, Pennsylvania and Montana, legislators, regulators, the attorney general, the governor, town councils, communities, environmental organizations and courts have successfully used constitutional Green Amendment language to protect the environment while balancing multiple interests, including property rights and economic development.



*Oil pump jack*

*The amendment would ensure rights to clean air, water, a stable climate and healthy environments.*

The first step for the proposed N.M. Green Amendment is the state Legislature in January. Although the session is strictly for budget-related matters, because this is a constitutional amendment, it will be allowed to be heard. A growing team of legislators will put forth the amendment, including Sen. Antoinette Sedillo López, Rep. Joanne Ferrary, Sen. Harold Pope Jr., Sen. Bill Soules, Sen. Elizabeth Stefanics, Sen. Gerald Ortiz y Pino, Sen. Carrie Hamblen, Rep. Tara Lujan, Sen. Shannon Pinto, Rep. Andrea Romero, Rep. Karen Bash, Rep. Debbie Sarinana, Rep. Roger Montoya, Sen. Linda López, Rep. Patricia Roybal Caballero, Sen. Bill Tallman, Sen. Jeff Steinborn, Rep. Kay Bounkeua, Rep. Christine Trujillo, Rep. Elizabeth Thomson, Rep. Gail Chasey and Rep. Miguel García. A majority of the Senate and the House are needed to pass the proposal. After that, it will go to the people for a vote.

Let's be sure *We The People* are well informed and able to ensure a legacy of environmental protection, environmental and climate justice for present and future generations. ■



*Maya K. van Rossum, an attorney and author, is founder of the national nonprofit, Green Amendments for The Generations, and a partner in the New Mexico Green Amendment Coalition.*

*State Sen. Antoinette Sedillo López and Maya K. van Rossum wade in the Río Grande in Albuquerque. Sen. López is one of the Green Amendment's co-sponsors.*  
© Bridget Brady

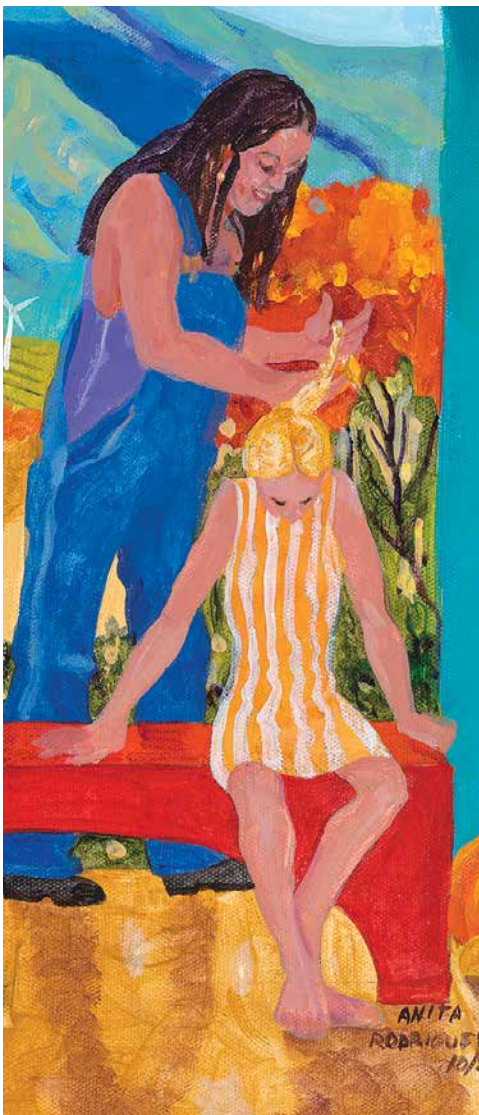




*“Blessing of the Animals”*

# La Coalición de Taos

BY **BARBARA NAIMAN-WOLF**  
 PAINTINGS BY **ANITA RODRÍGUEZ**



When I was a child, my parents uprooted me from a farm village in the Swiss Alps and brought me to the United States. The trauma of that severing lives in my bones. Decades later, I found a new home in Taos, New Mexico. But the more I learned about its history and culture, the less I felt I deserved to be here. Long conversations with Anita Rodríguez over the past two years have shown me the way to a sense of belonging. When we spoke recently for this article, she was completing a painting titled, *Querencia y Progreso, Prosperidad pa' Todos* (Querencia and Progress, Prosperity for All).

*Querencia* is the word generational *norteños* have for a passionate love of their land-based culture. “Perhaps because my family has been here for so many hundreds of years, the *querencia* I feel for the Taos Valley is intense,” Rodríguez said.

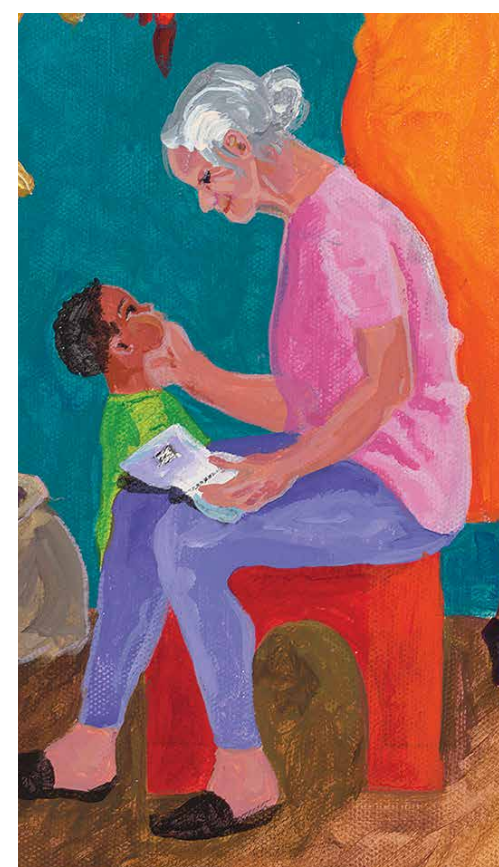
For many of her people, it is becoming nearly impossible to hang on. “What’s happening in Taos now fills me with a sense

of urgency to form *La Coalición*,” Rodríguez said. “I wanted to bring together like-minded newcomers, generational families and native Taoseños to work together to preserve what’s here and protect it.” *La Coalición*’s mission is to educate people about the true history and culture of Taos and uncover the political realities that are destroying the community. Through panel discussions, workshops and a website ([LACOALICIONDETAOS.COM](http://LACOALICIONDETAOS.COM)), its members

*“We need to control tourism by teaching visitors and newcomers how to be part of the solution and not the problem.”*  
 — Anita Rodríguez

hope to galvanize people to demand changes that enable everyone—not just elite newcomers—to thrive.

“The tourism industry does not meet the economic needs of our town,” Rodríguez says. “They’ve created these mythologies for profit, while



providing the people who are being mythologized lousy jobs. We need to control tourism intelligently by teaching visitors and newcomers how to be part of the solution and not the problem.”

Lack of housing for middle- to low-income families is a critical problem in Taos, while newcomers scramble to buy million-dollar homes. “We need development of a different kind,” says Rodríguez. “We are in desperate need of affordable housing, and they have to stop building on agricultural land.”

Most visitors and newcomers do not seem to understand the depth of feeling that Taoseños have for their hometown. “The tourist industry has taken *querencia* and contaminated it with commercialization.

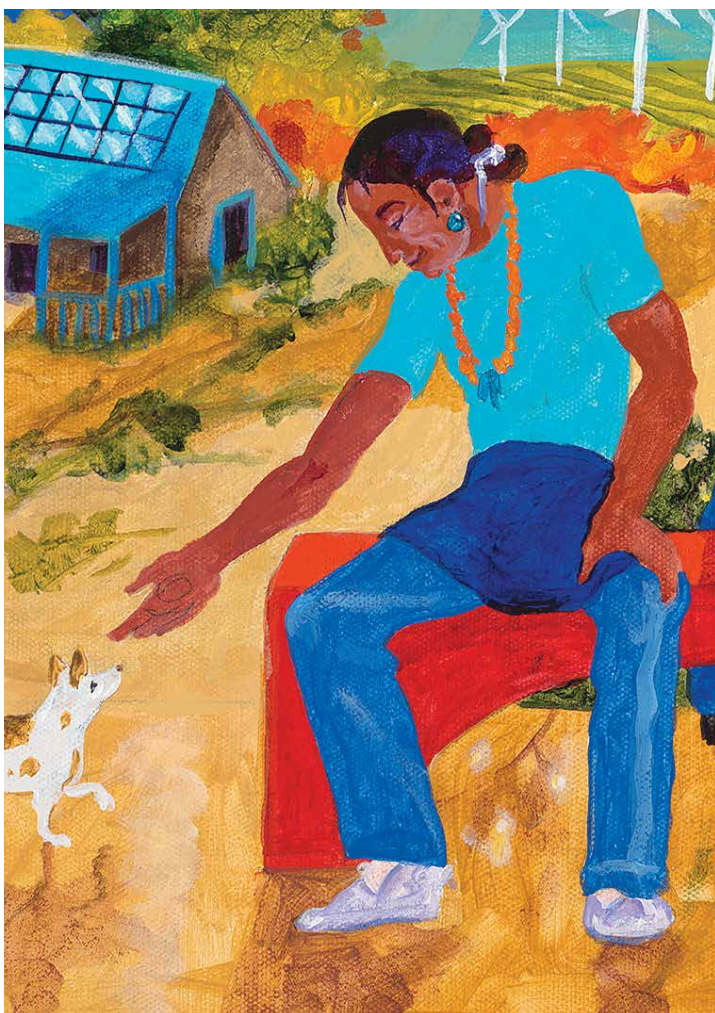
*“We are in desperate need of affordable housing, and they have to stop building on agricultural land”*

*— Anita Rodríguez*



They’ve made it marketable,” said Rodríguez. “Our own people can no longer afford to live where their roots go deep, where their ancestors are buried, where they want to grow old with their children and grandchildren nearby. That is the tragedy that La Coalición hopes to remedy.” ■

*Anita Rodríguez*



*Pages 17-18: Details from Anita Rodríguez’s painting, “Querencia y Progreso, Prosperidad pa’ Todos”*

**DANIEL HERRERA**

WISDOM COUNCIL,  
TILT (TAOS INITIATIVE FOR LIFE TOGETHER)

“We *norteeños* here in northern New Mexico have a wonderful word: *querencia*, the place where we are at our best. A place from where we draw strength. A place where we know exactly who we are. For a lot of us it means home in the deepest sense of the word.

**AURORA VALDEZ**

COMMUNITY WELLNESS MANAGER,  
TAOS PUEBLO HEALTH & COMMUNITY SERVICES

“My relatives are in the soil of Taos Valley. From Taos Pueblo to Arroyo Hondo, generations of my family belong to land now. I have a responsibility to care for this land in the same way my grandparents and elders cared for me. I am Taoseña with large extended families on both of my Pueblo and Hispanic sides, so I feel especially responsible to care for our entire living community in my work. This isn’t just a beautiful valley to us. If things get ugly, if our mountain burns, we can’t just sell our second home and return to another state. We’re going to be here because we belong here.”

**PASCUAL MAESTAS**

TAOS TOWN COUNCIL

“Querencia is the place that we love; it is where we are rejuvenated and where our hearts feel most at home.”

**JAMI DONLEY**

POET

“Last winter when we were sheltering in place, I was working on an art project and looked up the Spanish word for shelter—it was *querencia*. Taos has become my place of shelter, as it has for so many newcomers who want to find their place. I’m so grateful that this community accepts me.”

**CORILIA ORTEGA**

FARMER

“When I walk the dirt roads of my childhood, the similar roads of my parents, grandparents and great grandparents, I feel belonging in seeing the same things they would have seen: piñon trees, our river, and the homes of neighbors who know me, and who I know. It’s the same love for this place that was shown to me by my aging family that I now share with my young niblings by connecting them with our *vecinos/as*, the mountain, river, and the wild plants and animals. They too can learn the names of our living environment and feel belonging. Interconnection and caring for all the things in our hometown give me appreciation of and commitment to this area. I’m a small piece of this story in time and space. It’s my hope to continue adding to it for younger generations. Querencia is the continuation of our stories and livelihood.”

**TODD WYNWARD**

FOUNDER AND EXECUTIVE DIRECTOR OF TILT

“As we newcomers engage in this work to become people of place in this particular place, we need to do so humbly. We need to do so on our knees, with our palms open. We need to realize that we are guests here.”

**PRAYER BY MARIAN NARANJO**

SANTA CLARA PUEBLO ELDER, FOUNDER OF HONOR OUR PUEBLO  
EXISTENCE (H.O.P.E.) ([HTTPS://HONOROURPUEBLOEXISTENCE.COM](https://honorourpuebloexistence.com))

“Everyone here is walking, living and breathing within the sacred lands of Tewa peoples. Let us acknowledge where we stand and give thanks for living mountains, valleys and waters, which sustain our lives and form Tewa ancestral homelands. Let us ground our activities in the awareness of where we are, and may the mannerism of Pueblo Peoples enter our lives and fill us with gratitude, love, care and respect for all that is shared between us and all beings.”

OP-ED: MATTHEW SWAYE

## A FARM PLATFORM FOR TAOS

Hello from Taos, where family farmers are organizing a policy platform: 1. Tax-free farming; 2. Surplus purchase guarantees; 3. Local clean food certification; 4. A chemical ban

Local farmers are using “agricultural parity” as a guide, principles that together increase supply and demand of local foods and make cost a non-issue for both producers and consumers. These principles also restore rights that, over many decades, were diminished and then disappeared. It’s no surprise that farmers closest to land and food are first to propose local health policy reforms. Certainly, agricultural parity will improve the lives of farmers and their families. The farmers’ effort now is to have non-farmers see a Farm Platform as their own.

In Pope Francis’ 2015 encyclical, *On Care of Our Common Home*, the Holy Father called for a mass “ecological conversion.” He asked us for local agriculture policies and practices that heal humanity’s disconnect with God. He even has specific words about surplus, currently an issue for debate in Taos. Surplus purchase guarantees are popularly known as “guaranteed outlets.” SPG means that nonprofits serving daily meals buy food from local farms first and turn to Big Ag’s supply chain for products not readily sourced locally. The municipality (or more likely a co-op sponsored by the municipality) acts as a middleman. Muni, after all, means money.

In agricultural parity, the public is happily committed to eating all that farms can possibly grow. Farmers don’t have to think or act in ways that undermine their full potential. There is no “too much.”

The program would be administered by a farm co-op. “The taxpayer would not have to depend on current town personnel magically becoming produce efficiency experts,” one grower noted, acknowledging misconceptions of SPG that can weaken public enthusiasm.

In Taos, a growing group of community members want their municipal wealth spent on them. We are proposing a local Green New Deal. ■

*Rabbi Matthew Swaye is working with family farms in Taos to develop policy solutions. He believes that the community can be self-fed. [MATTHEWSWAYE@GMAIL.COM](mailto:MATTHEWSWAYE@GMAIL.COM)*

# How to Make Senior Capstones Truly Anti-Racist

*Alternative Assessments Are Not Inherently Equitable Without Concerted Effort*

BY LISA MARTÍNEZ, FUTURE FOCUSED EDUCATION

Three years ago, Judge Stapleton ruled in the landmark Yazzie/Martínez lawsuit that all New Mexican students have a right to be college and career ready and that the Public Education Department (NMPED) was not meeting this obligation. To illustrate this inequity—specifically among students who are low-income, bilingual and receiving special education services—the ruling pointed to low graduation rates and even lower proficiency scores in reading and math on standardized assessments.

The needs of all New Mexican students have not been met, but what if the measures themselves are broken? It is well-documented that standardized assessments are inherently biased (Rosales & Walker, 2021), especially given that their inception was founded in the eugenics movement (Gates, 2019). While the SAT and other standardized assessments have admittedly undergone significant changes over the years, these metrics remain fundamentally flawed, as they were intended to prove that White supremacy culture and values were superior to language, culture and knowledge that are essential to New Mexican families and communities.

## RESPONDING TO A HISTORY OF STRUCTURAL RACISM

As an answer to these concerns about standardized assessments as well as in response to community feedback about the undue number of hours students spent testing, the NMPED developed a grant in partnership with Future Focused Education to begin work on a more holistic, community-based capstone assessment. This is an opportunity for New Mexican students to demonstrate what they know and what they can do in a way that is meaningful to their community. The focus of this Graduation Equity Initiative is “to address the education system’s history of structural and inherent racism. New Mexico’s high school students need a more expansive learning and assessment system that honors their cultural and linguistic strengths while providing feedback and engaging opportunities that allow students to take ownership of their learning, build strong identities and see a rich future ahead.”

In this effort, the NMPED has made clear that this assessment is for *all* students, not only those who may not immediately meet the expectations of standardized assessments. In this way, the capstone is not an “alternative” assessment, as it is often dubbed, but is instead an equivalent to standardized assessments. This is an important step forward for New Mexican schools and valuing students’ lived experiences.

*An opportunity to demonstrate what they know and can do in a way that is meaningful to their community*

However, this capstone assessment is not in and of itself a great equalizer, so to speak. And all capstone assessments are not inherently anti-racist measures.

In order for N.M.’s capstone assessments to truly honor students’ language and culture, each capstone must be defined by each community across the state—while meeting rigorous expectations defined by the Public Education Department.

There are several examples of large-scale capstone assessments that we can learn a great deal from.



*Siembra Leadership High School students leave equipped with real-world skills needed in their local community. Courtesy MediaDesk New Mexico*



© Seth Roffman

## OAKLAND, CALIFORNIA

In 2014, Oakland teachers gathered to develop competencies and rubrics for use across the district. In 2015-2016, their first year of implementation, many Black students failed when their research papers were scored anonymously using the new rubrics; this process “exposed a history of low expectations.” (Choi, 2017) Yet, Oakland’s example encouraged teachers and school leaders to revise their instructional and assessment practices to provide students with college-ready skills that align with their research capstone. Oakland Unified School District also did not mandate the capstone rubrics developed in 2014. Instead,

district leaders recognized teachers’ professionalism and allowed educators to adopt the rubrics in their classrooms and school-wide. The percentage of students completing a capstone assessment for graduation has increased annually—at least prior to the COVID-19 pandemic.

*The capstone is not an ‘alternative’ assessment; it is an equivalent to standardized assessments.*

## HOW TO IMPLEMENT IN NEW MEXICO

Oakland’s successes will certainly guide us as we develop capstones appropriate for New Mexican communities. Yet we hope to push our efforts for equity and inclusion even further. Oakland’s capstone competencies were developed by educators in their district but did not include student, family, or community member input, whereas the model the NMPED is currently developing seeks community input first.



This initial process for capstones includes developing a graduate profile for that district or school community. Each profile should include the skills, knowledge and assets that they value and these attributes would ultimately be included in the capstone requirements and rubrics. Capstones completed by students would then reflect the language and culture specific to that community.

For example, Oakland’s presentation rubric requires

*N.M.’s high school students need a more expansive learning and assessment system that honors their cultural and linguistic strengths.*

students to make eye contact in order to earn the highest score in that category. Eye contact, however, is not valued by all communities across the state, and many New Mexican students struggle with this White-conforming norm in public schools.



Tony Monfiletto, executive director of Future Focused Education, supports community-based efforts to reimagine schools across the country.

Another example in which our New Mexican context matters is that Oakland’s rubric requires that the presentation be “logically sequenced.” (Thompson & Choi, 2018) According to White supremacy culture, a “logical” organization would likely be linear, organizing information chronologically or hierarchically; however, not all New Mexican communities see time as strictly linear or may even value hierarchies. In fact, we attended a capstone presentation in a New Mexican Indigenous community where the students presented their research and final products in a non-linear manner.

They organized their group presentation around each of their three final products. This meant that while their presentation was very organized, the system of organization was not

readily apparent to me, as a White woman visiting from outside of their community. Similarly, the students developed their work, presented, and were scored as a group. This collective work is another example of a value present in their community but one that defies White, individualistic culture. Yet, these both are values that might be included in a community-generated graduate profile and capstone assessment.

Moving New Mexican graduation assessments away from standardized exams that are biased against our students also requires that we are committed to removing other potential barriers and allowing students to demonstrate their knowledge and skills in a way that is meaningful to them. Our students deserve assessments that value their identities and experiences while providing them an opportunity to demonstrate the rigor and depth of their education. ■

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*Lisa Martínez is director of Learning by Doing, Future Focused Education. You can read more in FFE’s Equity in Education series, tracking the progress of the New Mexico Graduation Equity Initiative: [HTTPS://FUTUREFOCUSEDUCATION.ORG/](https://futurefocusededucation.org/)*

## SOURCES

Rosales, J. & Walker, T. (2021, March 20). The Racist Beginnings of Standardized Testing From grade school to college, students of color have suffered from the effects of biased testing. NEA. [HTTPS://WWW.NEA.ORG/ADVOCATING-FOR-CHANGE/NEW-FROM-NEA/RACIST-BEGINNINGS-STANDARDIZED-TESTING](https://www.nea.org/advocating-for-change/new-from-nea/racist-beginnings-standardized-testing)

Gates, M. (2019, Nov. 12). A Civil Rights Challenge to Standardized Testing in College Admissions. Harvard Civil Rights Civil Liberties Law Review. [HTTPS://HARVARDCRCL.ORG/A-CIVIL-RIGHTS-CHALLENGE-TO-STANDARDIZED-TESTING-IN-COLLEGE-ADMISSIONS/](https://harvardcrcl.org/a-civil-rights-challenge-to-standardized-testing-in-college-admissions/)

Choi, Young W. (2017, Oct. 26). Oakland’s Graduate Capstone Project: It’s About Equity. Learning Policy Institute Blog. [HTTPS://LEARNINGPOLICYINSTITUTE.ORG/BLOG/OAKLANDS-GRADUATE-CAPSTONE-PROJECT-ITS-ABOUT-EQUITY](https://learningpolicyinstitute.org/blog/oaklands-graduate-capstone-project-its-about-equity)

Thompson, C. & Choi, Y.W. (2018, Dec.). Performance Assessment Profile: Oakland Unified School District (OUSD). [HTTPS://LEARNINGPOLICYINSTITUTE.ORG/SITES/...](https://learningpolicyinstitute.org/sites/...)

## **FUTURE FOCUSED EDUCATION**

Equity begins with local wisdom. Students are able to achieve more because of where they come from, not in spite of it.

### **SYSTEMS-LEVEL TRANSFORMATION. LOCAL LEVEL SOLUTIONS.**

Real and enduring equity will not happen until young people and the communities where they live are valued. We must change the notion that underserved students and communities are inadequate. We believe they are able to achieve more because of where they come from, rather than in spite of it.

### **EQUITY**

Institutional racism is chief among the social determinants that drive education outcomes. Any education strategy that doesn't address racism and equity is inadequate. This is why Future Focused Education works to connect and create positive pathways for young people to become the change agents in their communities. Through this work, FFE seeks to make our communities healthier and more prosperous by helping young people see that their future is rooted in investing in their own communities.

### **THE THREE-PILLAR MODEL**

All of Future Focused Education's work is built upon a three-pillar model. Each pillar is equally important and convergent; together they create a balanced foundation for school design that serves students and communities that have not been served by traditional schools.

#### **PILLAR 1.**

##### **LEARNING BY DOING**

This is a form of project-based learning where students use problem solving to address real-world problems in their own communities. Learning by doing promotes deep thinking and problem-solving skills and develops nuanced lifelong learning skills. This pillar also opens opportunities for a mastery-based system where students demonstrate their learning through a variety of assessments as opposed to traditional grading. Rather than focus on coverage and seat time, learning by doing shifts the focus onto skill development through responsive, personalized curriculum.

#### **PILLAR 2.**

##### **COMMUNITY ENGAGEMENT**

Reciprocal relationships with the community are the foundation of a well-connected school with future pathways for its students. Community Engagement directly informs schools and their curriculum so that communities become more connected, integrated and better places to live. Young people have a chance to lead when they are engaged in the community, which is an essential youth-development strategy and preparation for them to become the leaders we need.

#### **PILLAR 3.**

##### **STUDENT SUPPORT**

Support is focused on treating young people as assets to be nurtured rather than problems to be solved. This pillar is about building a school culture that both promotes high academic expectations and an environment that is intellectually and emotionally safe for students. The power of the model is realized when the pillars converge, resulting in schools that adapt to the needs of students rather than the other way around.

## **EVERYDAY GREEN**

# Health Equity and Sustainability

BY **SUSAN GUYETTE**

Do you believe that all people, without exception, should have an equal chance to live a life of quality health? Then you believe in health equity. Health inequities relate to length and quality of life, rates and severity of disease, disabilities, death, and access to treatment. Applying community-driven strategies to eliminate health disparities among racial and ethnic groups, as well as the LGBT

*Health equity and building immunity are closely intertwined.*

community, is a new policy direction in New Mexico and nationwide.

What has changed? Equity is more strategic. Instead of a "one-size-fits-all" approach, the emphasis is on equal health outcomes according to individual need. Prior emphasis focused on the concept that everyone is allocated equal access to distribution of funded services based on population size. This system favors urban centers. But one in three New Mexicans lives in rural areas. Achieving equity may require an "unequal" view of resources in order to actually achieve an equitable outcome—not only in terms of available services, but also in access (including transportation) and improvement outcomes.

### **Indicators of Health Inequity in New Mexico**

- 25 percent of New Mexicans live at or below the federal poverty level.
- New Mexico has a health care provider shortage which negatively impacts preventative care and access to treatment.
- Obesity and diabetes among New Mexico youth are disproportionately higher in Native and Hispanic populations.
- Diseases of despair are highest among Native Americans, with N.M. ranking highest for alcohol-related deaths in the nation.
- LGBT youth are more likely to suffer depression and anxiety and to have attempted suicide.
- 35 percent of New Mexicans primarily speak a language other than English.
- New Mexico's minority-majority population has suffered historical trauma and the effects of colonization, leading to systemic racism and social injustices.

Equity issues are ever more critical now, given the role a healthy body plays in boosting immunity. Groups with increased levels of illnesses and stress are dying disproportionately from COVID-19.

## THE NEW MEXICO RESPONSE – SUSTAINABLE SOLUTIONS AND RESOURCES

How does equity relate to the reduction of disparities in our healthcare system? A social justice intention would be to remove existing fundamental barriers leading to inequity in the first place. Expanding inclusivity by shifting strategies to address underlying inequities is fundamental to providing underserved communities an equal chance to live a productive life. Everyone benefits from taking advantage of children's capacity to learn, workforce productivity and increased immunity.

An outstanding outcome of a decade-long shift is that a number of state and nonprofit initiatives are now addressing health equity by forming partnerships to network and coordinate services in order to provide resources in a timely way. Here are some of them:

- **New Mexico's Office of Health Equity**

([www.nmhealth.org](http://www.nmhealth.org)) develops tracking indicators, conducts assessments, provides training, develops tools for community action and facilitates partnerships. The OHE provides equitable health opportunities by building relationships with communities, establishing collaborations with care providers, and by efforts to establish quality services in a culturally and linguistically appropriate way. These measures are intended to ensure that all New Mexicans, especially in rural and underserved areas and borderlands, have increased opportunities to be healthy. You can receive health data updates through the OHE website.

- **ReachNM** (505-591-9444) The New Mexico Youth and Families Department has launched a new service. People in need can text with an expert for help finding resources to meet basic needs.

- **New Mexico Health Equity Partnership** ([WWW.NMHEP.ORG](http://WWW.NMHEP.ORG)) is an outreach organization working at the grassroots level to gain input from a range of racial and ethnic groups in order to determine solutions. This includes training and funding for Health Impact Assessments with underserved communities, mentoring, facilitating organizational partnerships and initial funding for people of color and small organizations.

- **The New Mexico Out-of-School Time Network** (NMOST, [WWW.NMOST.ORG](http://WWW.NMOST.ORG)) has compiled a list of sites that continue to serve meals to students during public school closures due to the coronavirus. New Mexico is the state with the highest child food-insecurity rate in the country, affecting the development of healthy minds and bodies.

- **The New Mexico Association of Food Banks** ([WWW.NMFOODBANKS.ORG](http://WWW.NMFOODBANKS.ORG)), an organization particularly critical during the pandemic, continues to provide food. The NMAFB serves a network of more than 600 hunger relief agencies and programs. Ways you can help include these recommendations from the food banks: Give Funds, Give Time, Give Food.

## FOOD SECURITY AND HEALTH

Creating sustainability for the generations to come is at stake. Good nutrition is a basic need, and hunger is a growing crisis in Northern New Mexico. With the long-lasting, ripple effects of COVID-19, it is projected that one of every five people and one of every three children will be affected by food insecurity in our state.

Healing as an everyday process is the sustainable long-term view, rather than just disease intervention. Fresh food is medicine, in terms of nutrients and enzymes that support good health. Long-term, sustainable solutions are possible by encouraging individuals to grow some of their own (think sprouting, microgreens, hoop houses, gardens), as well as linking farms and food distribution centers to create a resilient food system.



The compassionate choice is to broaden our sense of community. ■

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*Susan Guyette, Ph.D., INHC, is of Métis heritage (Micmac Indian/Acadian French). She is a planner specializing in cultural tourism, cultural centers, museums and native foods, as well as an Integrative Nutrition Health Coach. [SGUYETTE@NETS.COM](mailto:SGUYETTE@NETS.COM)*

### FOOD BANKS IN NORTHERN AND CENTRAL NEW MEXICO

*Give Funds – Give Time – Give Food*

#### **FOOD DISTRIBUTION CENTER – N.M. DEPARTMENT OF HEALTH**

Santa Fe – 1190 S. St. Francis Dr.  
(505) 827-2613  
Albuquerque – 1425 William St. SE  
800-648-7167, [WWW.NMHEALTH.ORG](http://WWW.NMHEALTH.ORG)

#### **THE COMMUNITY PANTRY – GALLUP**

P.O. Box 520, Gallup. 87305  
505-726-8068, [WWW.THECOMMUNITYPANTRY.ORG/](http://WWW.THECOMMUNITYPANTRY.ORG/)  
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#### **ECHO FOOD BANK – FARMINGTON**

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Painting by Anna Rondon.  
 Courtesy, New Mexico Health Equity Partnership

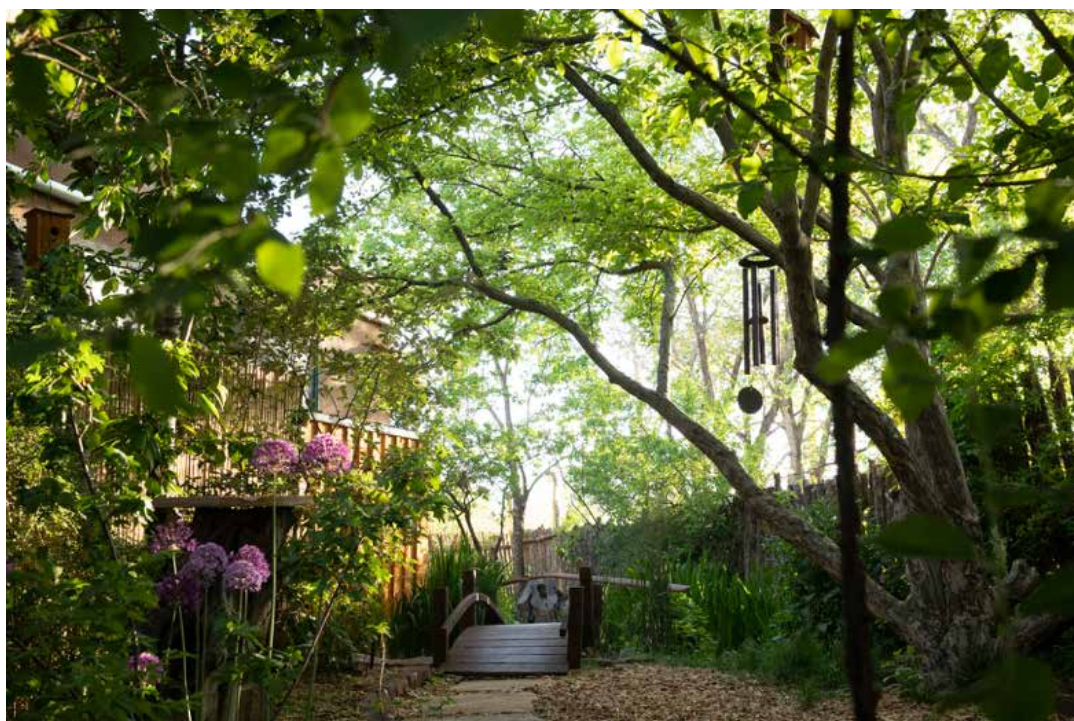
*Health equity is the equal opportunity  
 for everyone to live their healthiest life.*

# REESE BAKER ENVISIONS SANTA FE AS A MODEL FOR LARGE-SCALE WATER CONSERVATION

EXCERPTS FROM AN INTERVIEW BY **MARY-CHARLOTTE DOMANDI**

PHOTOS BY **ESHA CHIOCCHIO**

EDITED BY **SETH ROFFMAN**



*The permaculture food forest at Reese Baker's home has a canopy of tall trees that shade the understory, creating a microclimate where a huge variety of perennials thrive.*

Reese Baker, with his company The RainCatcher, has been designing permaculture landscapes for many years and has turned his home on a quarter-acre lot in Santa Fe, N.M., into a teeming oasis of life, complete with wetlands, a pond, trees, perennial food forest, and flowers galore—not to mention bats, pollinators, fungi, soil microbes and other friendly creatures.

Baker's vision is to make Santa Fe a pilot city for large-scale water conservation, capturing each drop of rain to grow gardens and trees, recharge the aquifers and reduce the pressure on municipal water systems, while increasing local food production.

Mary-Charlotte Domandi turned her interview with Baker for Esha Chiocchio's Good Earth project into a one-hour podcast for her Down to Earth series. It's an inspiring segment with ideas that could literally transform the way we build our cities. Below are excerpts from the interview.

## **Permaculture**

**RB:** I got interested in permaculture a long time ago. I was working on an organic farm and decided to get a contractor's license and start applying Permaculture principles and water harvesting to an idea I had for a landscape company.

Most of our work is residential. We will take a home site and set it up so that all rainwater that lands on the property is harvested and infiltrated into the soil. All the water that comes off the roof is channeled into a tank system and used for drip irrigation. If possible, we take all the gray water and black water from the residence and reuse it in the system as well. When we combine those water sources, we can do all kinds of things you wouldn't normally be able to do in the desert.

Slowing down and spreading out the water is the most important thing we can do. In the Santa Fe area, everything pretty much has a slope to it so we have this unique ability to move water across the land, capture it and, when it overflows, move it to the next point. We can harvest more water than most places normally can.

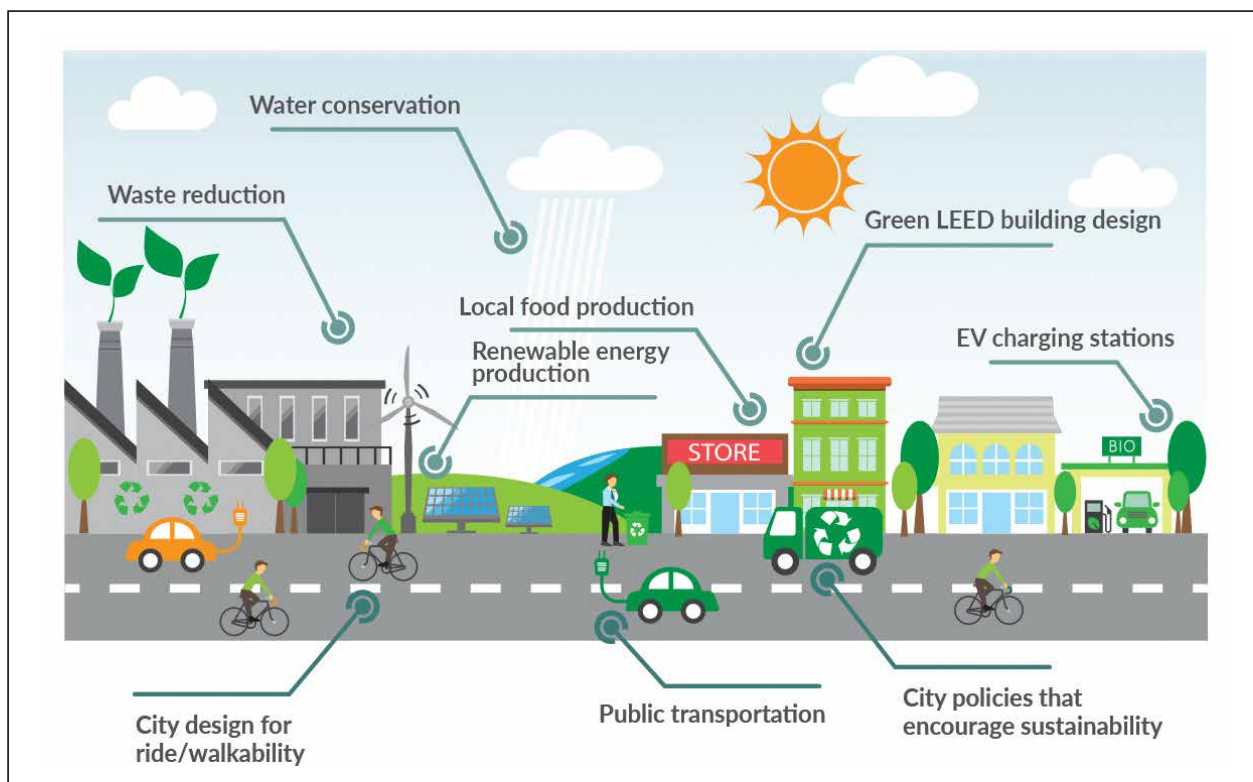
One of the principles of permaculture is to follow patterns we see in nature. In general, in the desert, stage one is to capture water, get it to stay in the environment and soak into the ground. Once we do that, we can actually start to capture organic matter, which we have very little of here. Organic matter holds moisture in the soil and creates a microbiome that allows microbial life to flourish, which releases nutrients for the plants we're trying to grow. That is very difficult to do here. Permaculture is a really interesting term. Basically, the way I look at it is it's setting up human civilizations to work with nature again.

## **Cities as Ecosystems**

If you look at the way a city is set up, what's the first thing in the high desert as far as sustainability? It's water. Well, all of our urban environments are currently set up to drain water off of the impermeable surfaces as fast as possible, shoot it through a culvert, drop it into an arroyo and send it off to a lower river system. What that does is it takes all of our pollutants, our toxins, pesticides, paints,

*Turning cities' arroyos into ephemeral creeks and streams would supply clean water sources for downstream users.*





*We really need to start thinking of cities and urban environments as an ecosystem itself that humans are a part of.*



*The RainCatcher crew builds a raingarden at Santa Fe High School. This system will divert stormwater from the parking lot to plantings, where it can be filtered and slowly soak into the aquifer.*



*Top: A concept of a city as an ecosystem. Above: A raingarden built by The RainCatcher, Inc. in the middle of a business complex diverts stormwater through a series of basins, where it is purified by plants and fungi. The garden includes perennial edibles, including currents and oyster mushrooms.*

### **Transforming Streets and Parking Lots**

When we take water off the surface, not only are we creating underground water reserves in the soil; we're also moving that water—which has a lot of pollutants and toxic chemicals—through a biological system. We move them through bacterial and fungal networks. Bacteria and the fungi don't recognize that something is a pollutant. They recognize things as food sources, as carbon sources.

And so, we're rewetting the soils. We are cleaning the water that goes into those soils. We're shading the concrete jungle we live in and also creating habitat and food resources for wildlife. We could even be doing this for humans. We could be creating food forests with runoff water that's coming off the streets in cities. I'm fascinated with this concept. I think that if we can shift the paradigm of stormwater drainage to stormwater infiltration, moving things through systems that create biodiversity as well as aesthetic beauty, then we have the ability to turn cities in the middle of a desert into something lush, more like an oasis.

soaps, etc., and pollutes the environment. What I think we really need to do is to start thinking of cities and urban environments as an ecosystem itself that humans are a part of. Then we can begin to become regenerative in all of our work instead of degenerative.

The city limits of Santa Fe make up about 26 square miles. If we get 12 inches of rain, that's almost five billion gallons. Right now, 95 percent of that is running off the surface. If we take five billion gallons year after year after year and capture and infiltrate it into the ground, what effect would that have on the entire ecosystem? Well, we can start growing trees. When we grow trees, we start to shade asphalt and concrete. When we shade things, we start to cool things off, which allows for more shrubbery, more understory to grow.

*We are on the forefront of a really big transformation of urban environments.*

Water that comes off of streets and parking lots is toxic because we are using petroleum products as an asphalt source. Asphalt carries polyaromatic hydrocarbons, which have been proven to be carcinogenic and mutagenic. What's fascinating to me is that they're basically made out of carbon and hydrogen, which in themselves are not dangerous. But when they get inserted into a biological system, they cause havoc. However, if we can move those carcinogens through, for example, fungal mycelium... it has been shown that as they decompose, mushrooms have specialized enzymes they secrete into the soil that can actually take



*Zuni bowls retain the grade of the channel, allowing stormwater to soak into the ground. Native grass, flowers and shrubs were seeded along the banks and in the channel to prevent sediment travel and erosion. New plantings will increase biodiversity, along with wildlife and pollinator habitat. Dead trees and shrubs were inoculated with edible/medicinal fungi and buried to create a “sponge” of decomposing wood that will add a moisture source. This will begin to re-establish shallow aquifers, grow trees and eventually bring ephemeral flows back to the desert.*

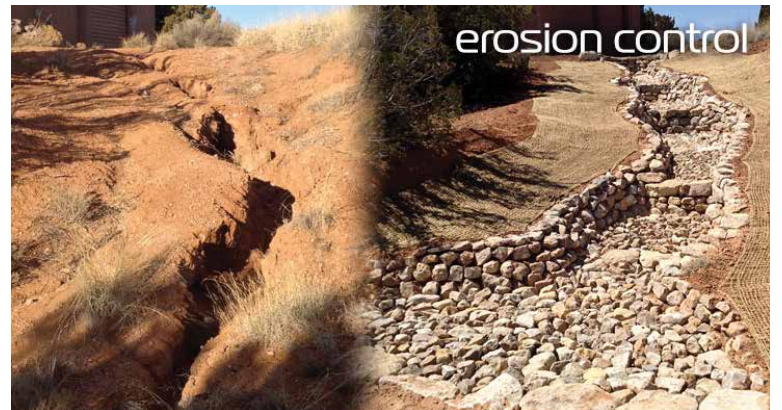
these chemicals, break them down and turn them into sugars. The plants and fungi can incorporate those sugars into their structure, and all of a sudden, you’ve taken a super toxic compound, moved it through a biological system and it’s no longer toxic.

If we were to completely rethink a parking lot for a big-box store... When you go to a big-box store, where’s the first place you would like to park? Under a tree, in the shade, especially in the desert in the summer. We need to design every parking lot so that all of the surface drains water to trees. And therefore, we take all that water off impermeable surfaces, all the toxins, and drop them straight into a biological system, which creates shade for patrons of the store. And it creates a clean water source as it moves through the soil.

### Turning Arroyos into Creeks and Streams

Water that gets captured and allowed to permeate the soil is really interesting because—depending on the underlying rock formations—you can actually get not just a base flow that goes down into the deeper aquifers—in some cases, you’ll hit a layer of caliche or bedrock that moves the water laterally. As it does this, it will eventually create an outlet at a low point, usually an arroyo. What I envision is that by infiltrating all this water from our urban environments, the low points can become seeps and springs and they can become ephemeral flows again. If you were to go back 1,000 or 10,000 years to these environments, there were natural floodplains. There were no human changes to the hydrology of the land, and water would infiltrate. There were lots of roots. There were meanders to the streams. Water that landed in the higher watershed would make it underground to lower watersheds and create streams. And so, turning all of a city’s arroyos into ephemeral creeks and streams wouldn’t just increase the water and the biodiversity—it would also supply clean, constant sources for downstream users.

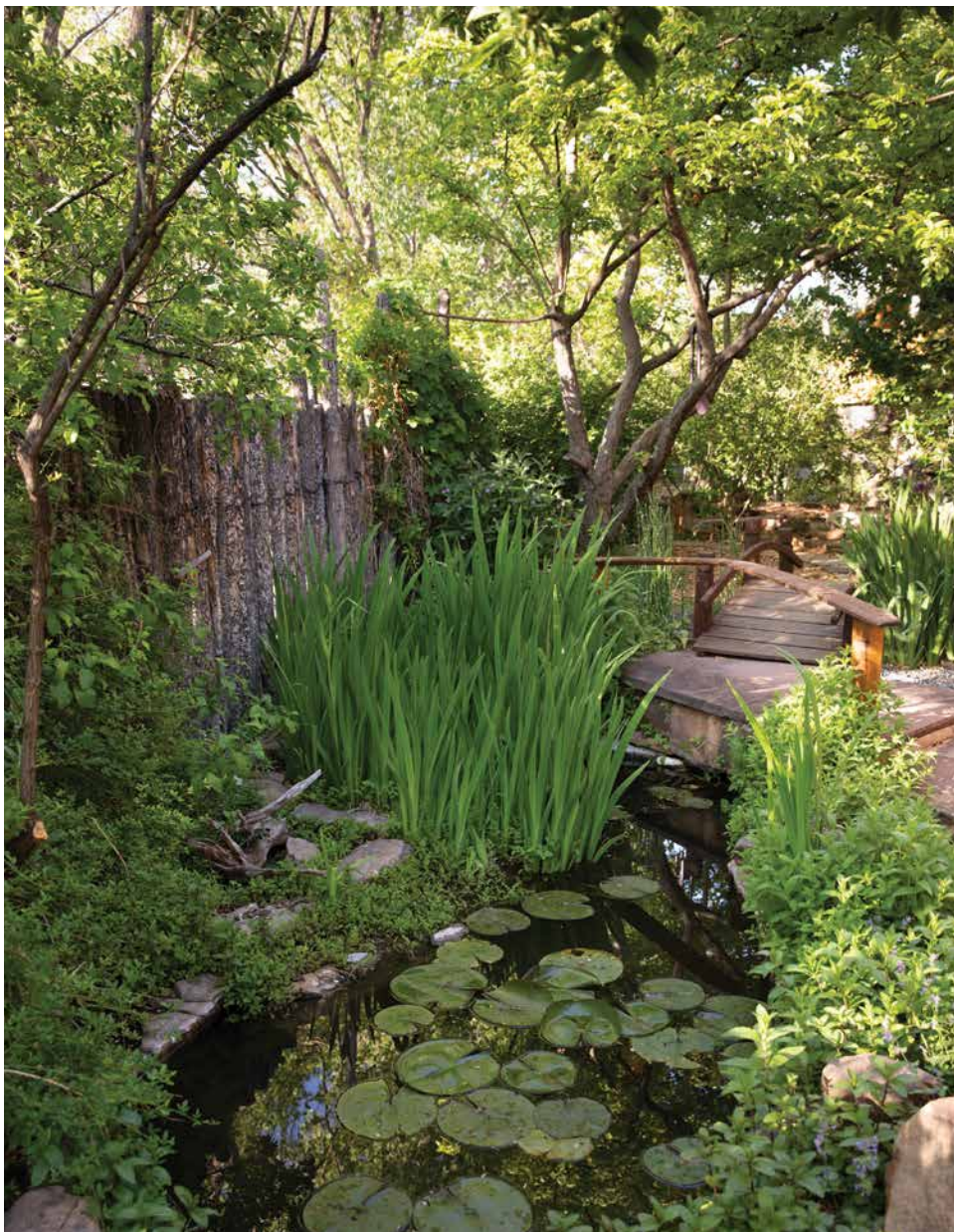
*“I think that our communion with the smallest of the things that are alive is going to be a secret to our survival.”*



*Courtesy The RainCatcher*



*Catchment tanks (r) store hundreds of gallons of rainwater to be used for landscaping throughout the year at Reese Baker’s home.*



*Baker diverts shower and laundry water to a pond and wetland where plants filter the water biologically and provide habitat for fish, birds, insects and bats.*

## Rainwater Harvesting

Taking water from a roof is something we do a lot. I love it because when you capture rainwater and store it for reuse, all of a sudden you have this great resource of clean water that can be utilized when the weather gets hotter and drier. You can capture water in the winter. As spring comes, you start to utilize it. Then it gets hot and dry and we get the monsoons, and you can fill that reserve back up. It's a wonderful way to capture, store and put water back into the ecosystem when it needs it. If we were to take roof water catchment and infiltrate every drop in the entire city, we would have an amazing resource of slow-release water. We would be relying a lot less on our potable water systems that come from the reservoirs and mountains. Rooftop catchment is great for landscape needs and even for domestic uses.

My house is on about a quarter of an acre smack in the middle of the city. With our standard precipitation, I have access to about 100,000 gallons of water a year that falls from the sky. We have set up the entire property so that not one drop can leave the site. We've created mulch and terraces. We have a good base of soil that soaks that water up. We take all the roof water from the canals and capture it in tank systems. If the tanks overflow because of a big storm, it goes into a pumice wick device which takes that water underground and infiltrates it to where it can't evap-

*“My dream is that we have a paradigm shift and start utilizing nature to do all the work for us.”*

orate. We have a drip irrigation system that runs off of that rainwater. When we run out, we will use potable water. But rain is our primary water source.

## Using Grey Water

We're on the city sewer, so we don't have a chance to work with black water, but we do have a chance to work with the grey water. All the water from our laundry and showers goes back out into the landscape. Some goes into sunken beds where we have mulch. And we have places where we can move that water through the landscape to increase the fungal diversity. We grow fruit trees and all kinds of herbs with it. The other cool part is we have a pond and grey water wetlands. The wetlands take the soapy water and all the oils and help filter it biologically. When the wetland fills up, it overflows and then the pond recirculates. So, we've been able to utilize our grey water to create an ecosystem that didn't exist before.

Having a little water excess in the desert brings in incredible biological diversity. We've got bats and hundreds of birds. We have bees and pollinator insects that drink that water. We have dragonflies and damselflies that create little houses and habitats right there on the reeds and cattails. We have all kinds of mint and watercress, nettle and different things growing. We have a little stream, and next to that we have all kinds of medicinal herbs. It adds wildlife capability and a huge amount of beauty. Of course, we also have raccoons and skunks and some of those animals coming in. But to create space for the wild, which we've basically tried to eliminate with our cities, I think is special.

## The Secret to Restoration of the Earth

Life wants to be there and flourish. If you can set things up with nucleus points to grow microbes and plants, all of a sudden you get a recirculating system. The nutrients are recycling, the water is being kept, there's shade and microclimates. It's a beautiful concept.

Humans could literally be the secret to the restoration of the Earth instead of a virus. Right now, we're sort of a virus that takes all the resources, and we do whatever we want and don't really care about what's happening. But if we can



*Oyster mushrooms sprout on elm logs seeded with spore plugs and kept moist and protected from the hot sun of Santa Fe's high desert environment*

become a healer of the Earth... That is what we need to be educating the youth to do. Basically, all we need to do—especially in the desert—is harvest the water, start to grow soil, and everything will come from that.

I really think that our communion with the smallest of the things that are alive is going to be a secret to our survival. And it's the secret to our actual life. We're a conglomerate of (estimates say) 100 trillion cells that are all working together to give the illusion of ourselves. They say by 2035, 70 percent of the human popu-

lation is going to live in urban environments. So, how do we make those lush and beautiful and free of toxins?

I'm a big fan of perennial agriculture, stuff that we can put into the ground once, get it to flourish and then watch it grow. Perennial cover-cropping has worked really well on a micro scale on my property. We now have 26 trees that are creating 85 to 90 percent of an overstory that only let diffuse light in. It captures solar radiation and keeps heat from landing on the ground. It keeps the sunlight sparse enough to where the plants can still do their photosynthesis, but the sun's damaging effects are turned into organic matter, which drops in the fall and builds soil and holds more moisture, and you get a fascinating recycling process. Using perennial landscapes as cover-cropping is a fabulous idea.

Twice a year we mulch because mulching the ground about three inches thick can limit evaporation by 50 percent. It doesn't really matter what you use—wood chips, straw, alfalfa, shells—as long as you're covering the surface, UV [light] cannot reach the ground. The earth is insulated from temperature changes and from water loss through capillary action. It holds more water and allows it to infiltrate deeper and start to bring in micro- and macro-organisms. And then we start to get earthworms coming back and a constant cycling of nutrients. Over the last 15 years, we have probably added six feet of organic matter.

So now, if you're in a pathway or garden bed, if you can take a shovel or pitchfork, press it into the ground and pull it back, you can see all the different layers of stuff we've added over time. You have these mycelial



*Baker's rain gardens collect rainwater from street runoff. It infiltrates through planted areas that naturally remove toxins, grow food for humans and wildlife, and reduce erosion downstream.*

networks and worms, and you have moisture and a soil structure with aggregate content that holds moisture and life. It's critical.

### **Santa Fe as a Model for Water Conservation**

One of my big goals is to turn my neighborhood into a pilot project for the city of Santa Fe, like an environmental educational location. I invite all the neighbors. They see it, are fascinated and are getting more and more excited. I've got fungal experiments where I'm trying to grow edible and medicinal mushrooms in shady spots of the garden. Probably 10 of our neighbors have taken wood chips and are collecting mulch and mulching their properties. We inoculate logs and take it to their houses where they're starting to try to grow mushrooms. They're thinking about

*We could be creating food forests with the runoff water that's coming off of the streets.*

the microclimate effects of planting trees and having shade in the desert, especially in urban environments. They're thinking about capturing water from their roofs and redirecting it to places that are useful instead of just letting it run off their property.

I would like to take areas that have speed bumps and turn them into traffic calming structures that are also water harvesting structures where we can plant trees and edible shrubs and create little food forest pockets. That would be step one, to show that whenever it rains, there is no water leaving our neighborhood anymore; it's all soaking in. That will eventually lead to people wanting to do more with their little front yards so that they capture water and create more shade and start to create more food. One step leads to the next.

We are on the forefront of a really big transformation of urban environments. We're working here in Santa Fe, which is a little city in the spectrum of the United States. But if you look at some of the coastal areas, the particulate from tires and asphalt and microplastics and all these things going into the oceans can be captured and broken down using these types of ideas. We could literally clean the entire world if we would just have a paradigm shift with what is possible to do with stormwater. My dream is that we have a paradigm shift and start utilizing nature to do all the work for us.

Here's what I love to imagine: We take the city of Santa Fe and harvest the water. We're in a piñon-juniper ecosystem, but the city becomes a complex biodiverse system that has shade trees and tree species we've never seen before, which can bring different migratory birds and insects. We can create pollinator habitat and then start creating food all over the place for people. We could have almond trees growing in Santa Fe just by using stormwater. The almond trees could be protected by big shady oak and ash trees. Underneath those we could have Nanking cherries and delicious currants like those that are in our garden right now. And underneath that, fungal networks could be purifying the water. We need to have pilot projects. That's what I want to get set up over the next 20 years. That's my big goal. ■

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*Reese Baker is currently a Ph.D. student in UNM's Department of Biology. His company, The RainCatcher, has a website: [HTTPS://THERAINCATCHERINC.COM](https://theraincatcherinc.com). To hear Baker's full interview by Mary-Charlotte Domandi, visit [HTTPS://RADIOCAFE.MEDIA/DOWNTOEARTH-RAINCATCHER/](https://radio.cafe.media/downtoearth-raincatcher/). The Good Earth series project ([HTTPS://WWW.ESHAPHOTO.COM/GOOD-EARTH](https://www.eshaphoto.com/good-earth/)), led by photographer Esha Chiocchio, was supported by a grant from the NMDA Healthy Soils Program, an initiative of the Healthy Soils Working Group ([HTTPS://WWW.NMHEALTHYSOIL.ORG](https://www.nmhealthsoil.org)). It features a series of eight short videos on N.M. soil stewards. You can watch them at [HTTPS://WWW.ESHAPHOTO.COM](https://www.eshaphoto.com).*

#### **A STORMWATER RAIN GARDEN IN DOWNTOWN SANTA FE**

A stormwater rain garden will soon be installed on Alameda Street, right next to the Santa Fe River, upstream of Old Santa Fe Trail. The project will highlight important and unique design criteria that will not only utilize rainwater as a source of groundwater recharge; it will also remove toxic pollutants from stormwater before it enters the river. The stormwater will be filtered biologically as it enters the rain garden system.

Native grasses that harbor beneficial bacteria will be used for phytoremediation. Invasive elm trees along this section of the river will be used to grow specific fungi that can be used in mycoremediation.

Trash and sediment traps will keep the basins clean and easily maintained. The project will also highlight the implementation of an urban food forest landscape, which will provide habitat and a food source for birds and wildlife, while simultaneously enhancing the aesthetic, natural beauty of the streetside using a Zuni bowl/acequia technique to direct water through the site.

## END SINGLE-USE PACKAGING

Every Tuesday in my village 50 miles north of Santa Fe, household trash bins are wheeled out to the roadside to be picked up by the automated trucks of the local trash contractor. Each household pays about \$200 a year for the service, amounting to about \$5 million for our county of 40,000 residents.

Some municipalities and counties are finally waking up to the fact that the costs of trash collection and recycling should be taken off the backs of the taxpayer and placed where they belong: on the balance sheets of the corporations who profit from producing single-use packaging of all kinds, such as plastic bottles and containers, plastic and paper wrapping, boxes, sacks and clamshells, tin and aluminum cans and glass bottles.

The way things now stand, most consumers pay for packaging twice: first, in the retail price of packaged goods, and second through waste collection fees and taxes. Packaging corporations profit handsomely from the first but are let off the hook for the costs of the second. This is yet another example of “socialism for the rich, free enterprise for the poor.”

As a first step, packaging manufacturers should assume the recycling and disposal costs of the billions if not trillions of products they send out into the environment. But there is a better way. In my post-World-War-II childhood, returnable soft drink and milk bottles were the rule. Every city of any size had Coca-Cola and 7-Up bottling plants where passersby could watch files of empty bottles parading past plate-glass windows on the way to being filled. These plants also washed and cleaned returned bottles for refilling. Currently, the only packaging being widely reused consists of shipping containers, which cross the ocean countless times before being scrapped or repurposed.

### **WINTER WATERSHED FILMS**

*December 7 and 9, 6-7 p.m. (Online)*

A video about The RainCatcher's work will be featured at the Winter Watershed Benefit, an online event celebrating water and resilience via short films and moderated discussions with the land stewards and filmmakers.

**Session 1: Tues., Dec. 7:** Regenerative Agriculture and Healthy Soils, features C4 Farms and Reunity Resources.

**Session 2: Thurs., Dec. 9:** Water Systems and Restoration, features Santa Ana Pueblo and The RainCatcher.

The films are part of the Good Earth film series about New Mexican agrarians who are revitalizing land through regenerative practices—building soil, sequestering carbon, reducing toxins, and improving the health of people, plants and animals. The series, by producer/director Esha Chiochio, audio producer Mary-Charlotte Domandi, and editor Madison McClintock, can be found at [GOOD-EARTHMEDIA.COM](http://GOOD-EARTHMEDIA.COM).

This benefit supports the Santa Fe Watershed Association, whose mission is to protect and restore the health and vibrancy of the Santa Fe River and its watershed, from the river's headwaters to the Río Grande. Tickets are by donation: [WWW.SANTAFEWATERSHED.ORG](http://WWW.SANTAFEWATERSHED.ORG).

Requiring manufacturers to cover the full life-cycle cost of packaging materials would inspire ecological alternatives, such as returnable bottles of all kinds, reusable boxes and other containers. It's not a stretch to imagine that instead of putting bottles and jars and milk and yogurt containers in the recycling bin or the trash, you cleaned them and put them back into your reusable shopping bags to take back to Walmart or Costco—for a credit. We currently buy single-use packaging. Then we immediately throw it away. In the future, we should only rent it from the manufacturer, who would own it for all time. Every time we took a bottle or a can or a box back to a store to be refilled or exchanged, the original manufacturer could receive a modest rental fee, assuring enough profit to stay in business in order to continue producing replacement containers.

Recycling and waste disposal create jobs, but cleaning and reusing all consumer packaging would create more and better jobs, and more local ones at that. Landfills could be downsized or even almost eliminated, at least for consumer waste. Manufacturing energy use would plummet.

Waste disposal and recycling are what economists call “externalized costs.” They are costs externalized to the environment in the form of the energy needed to dispose of, ship, or recycle packaging ingredients, and associated environmental and health effects. In short, they are costs incurred by corporations, but which they are currently excused from paying.

A nationwide and eventually global system of reusable containers would eliminate much of trash and recycling as we know it, leading to the downsizing or elimination of landfills, and to cleaner oceans and a cleaner environment in general.

That said, here's hoping packaging corporations step up to this challenge on their own accord. ■

*Stanley Crawford writes and farms in northern New Mexico.*

## ARE YOU:

- Engaged in the Northern NM agricultural community?
- Passionate about local food sovereignty?
- Interested in earning extra income this winter season?



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# Building a Plan for Plastic

BY JO STODGEL

My first experience of the enormity of waste issues was a trip I took as a child with my dad to the old Buckman landfill in Santa Fe. Back then, tractors would work side by side with pickups and cars, crunching old cabinets and couches into heaps of household waste, all of which had been designated irredeemable. I was shocked by the devastation and amount of stuff being thrown away. Years later, in high school, I traveled abroad for the first time with the Santa Fe-based Bali Art Project and got to see what waste management looks like in much of the world. After a long late-night bus ride, we arrived in the picturesque village of Ubud, high up in the hills.

We awoke in our bungalows the next morning, eager to explore the surrounding lush jungle. But something was off. A small creek behind our spot served as the hotel's dumpsite and was filled to the banks with all sorts of waste materials, especially plastics. I quickly learned that there was little or no centralized waste management and people disposed of trash wherever they could—throwing it over a back wall or sweeping it into piles and setting it alight. To this day, the smell of burning trash sets off memories that bring me back to Bali.

As a university student, I was fortunate enough to study abroad for a couple of years, and that is when I really began focusing on waste management and plastics in particular. I was inspired by projects such as the Earthship community near Taos, where all sorts of materials such as bottles and tires have been repurposed into beautiful structures. In Scotland, at the Findhorn Foundation, I built a small lighthouse structure in a garden using found materials, and wrote a paper called *Appreciation of Plastic*. Later, when it was time

*All communities should be empowered and have the tools to do something positive with plastic.*

to choose a focus for my dissertation at Schumacher College in England, I again decided to focus on plastic. This time I had a new ally. I had just learned about Ecobricks from an acquaintance who did a beach cleanup project off the coast of Bali.

Ecobricks are simply clean and dry plastic bottles, densely stuffed full of smaller plastics such as bags, wrappers and cut-up clam-shell packaging. They can be stacked

horizontally in masonry applications or can be used vertically as an alternative wall-filler or insulation material. They originally took off in Guatemala around 2005. Many schools and structures have been built with them there. Today there are many Ecobrick projects around the world. In 2012, for my dissertation work, I traveled to South Africa to engage the community of Greyton with this revolutionary idea. We ended up starting the Trash to Treasure Festival on the edge of the local dumpsite. All the infrastructure was built with



*Constructing an Ecobrick round house at the dumpsite near Greyton, South Africa, 2014*

reclaimed waste materials. The festival ran for three years. The locals continue to make and build with Ecobricks.

I started *Upcycle Santa Fe* in 2014 to create a local Ecobrick project. I set up a collection point, spread the word and began building things. That same year, I met the inventor of the Ubuntu-Blox building system, Harvey Lacey, a welder by trade. In response to the catastrophic earthquake in Haiti, he invented a metal, hand-powered press to turn Styrofoam into construction bales. With his assistance, *Upcycle Santa Fe* built a new type of press out of reclaimed wood. The press uses a simple lever system to compress plastic bags full of Styrofoam or other plastics into compact bales tied with string. Our first project was to build a wall out of these bales in the Village of Agua Fría.

Ubuntu-Blox are a game-changer in the quest to repurpose and utilize waste plastics. Although originally made exclusively with bagged Styrofoam, we quickly discovered that they can also be made using hard and soft plastics, such as clamshell packaging and plastic film. Because of their size and versatility, they offer a more efficient way than Ecobricks to deal with a high volume of plastic, and thus are better suited for community-scale projects. Over the years we have built several Ubuntu-Blox presses and a few structures using Ecobricks and Ubuntu-Blox. We have conducted short courses at local schools and completed research with Los Alamos National Laboratories (LANL) on the safety and efficacy of these new building materials. Based on that research, we confirmed that compressed plastic is indeed a fantastic insulation material.



*Constructing an Ubuntu-Blox shed north of Santa Fe*

Right now, we are building a new Ubuntu-Blox structure. Over the course of four years, we piloted a collection service for local businesses where once a month we would get paid to pick up clean and dry plastics. These have been compressed into Ubuntu-Blox and will form the walls for a tool shed north of Santa Fe. This structure is the first of its kind in the U.S. and will contain roughly 546 cubic feet or 1,500 pounds of plastic that was otherwise headed to a landfill. We are documenting the construction process and will soon compile a series of videos detailing the steps. Links to these and other resources can be found on our website.

In other news, we are currently rebranding *Upcycle Santa Fe* into *Plan 4 Plastic* ([PLAN4PLASTIC.ORG](http://PLAN4PLASTIC.ORG)) with the intention to reach a wider audience. Education has always been our main focus. We are excited to help more people create projects in their communities. These solutions are open-source, not patented, and can be adapted to different contexts. We have provided guidance to several national and international programs to start Ecobrick and Ubuntu-Blox projects and have built Ubuntu-Blox presses in Utah and Costa Rica. We believe that all communities should be empowered and have the tools to do something positive with plastic. We invite you to learn more about this important work and join the movement. ■

## SUSTAINABILITY AND THE NECESSITY FOR PARTIAL DE-CENTRALIZATION

‘The Gospel of Efficiency’ prevailed at the heart of early-20<sup>th</sup> century political and industrial philosophy that basically mandated the notion of ‘put everything in Nature to human use.’ This has become totally embedded in our current cultural paradigm. Author William deBuys first introduced to me the work of Samuel P. Hays, who authored a book entitled *Conservation and the Gospel of Efficiency*, first published in 1959. Alas, I have not read that book, but the phrase ‘gospel of efficiency’ piqued my perceptions 20 years ago when I was producing a six-part radio series entitled “*Moving Waters: The Colorado River and the West*”. It was then that I learned that politicians and fiscally enticed movers and shakers wanted to make every drop of Colorado River water available solely for human use. Thus, anthropocentrism mated with politics, bureaucracy and capitalism inevitably resulted in corporate takeover of both American economics and a huge swath of the North American continent—as well as our system of cultural attitudes.

Wall Street became the American avenue of dreams until 1929, when the stock market crashed and the American public and much of the rest of the planetary human population became overwhelmed by the Great Depression. At that time, the human population of our planet Earth had yet to reach two billion.

The late Secretary of the Interior, Stewart Udall, grew up on a farm in St. Johns, Arizona, during the Great Depression. He pointed out to me that the rural population of our country was still largely self-sustaining because of farming, and to a lesser extent, hunting. Stewart was nine years old when the Depression overtook much of America, mostly urban America, when the national theme song was “Brother, Can You Spare a Dime?” In those days, a dime would get you a doughnut and a cup of coffee, which, when heartily laced with cream and sugar, could keep one relatively functional throughout the day. Not an ideal diet, but when you’re really hungry and broke...

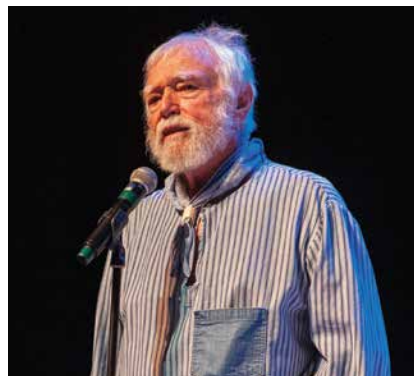
We were fiscally salvaged by World War II when the military-industrial complex came into maturity with the production of warships, warplanes, heavy and light weaponry and the greatest military force humanity had yet witnessed. The gospel of efficiency became the heart of a newer version of Manifest Destiny. And thus remains.

We are now centralized within a system of cultural attitudes that has certainly resulted in a level of prosperity heretofore unknown by our species. Or at least part of our human population is. Other vast sectors of humanity have no potable water, decent sanitation, food, or even a place to live. By now, our

human population verges on eight billion souls, and there just isn’t enough room or resources to sustain us all. Yet the rich continue to get richer while the poor—well, they don’t really count, do we?

Yet our planet Earth cannot possibly sustain a human population of eight billion hunter-gatherers, the lifestyle that prevailed among

*Here in the arid Southwest, we can reshape our multicultural perspective and reassume responsibility for our human relationship to homeland.*



Jack Loeffler

humans for the first 40-or-so thousand years of our species-hood, when our population ostensibly averaged between five and 10 million. Indeed, our planet cannot sustain our species at its current population combined with the expenditure of natural resources to fulfill our presumed human needs.

We have fructified way beyond Earth’s capacity to sustain us indefinitely. And our system of cultural principles and attitudes has become centralized to such a degree that we are thwarted by our collective inability to visualize alternative trails between the horns of our collective dilemma. We have come to rely on money—not self-sufficiency—for our individual and collective survival. We have devised bureaucracies to define and defend legislated procedures rather than figure out self-sustainability.

We in the arid West are governed from the nation’s capital, way to the east of the hundredth meridian that divides the humid East from the arid West. We are governed by politicians and their fiscal sponsors, most of whom know rain and snow with great frequency. They can’t imagine running out of water. Nor running out of money. But here in the arid Southwest we experience a far different perspective, one that can reshape our regional and even local multicultural perspective. And we can reassume responsibility for our human relationship to homeland. That isn’t even against the law. Human legislation is often designed to violate Nature’s principles by turning habitat into the coin of the realm.

For many years, *Green Fire Times* has forwarded regional traditional lifeways as a means of restoring hand-crafted lifestyles that don’t necessarily rely on the coin of the realm. This publication has featured essays by gifted culture-bearers, practitioners of traditional and alternative lifeways that are far more commensurate with balance and harmony with home habitat than is generally found in monoculture.

The late Estévan Arellano was a gifted Hispano writer and activist who provided his definition of *querencia* as follows:

“Querencia is that which gives us a sense of place, that which anchors us to the land, that which makes us a unique people, for it implies a deeply rooted knowledge of place, and for that reason we respect our place, for it is our home, and we don’t want to violate our home in any way. ... Our philosophy is borrowed from our Native American brothers, for we are brothers and sisters.” (p. 158, *Thinking Like a Watershed*, UNM Press, Albuquerque, 2012)

Arellano’s sense of history ran deep, as did his relationship to the land. His wisdom continues to reverberate throughout Hispano culture and beyond. William deBuys contends that one can re-establish one’s sense of *querencia* from where one was born to where one chooses to live and learn. Enrique Lamadrid, one of New Mexico’s greatest Hispano scholars, says that *querencia* actually reflects that place that one wants to die in. To me, *querencia* lies at the heart, the very basis for the practice of bioregionalism, which is, at least in part, the alignment of one’s psyche with homeland. As Gary Snyder forwarded with the title of his superb book, *querencia* is in great measure “the practice of the wild.”

This is a profoundly different mindset than to what many of us born and raised within monoculture have been acculturated. Over the generations since the end of World War II, monoculture has been dominated by a system of economics based on accrual of monetary wealth and consumerism, overseen by centralized governance and attendant bureaucracy.

Every culture, regardless of traditional ties to homeland, has been affected in various ways by monocultural enticements. Yet here in the North American Southwest, the human population has the opportunity to at least partially

*My sense of querencia is utterly attuned to our planet Earth, although I have long rooted myself in the Upper Río Grande watershed.*

decentralize from an erroneous mindset based on growth for the sake of growth, to digesting the realization that each of us shares membership in a biological species that is part of a natural living system which is our planet Earth. Thus, I personally pledge my allegiance to our planet rather than our nation or any nation or cause that runs counter to the health of homeland.

As my late compañero, Ed Abbey, once said into my microphone: “Call me a pantheist. If there is such a thing as divinity, and the holiness is all, then it must exist in everything, and not simply be localized in one supernatural figure beyond

time and space. Either everything is divine, or nothing is. All partake of the universal divinity—the scorpion, and the packrat, the June bug and the pismire, and even

*The gospel of efficiency became the heart of a newer version of Manifest Destiny. And thus remains.*

human beings.” (p. 15-16, *Headed Upstream: Interviews with Iconoclasts*, Jack Loeffler, Harbinger House Press, 1989, Sunstone Press, 2010).

Ed Abbey was dependent on the coin of the realm. Yet he was self-sufficient by supporting himself as an author, or “scrivener,” as he referred to himself. But he longed to depend solely on himself as a hunter-gatherer with a garden in a landscape where buffalo continued to roam unfettered by fences or urban sprawl. It was a dream we shared.

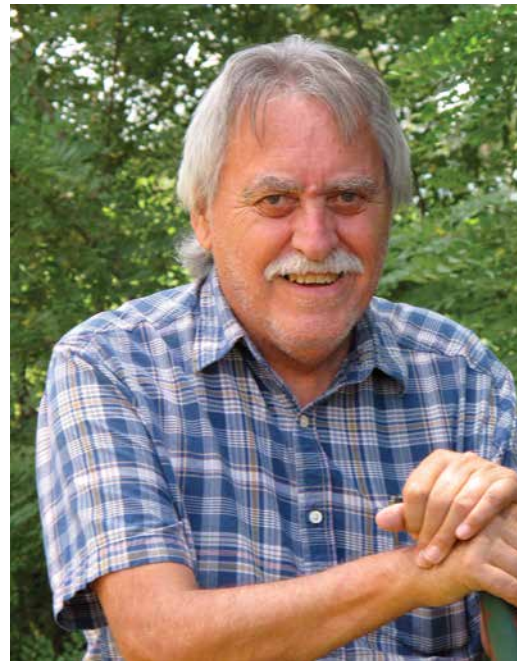
But I admit that I’m not a gardener or engaged in the practice of animal husbandry. I no longer hunt my meat nor even gather my own firewood. At the age of 85, I have only enough energy to walk my morning mile while celebrating the flow of Nature, do necessary chores around the house, letting the piece of land to which we own the deed (but not the land) do its own thing as it restores itself according to its own nature after having been over-grazed earlier on. As my daughter, Peregrina, pointed out in our daily phone conversation, I have spent much, if not most of my life trying to cultivate this extraordinary gift

of consciousness. That is what sustains me best. I have taken every cue from the wisdom expressed by my friends and acquaintances of every cultural persuasion as I’ve roamed this homeland of the North American Southwest, and beyond. My sense of querencia is utterly attuned to our planet Earth, although I have long rooted myself in the Upper Río Grande watershed. I try every day to spend as much of each day as I can in celebration of the flow of Nature through the Universe, a tiny fraction of which is visible in the night sky blanketing our watershed.

To me, within the context of my own limitations, cultivating my consciousness, thus taking all the nails out of the frame of reference imposed by monocultural perspective, is what sustains my Self, that part of me that is most deeply rooted in Nature. An imaginative physicist and jazz musician named Stephon Alexander

forwards the notion that “intuition is the lifeblood of physics.” He also said in a recent interview in *New Scientist* magazine, “The universe produced brains, so why couldn’t the universe itself be a superbrain?” If so, then each human consciousness is an aspect, however minuscule, of the universal brain. This makes deep sense to me, especially after a significantly long lifetime mostly spent in simply trying to understand the nature of reality. While also spending a part of every day finding ways that I can work on behalf of our planet Earth and its denizens.

All of what I’ve written here is my own sense of what system of attitudes is necessary to develop



Left: Enrique Lamadrid, top: Estevan Arellano (Photos © Jack Loeffler)  
Above: Jack Loeffler with Edward Abbey

if we as a species are to actually sustain ourselves without depleting the natural resources of our planet. Common sense and intuition are vital to this endeavor. Take a long hard look at what is the basis for monoculture as we presently know it, and proceed from there. And never neglect watching the birds, listening to the wind, and dancing within the flow of Nature. ■

*Jack Loeffler has produced about 400 documentary radio programs for Public Radio, and many sound collages for museums. He has written several books and scores of essays. He has donated his aural history archive to the New Mexico History Museum in Santa Fe, N.M.*





# Hope

An excerpt from *The Trail to Kanjiroba: Rediscovering Earth in an Age of Loss*

BY WILLIAM DEBUYS

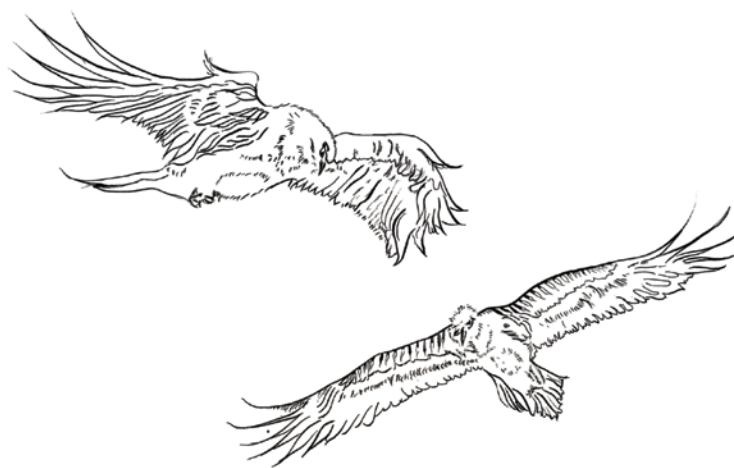
Hope means different things to different people. In its simplest form, it expresses a desire for things to turn out well, for a worrying story to have a happy ending. Most of the time when people ask about hope, they are asking, will everything be all right? Can we return to how things used to be, when this worry did not exist?

With regard to climate change, the answer is no: too much CO<sub>2</sub> and other heat-trapping gases already burden the planet's atmosphere and oceans; the effects will be with us for at least several lifetimes; we cannot draw a get-out-of-jail-free card, for none exists.

But hope has other meanings. Václav Havel wrote, "Hope is definitely not the same thing as optimism. It is not the conviction that something will turn out well, but the certainty that something makes sense, regardless of how it turns out." Havel was linking hope to the philosophical distinction between instrumental good and intrinsic good. Something is instrumentally good if it produces a desired result. Its goodness depends on outcome. Something is intrinsically good if doing it is virtuous of and by itself—that is, if its value exists independent of result. The essence of hope, Havel was saying, is to believe in the intrinsic goodness of right action. Through his many years as an outcast or in prison, fighting the Soviet domination of Czechoslovakia, Havel never knew (until the Soviet Union's final collapse) if his efforts would succeed. Yet he persisted in a spirit of hope, knowing his course was correct.

The novelist Barbara Kingsolver also distinguishes between hope and optimism. In her view, "The pessimist would say, 'It's going to be a terrible winter; we're all going to die.' The optimist would say, 'Oh, it'll be all right; I don't think it'll be that bad.' The hopeful person would say, 'Maybe someone will still be alive in February, so I'm going to put some potatoes in the root cellar just in case.'" Kingsolver concludes, "Hope is a mode of survival. I think hope is a mode of resistance." The hope she describes is close to the ecological notion of surprise: that sometimes big, consequential things happen with virtually no warning—an earthquake or the fall of the Soviet Union being good examples. To trust in uncertainty of the future, believing in the possibility, however remote, of beneficial change—this is the essence of hope.

Of course, surprise is no panacea: it can harm as well as benefit, a new coronavirus triggering a pandemic being a salient case in point. Surprise comes to us out of the vastness of what we don't know. It is amoral and uncaring. But it is also central to true hopefulness. Roshi Joan [organizer of the expedition of which this book is a chronicle] puts surprise and uncertainty at the center of her teaching. Placing trust in "not-knowing," she says, offers a strategy for dealing with dark times: change is certain and there is always a chance things will improve. Here is where Kingsolver's wisdom connects with Havel's. Kingsolver is talking about future surprise, the uncertainty of how the winter that lies ahead will turn out; Havel is talking about how we carry ourselves in the meantime: we have to "do what makes sense," irrespective of the outcome. In jail Havel could not know if the Soviet Union would crumble during his lifetime. Nor could Nelson Mandela, during 33 years imprisoned on Robben Island, know when apartheid might



similarly disintegrate. But when the long-desired surprise arrived, both men, having done "what makes sense," seized the moment and helped render the surprise as beneficial as possible. The essence of their preparation was that they never lost hope. ■

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*William deBuys is the author of 10 books, including A Great Aridness: Climate Change and the Future of the American Southwest (2011). He lives on a farm he has tended since 1976 in northern New Mexico.*

*"Pausing to be hopeful, remembering that hope is not optimism. Hope is what motivates us to show up because "what we do matters, even though how and when it may matter, who and what it may impact, are not things we can really know beforehand...have hope, but let it be a wise hope!"*

— Joan Halifax, Upaya Zen Center, Santa Fe

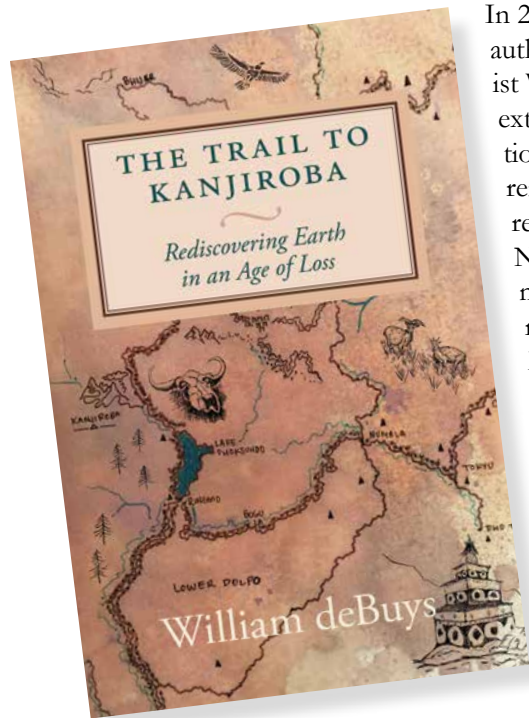
*"To be hopeful in bad times is based on the fact that human history is not only of cruelty, but also of compassion, sacrifice, courage, kindness. If we see only the worst, it destroys our capacity to do something. If we remember those times and places where people have behaved magnificently, this gives us the energy to act. And if we do act, in however small a way, we don't have to wait for some grand Utopian future. The future is an infinite succession of presents, and to live now as we think human beings should live, in defiance of all that is bad around us, is itself a marvelous victory." — Howard Zinn*

# BOOK PROFILES

## THE TRAIL TO KANJIROBA: REDISCOVERING EARTH IN AN AGE OF LOSS

BY WILLIAM DEBUYS

Seven Stories Press ([WWW.SEVENSTORIES.COM](http://WWW.SEVENSTORIES.COM)), 2021



In 2016 and 2018, acclaimed author and conservationist William deBuys joined extended medical expeditions into Upper Dolpo, a remote, ethnically Tibetan region of northwestern Nepal, to provide basic medical services to the residents of the region. Having written about climate change and species extinction, deBuys went on those journeys seeking solace. He needed to find a constructive way of living with the discouraging implications of what he had learned about the diminishing

chances of reversing the damage humans have done to Earth; he sought a way of holding onto hope in the face of devastating loss.

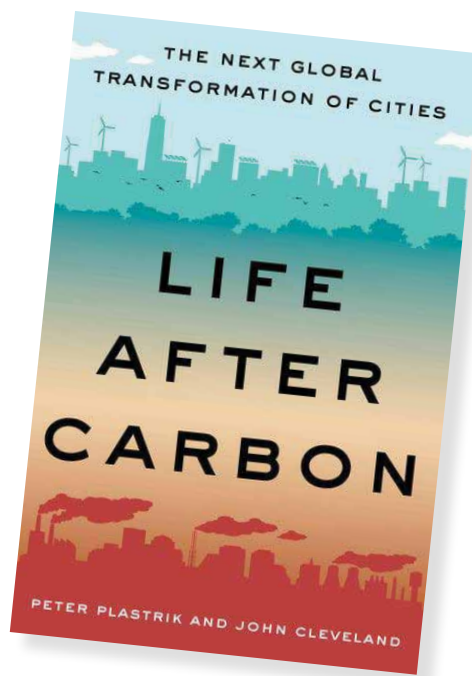
As deBuys describes these journeys through one of Earth's remotest regions, his writing celebrates the land's staggering natural beauty and treats his readers to deep dives into two scientific discoveries—the theories of natural selection and plate tectonics—that forever changed human understanding of our planet. Written in a vivid and nuanced style evocative of John McPhee or Peter Matthiessen, *The Trail to Kanjiroba* offers a surprising and revitalizing new way to think about Earthcare, one that may enable us to continue the difficult work that lies ahead.

## LIFE AFTER CARBON: THE NEXT GLOBAL TRANSFORMATION OF CITIES

BY PETE PLASTRIK  
AND JOHN CLEVELAND

Island Press, 2018

The future of our cities is not what it used to be. The modern-city model that took hold globally in the 20th century has outlived its usefulness. It cannot solve the problems it helped create—especially global warming. Fortunately, a new model for urban development is emerging to aggressively tackle the realities of climate change. It



transforms the way cities design and use physical space, generate economic wealth, consume and dispose of resources, exploit and sustain the natural ecosystems, and prepare for the future.

In *Life After Carbon*, urban sustainability consultants Pete Plastrik and John Cleveland assemble this global pattern of urban reinvention from the stories of 25 “innovation lab” cities across the globe. A city innovation lab is the *entire* city—the complex, messy, real urban world where innovations must work. It is a city in which government, business and community leaders take to heart the challenge of climate change and converge on the radical changes that are necessary. They free downtowns from cars, turn buildings into renewable-energy power plants, re-nature entire neighborhoods, incubate growing numbers

of clean-energy and smart-tech companies, convert waste to energy, and much more. Plastrik and Cleveland show that four transformational ideas are driving urban climate innovation around the world, in practice, not just in theory: carbon-free advantage, efficient abundance, nature's benefits and adaptive futures. And these ideas are thriving in markets, professions, consumer trends, community movements and “higher” levels of government.

*Life After Carbon* presents the new ideas that are replacing the pillars of the modern-city model, converting climate disaster into urban opportunity, and shaping the next transformation of cities worldwide. It will inspire anyone who cares about the future of our cities, and help them to map a sustainable path forward.

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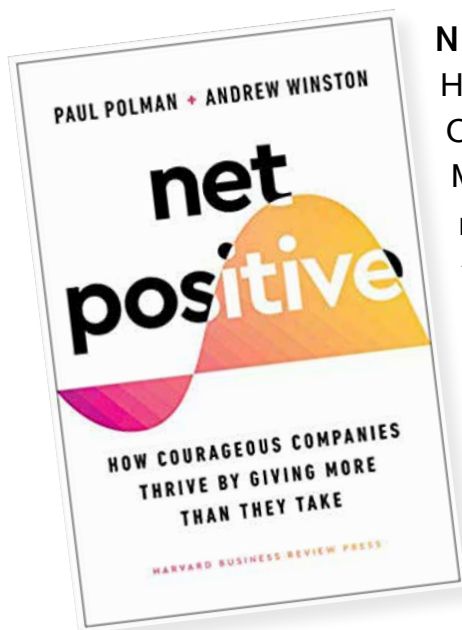


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## NET POSITIVE: HOW COURAGEOUS COMPANIES THRIVE BY GIVING MORE THAN THEY TAKE

BY PAUL POLMAN  
AND ANDREW WINSTON

*Harvard Business Review Press (2021)*

Runaway climate change and rampant inequality – massive dual challenges and other profound shifts such as pandemics, resource pressures and shrinking biodiversity – threaten humankind’s very existence.

Other megatrends, such as the push for a clean economy and the unprecedented

focus on diversity and inclusion, offer exciting new opportunities to heal the world, and prosper by doing so. Government cannot do this alone. Businesses must step up.

In this seminal book, former Unilever CEO Paul Polman and sustainable business guru Andrew Winston explode 50 years of corporate dogma. They reveal key lessons about how you can profit from fixing the world’s problems instead of continuing to create them. To thrive today and tomorrow, they argue, companies must become “net-positive” – giving more to the world than they take. A net-positive company:

- 1) Improves the lives of everyone it touches, from customers and suppliers to employees and communities, increasing long-term shareholder returns in the process.
- 2) Takes ownership of all the social and environmental impacts its business model creates. This in turn provides opportunities for innovation, savings and building a more humane, connected and purpose-driven culture.
- 3) Partners with competitors, civil society, and governments to drive transformative change that no single group or enterprise could deliver alone.

## GREEN FIRE TIMES

*News & Views from the Sustainable Southwest*

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## USDA MODERNIZING RURAL WATER PROJECTS

The U.S. Department of Agriculture, as part of the Biden administration’s infrastructure package, will issue millions of dollars in grants and low-interest loans to modernize rural water infrastructure. The programs are intended for towns with less than 10,000 people.

Last summer, Agriculture Secretary Tom Vilsack and Rep. Teresa Leger Fernández (D-N.M) announced the program at an aging wastewater treatment plant in Ohkay Owingeh Pueblo, north of Santa Fe. “Every community needs safe, reliable and modern water and wastewater systems,” Sec. Vilsack said. The Pueblo will receive a \$610,000 loan and a \$1.6 million grant to improve the plant, part of a \$4 million investment in the state. That will allow the tribe to start extending service to more than 1,000 residents. State and local grants will be needed to finish the project.

“The consequences of decades of disinvestment in physical infrastructure have fallen heavily on communities of color. This is why USDA is investing in water infrastructure in rural and Tribal communities that need it most to help them build back better, stronger and more equitably than ever before,” Vilsack said. In March, Vilsack announced a “major civil rights victory,” a program that would forgive debts such as farm loans for ranchers of color, many of whom have faced decades of discrimination.



*USDA Secretary Tom Vilsack and Rep. Theresa Fernández with tribal officials at Ohkay Owingeh Pueblo. © Seth Roffman*

## AIRPORT ROAD CORRIDOR GIVEN N.M. MAIN STREET DESIGNATION

Earth Care, a youth-empowerment and community-development organization, is helping lead the reimagining of Santa Fe's Airport Road corridor, thanks to the New Mexico MainStreet Program's approval of Earth Care's proposal to designate the road a MainStreet Urban Corridor. New Mexico MainStreet, a part of the state's Economic Development Department, is providing technical assistance for the project, which will bring together residents from neighborhoods north and south of Airport Road to reimagine and redesign the roadway and adjoining areas to support healthy, sustainable and equitable communities.

Designs for entry points at the east and west ends of the road will welcome residents and visitors to what is envisioned as a mixed commercial, residential and entertainment district. "Earth Care will follow principles of community-driven development and development without displacement," said co-director, Miguel Acosta. To participate in the effort or for more information, email [miguel@earthcarenm.org](mailto:miguel@earthcarenm.org).

Earth Care is also joining Chainbreaker, UNM Design and Planning Assistance Center, the Santa Fe Art Institute and others in community engagement efforts that highlight equity and community voices for redevelopment of the Midtown (former Santa Fe University of Art and Design/College of Santa Fe) property.

## ABQ LAUNCHES EV-READY DEALERSHIP PROGRAM

*Program aims to help dealers sell electric vehicles*

In July, the City of Albuquerque introduced its Electrified Dealer Program, which is designed to promote leasing and purchases of electric vehicles (EV). Local dealers can take advantage of specialized educational materials and training through the program. The one-hour, twice-a-year training provides an overview of the city's EV programming, EV charging and how to engage with prospective buyers.

Dealerships are required to have EV inventory and charging stations on their lots. They must also actively sell EVs and share monthly EV sales data with the city. Participants gain recognition on the city's website and co-marketing opportunities.

"We know that the future of the auto industry is electric and low-emissions vehicles, and it's important for Albuquerque to be a part of that change," said Mayor Tim Keller. "We've already installed the infrastructure for EV charging across our city and we're calling on local businesses to join us in the fight against climate change."

The Keller administration, which launched a 2021 Climate Action Plan, won a \$2.7 million federal grant to bring the first electric buses to the city, purchased the first electric vehicles for the city fleet and enacted a "Zero Emissions First" fleet vehicle adoption policy. It also invested \$300,000 in Volkswagen settlement funding to add 18 electric charging stations. For more information on the Electrified Dealership Program, visit [WWW.CABQ.GOV/SUSTAINABILITY/ALBUQUERQUE2019S-ELECTRIFIED-DEALERSHIPS](http://WWW.CABQ.GOV/SUSTAINABILITY/ALBUQUERQUE2019S-ELECTRIFIED-DEALERSHIPS).

## PRC APPROVES UTILITY ELECTRIC VEHICLE PROPOSAL

New Mexico residents drive a lot. The state had the fourth-most vehicle miles traveled in 2018, according to the Federal Highway Administration.

Transportation is a leading cause of climate-impacting greenhouse gas emissions in the U.S. President Biden wants half of the new vehicles sold in the country to be electric by 2030. Electric vehicles have substantially fewer moving parts than gasoline-powered ones and require about 30 percent less labor to manufacture, according to Ford Motors.

As major manufacturers ramp up production of zero-emission vehicles, public charging stations appearing in N.M. communities will increase accessibility to electricity as a less polluting transportation fuel. Civic, academic and business leaders across northern New Mexico have met online to discuss a comprehensive regional plan to build an electric vehicle (EV) "ecosystem." The discussion was organized by Kit Carson Electric Cooperative's CEO, Luis Reyes Jr.

The state's three investor-owned utilities are expected to spend a combined \$10 million on a public education campaign and to build charging stations that serve public areas, businesses and homes. Hundreds have already been installed within Public Service Company of New Mexico's (PNM) service territory. El Paso Electric has partnered with local dealerships and automak-



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ers to offer up to \$14,000 discounts on EV purchases. There are more than 100 independently owned charging stations in EPE's service territory.

Legislation passed in 2020 requires the state's major utilities to submit plans to make driving an EV more affordable. A plan for adding EV infrastructure was approved by the N.M. Public Regulation Commission on Sept. 22. Low-income customers may qualify for up to \$2,500 in rebates for home wiring upgrades and installation of a fast charger. PRC commissioners also approved a requirement that charging companies, in addition to using contactless readers, also have traditional credit card readers on public charging stations. Customers will be charged a per-kilowatt rate.

On Oct. 28, the N.M. Environment Department released a draft of a rule that would align with California's standards requiring a significant increase in the state's fleet of electric-battery and plug-in hybrid cars. The rule calls for light- and medium-duty EVs to represent an increasing number of manufacturers' sales of new vehicles within the state. Initially, it would require eight percent of sales by the 2026 car model year, but would rise exponentially. A public hearing on the issue will be held in May.

The N.M. Department of Transportation has applied to the Federal Highway Administration (FHWA) to designate U.S. Highway 70, between I-25 in Las Cruces and the border with Texas, as an EV-pending corridor, which will have charging stations at 50 mile intervals that are available for public use.



*Kit Carson Electric Cooperative Electric Vehicle Charging Station*



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## ZERO-EMISSION TRUCKS

The proposed Advanced Clean Trucks (ACT) rule would speed the adoption of zero-emission trucks and reduce a potent source of greenhouse gases spewed from large commercial vehicles. The rule requires manufacturers of medium- and heavy-duty vehicles to increase sales of zero-emission models over time in states where the policy is put in place.

Companies are increasingly looking to clean trucks and vans to help meet climate and pollution goals and to save on fuel and maintenance costs. Approval of the rule by state governments could help spur manufacturers. The rule has already been adopted in California and is being considered in Oregon, Washington, New Jersey, Massachusetts, New York and Colorado.

A switch to zero-emission trucks would also help reduce pollution in lower-income neighborhoods, many of which border highways, major roads and shipping centers, where residents often have health problems like asthma.

# WHAT'S GOING ON

## ALBUQUERQUE / ONLINE

**NOV. 3-5**

### REGENERATE 2021: WEAVING WATER, LAND & PEOPLE

*In-person and online*

A convening of ranchers, farmers, conservationists, land managers, scientists, health professionals, nutritionists, educators, students and others. A collaboration of the Quivira Coalition, Holistic Management Intl. and the American Grassfed Association. [HTTPS://QUIVIRACOALITION.ORG/REGENERATE-3/](https://quiviracoalition.org/regenerate-3/)

**NOV. 10-13**

### LA COSECHA DUAL LANGUAGE CONFERENCE

*In-Person and Virtual*

Educators, parents, researchers from across the U.S. build on linguistic and cultural capital to ensure equity. Speakers: Dolores Huerta, Jimmy Santiago Baca, Bryan Brayboy and Kathy Escamilla. Exhibits of products, publications, software and teaching tools. [WWW.LACOSECHACONFERENCE.ORG](http://www.lacosechaconference.org)

**NOV. 19, 5-7 PM OPENING**

### TEMPO Y TIEMPO:

#### 4 PHOTOGRAPHERS IN N.M.

*National Hispanic Cultural Center, 1701 4<sup>th</sup> St.*

Photos by Frank Blazquez, Bobby Gutiérrez, Pico del Hierro-Villa and Ximena Montez tell stories about what it is like to live in N.M. Through 7/10/22. Masks required indoors. 505-246-2613, [HTTPS://WWW.NHCCNM.ORG/](https://www.nhccnm.org/)

**THROUGH JAN. 22, 2022 (TUES.-SAT., 12-5 PM; FRI., 5-7 PM)**

### “COUNTER MAPPING”

*516 Arts, 516 Central Ave. SW*

Exhibit seeks to reclaim stories and memories of place through geography, identity, politics and the environment. Painting, sculpture, photography, video and installation. Free. 505-242-1445, [WWW.516ARTS.ORG](http://www.516arts.org)

**JUNE 21-24**

### ENERGY TRANSITION WITH ECONOMIC JUSTICE

*UNM, Albuquerque*

Annual ASES Solar Conference hosted locally by the N.M. Solar Energy Association. [INFO@NMSOLAR.ORG](mailto:INFO@NMSOLAR.ORG)

**SUNDAYS, 10 AM-2 PM**

### RAIL YARDS MARKET

*777 1<sup>st</sup> St.*

In-person and online shopping, curbside and delivery available.

**TUESDAY-SUNDAY, 9 AM-4 PM**

### INDIAN PUEBLO CULTURAL CENTER

*2401 12<sup>th</sup> St. NW*

“Gateway to the 19 Pueblos of NM” Museum galleries, exhibits, restaurant. Tickets \$10/\$8/\$7. 505-843-7270, [WWW.INDIANPUEBLO.ORG](http://www.indianpueblo.org)

## SANTA FE / ONLINE

**NOV. 1-29, 12-1 PM**

### ADVOCACY FOR THE LAND AND HER PEOPLES

*LALA Continuing Education Webinar*

“Critical Indigenous Resistance” Powerpoint presentations, film clips, review of art. Small group discussions. Presented by Inst. of American Indian Arts asst. professor, Kay Holmes. \$35. [HTTPS://IAIA.EMPOWER-XL.COM/COMMUNITY/INDEX.CFM/MAIN/CLASSLIST?FW1PK=2](https://iaia.empower-xl.com/community/index.cfm/main/classlist?FW1PK=2)

**NOV. 3, 8:30 AM-3:30 PM**

### BOYS AT RISK III

*SF Convention Center and Online*

Conference for parents, teachers and others who work with and care about helping boys thrive. SF Boys Educational Foundation. [WWW.SANTAFEBOYS.ORG](http://www.santafeboys.org)

**NOV. 3, 5:30 PM**

### TEMPLE GRANDIN, PH.D.

*SF Women's Club, 1616 Old Pecos Tr.*

Animal welfare and autism advocacy leader will speak about “Different Kinds of Minds.” Masks required. [WWW.RECONNECT-TODAY.ORG](http://www.reconnect-today.org)

**NOV. 5, 12-5:30 PM**

### DEMONSTRATION, WORKSHOPS

*State Capitol (east side)*

Focused on state and national priorities that help build resilient communities while cutting back on fossil fuel extraction. Another focus: The huge nuclear weapons buildup underway at LANL. Los Alamos Study Group: [HTTPS://WWW.LASG.ORG/LETTERS/2021/NM\\_11OCT2021.HTML](https://www.lasg.org/letters/2021/nm_11oct2021.html)

**NOV. 11, 6 PM**

### THE RED DEAL: INDIGENOUS ACTION TO SAVE OUR EARTH

*Collective Works Bookstore,*

*202 Galisteo St. and Online*

A conversation with Red Nation's Elena Ortiz and Orien Longknife. Masks required. Zoom registration: [HTTPS://US02WEB.ZOOM.US/WEBINAR/REGISTER/WNATYUJAJSTZWT9NOR7WJHW](https://us02web.zoom.us/webinar/register/wNATYUJAJSTZWT9NOR7WJHW)

**NOV. 12-14**

### 200<sup>TH</sup> ANNIVERSARY OF THE SANTA FE TRAIL

*Santa Fe and Las Vegas, N.M.*

Visit sites such as Kozlowski's Trading Post & Stagecoach Stop (Pecos Natl. Historical Park), screening of *The Road to Santa Fe* (N.M. History Museum). Gala dinner (La Fonda Hotel). [WWW.SANTAFETRIL200.ORG/CALENDAR-OF-EVENTS](http://www.santafetrail200.org/calendar-of-events)

**NOV. 12-14**

### RECYCLE SANTA FE ART FESTIVAL

*SF Convention Center, 201 W. Marcy*

Works created from discarded/repurposed materials. 11/12, 5-9 pm opening night screening of documentary on plastic waste crisis with presentations, 6-7 pm. \$5. 11/13 Festival: 9 am-5 pm; 11/14, 10 am-5 pm. 11/14: Free admission. [WWW.RECYCLESANTAFE.ORG](http://www.recyclesantafe.org)

**NOV. 16, 8:30-11:30 AM**

### THERMAL BYPASS CLASS

*EnergySmart Academy at SFCC*

Builders: Learn information needed to complete the Thermal Bypass Checklist as required by the NM Energy Conservation Code (NMECC). Sponsored by NM

Energy, Minerals and Natural Resources. Funded by the USDOE State Energy Program.

[AMANDA.HATHERLY@SFCC.EDU](mailto:AMANDA.HATHERLY@SFCC.EDU)

**NOV. 20-21**

### WINTER MARKET

*La Fonda on the Plaza*

Southwestern Association for Indian Arts, [WWW.SWAIA.ORG](http://www.swaia.org)

**NOV. 27, 9 AM-4 PM**

### HOLIDAY ART MARKET

*Wheelwright Museum*

Native American artists. Free admission. 505-982-4636, [WWW.WHEELWRIGHT.ORG](http://www.wheelwright.org)

**NOV. 30 APPLICATION DEADLINE**

### SF RIVER COMMISSION MEMBERS

The city is accepting applications for four positions for the advisory group on the management of the river, its riparian corridor and the watershed. Attend monthly meetings, 6-8 pm on the second Thursday each month. [ZRISAACSON@SANTAFENM.GOV](mailto:ZRISAACSON@SANTAFENM.GOV).

**NOVEMBER, TBA**

### WHAT CAN NON-FARMERS, NON-RANCHERS DO?

Online discussion about food & agriculture policy issues in NM. Free. [HTTPS://WWW.SLOWFOODSANTAFE.ORG/2021-FOOD-SYSTEMS-SERIES](https://www.slowfoodsantafe.org/2021-food-systems-series)

**DEC. 3, 1-9 PM; DEC. 4, 9 AM-5 PM**

### SPANISH MARKET ARTIST WINTER SHOW

*Santa María de la Paz, 11 College Ave.*

70 artists. Free admission. 505-660-8967

**DEC. 7, 9, 6-7 PM**

### WINTER WATERSHED FILMS

*Online*

Two-part series of short, solution-oriented films celebrating water and resilience. Moderated community discussions with featured land stewards and filmmakers. A fundraiser for the SF Watershed Association. By donation. [HTTPS://WWW.SANTAFEWATERSHED.ORG/](https://www.santafewatershed.org/)

**DEC. 19 SUBMISSION DEADLINE**

### CHART PROJECT: CULTURE, HISTORY, ART, RECONCILIATION AND TRUTH

The CHART process is to foster mutual understanding of shared values among individuals, organizations and groups of diverse backgrounds. SF city and county residents are invited to respond to a survey. [HTTPS://WWW.CHARTSANTAFE.COM/SURVEY](https://www.chartsantafe.com/survey)

**THROUGH JAN. 9, 2022**

### SITELAB 15: JOANNA KEANE LÓPEZ: LAND CRAFT THEATRE

*SITE Santa Fe, 1606 Paseo de Peralta*

N.M.-based artist explores boundaries between large-scale installation and adobe architecture, celebrating the legacy of the enjarradora. 505-989-1199, [WWW.SITESANTAFE.ORG](http://www.sitesantafe.org)

**FEB. 11 SUBMISSION DEADLINE**

### CALL FOR ABSTRACTS

*11<sup>TH</sup> Int'l. Conference on Earthen Architecture & Construction*

Live/online conference is tentatively planned for Sept. 23-25, 2022. [HTTPS://WWW.EARTHUSA.ORG/CALL-FOR-ABSTRACTS/](https://www.earthusa.org/call-for-abstracts/)

## THROUGH MAY 16

### KATHLEEN WALL “A PLACE IN CLAY”

*Museum of Indian Arts and Culture, 710 Cam. Lejo*  
The Jemez Pueblo artist is MIAC’s 2020-2021 Native Treasures Living Treasure. 505-476-1269, [INDIANARTSANDCULTURE.ORG/](http://INDIANARTSANDCULTURE.ORG/)

## THROUGH JUNE 16

### CLEARLY INDIGENOUS: NATIVE VISIONS REIMAGINED IN GLASS

*Museum of Indian Arts and Culture, 710 Cam. Lejo*  
Works by 30-plus artists, including Ramson Lomatewama, Preston Singletary and Adrian Wall. 505-476-1269, [INDIANARTSANDCULTURE.ORG/](http://INDIANARTSANDCULTURE.ORG/)

## THROUGH JULY 10

### EXPOSURE: NATIVE ART AND POLITICAL ECOLOGY

*IAIA Museum of Contemporary Native Arts, 108 Cathedral Pl.*  
International Indigenous artists’ responses to impacts of nuclear testing, accidents and uranium mining on Native peoples and the environment. [HTTPS://IAIA.EDU/EVENT/EXPOSURE-NATIVE-ART-AND-POLITICAL-ECOLOGY/](https://IAIA.EDU/EVENT/EXPOSURE-NATIVE-ART-AND-POLITICAL-ECOLOGY/)

## SEPT. 23–25

### EARTH USA 2022

*Scottish Rite Center*  
Eleventh International Conference on Architecture and Construction with Earthen Materials. Podium presentations, poster sessions, speaker meet & greet, tours, workshops. [WWW.EARTHUSA.ORG](http://WWW.EARTHUSA.ORG)

## THROUGH JAN. 15, 2023, 10 AM–5 PM

### #MASK: CREATIVE RESPONSES TO THE GLOBAL PANDEMIC

*Museum of International Folk Art, 706 Museum Hill*  
\$7/\$12 505-476-1200, [WWW.INTERNATIONALFOLKART.ORG](http://WWW.INTERNATIONALFOLKART.ORG)

## TUESDAYS, 9:30 AM THROUGH NOV. 23

### SF FARMERS’ MARKET TOURS

*1607 Paseo de Peralta*  
Stroll through the market with a host and talk with farmers about their crops and experiences. Over coffee/breakfast learn how the SF Farmers’ Market Institute supports small-scale farmers and the community. Register at Eventbrite.

## TUES., SAT., 8 AM–1 PM

### SANTA FE FARMERS’ MARKET

*1607 Paseo de Peralta*  
505-983-4098, [WWW.SANTAFEFARMERSMARKET.COM](http://WWW.SANTAFEFARMERSMARKET.COM)

## WEDS.–SAT., 10 AM–6 PM;

## FRI.–SAT., 10 AM–6:30 PM

### SANTA FE CHILDREN’S MUSEUM

*Interactive exhibits, play areas, weekly programs.* Masks required for ages 2 and older. \$10/\$8/\$7/\$3/one & under free. 505-989-8359, [WWW.SANTAFECHILDRENSMUSEUM.ORG](http://WWW.SANTAFECHILDRENSMUSEUM.ORG)

## THURS.–SAT., 1–4 PM,

## THROUGH AUG. 2022

### TRAILS, RAILS AND HIGHWAYS

*Museum of Spanish Colonial Art, 750 Camino Lejo*  
How trade transformed the art of Spanish N.M. \$12/\$5/under 12 free. 505-982-2226, [RESERVATIONS@SPANISHCOLONIAL.ORG](mailto:RESERVATIONS@SPANISHCOLONIAL.ORG), [WWW.SPANISHCOLONIAL.ORG](http://WWW.SPANISHCOLONIAL.ORG)

## EL RANCHO DE LAS GOLANDRINAS

*334 Los Pinos Rd., La Ciénega, N.M.*

Living history museum. 200 acres, 34 historic buildings. 505-471-2261, [WWW.GOLONDRINAS.ORG](http://WWW.GOLONDRINAS.ORG)

### SF HABITAT FOR HUMANITY

Seeking land, donated or for sale, to build affordable housing. Low-income homeowners help build homes and make mortgage payments to the nonprofit HFH. Property owners can qualify for 50% Affordable Housing tax credit through the NM Mortgage Finance Authority. 505-986-5880, ext. 109

### STATE MUSEUMS

Museum of International Folk Art (10 am–4 pm), Museum of Indian Arts and Culture (10 am–4 pm), N.M. History Museum (10 am–4:30 pm), NM Museum of Art (Tues.–Sun., 10 am–4 pm). [WWW.NEWMEXICOCULTURE.ORG/VISIT](http://WWW.NEWMEXICOCULTURE.ORG/VISIT)

## HERE & THERE / ONLINE

### OCT. 31–NOV. 12

### UN CLIMATE CHANGE CONFERENCE 2021

*Glasgow, Scotland*  
Work in support of the goals of the Paris Agreement and the UN Framework Convention on Climate Change. [HTTPS://UKCOP26.ORG](https://UKCOP26.ORG)

### NOV. 6–7, 9 AM–5 PM

### 40<sup>TH</sup> ANNUAL DIXON STUDIO TOUR

*In-person and Virtual*  
Visit Embudo Valley artists’ studios and galleries. Pick up a tour map at “Banner Walk” in the center of town. [RARE-EARTH@CYBERMESA.COM](mailto:RARE-EARTH@CYBERMESA.COM), [WWW.DIXONARTS.ORG](http://WWW.DIXONARTS.ORG)

### NOV. 8–11

### NATIONAL YOUNG FARMER COALITION CONVERGENCE CONFERENCE

Chapters and at-large network will dream up farming futures and distill those visions into actionable campaigns for equitable change. [WWW.YOUNGFARMERS.ORG/CONVERGENCE2021](http://WWW.YOUNGFARMERS.ORG/CONVERGENCE2021)

### NOV. 11–13

### BIONEERS CONFERENCE

*Virtual*  
“Emergence in an Emergency” Info/Registration: [HTTPS://CONFERENCE.BIONEERS.ORG/](https://CONFERENCE.BIONEERS.ORG/)

### NOV. 12

### N.M. PUBLIC SCHOOLS SOCIAL STUDIES STANDARDS UPDATE

Hearing/Public Comments accepted via email ([RULE.FEEDBACK@STATE.NM.US](mailto:RULE.FEEDBACK@STATE.NM.US)), letter (to John Sena, Policy Div., NMPED, 300 Don Gaspar Ave., Rm. 121, Santa Fe, N.M. 87501) or attending public hearing, 1–3 p.m., 300 Don Gaspar Ave. To read the standards, visit [HTTPS://BIT.LY/3A8UMBS](https://bit.ly/3A8UMBS)

### NOV. 14–20

### ROCK YOUR MOCS 2021

Native American and Indigenous people wear their moccasins to honor ancestors and Indigenous peoples worldwide. They add hashtag #RockYourMocs and upload to social media to create an online photo album. There are also independent events throughout the world. [WWW.ROCKYOURMOCS.ORG](http://WWW.ROCKYOURMOCS.ORG)

## THROUGH NOV. 18 (THURS., 2–4 PM)

### GRAIN SCHOOL ONLINE

Learn techniques for growing and breeding diverse grains, harvesting and recipes, history and culture of grain cultivation. [HTTPS://ROCKYMOUNTAINSEEDS.ORG/GRAIN-SCHOOL-ONLINE/](https://ROCKYMOUNTAINSEEDS.ORG/GRAIN-SCHOOL-ONLINE/)

## THROUGH NOVEMBER

### ROCKY MOUNTAIN YOUTH CORPS

[WWW.YOUTHCORPS.ORG](http://WWW.YOUTHCORPS.ORG)  
Recruiting crews ages 18–25 for conservation projects such as trail restoration, historic preservation, invasive species removal, forest fire prevention. Living stipend, education award. 575-751-1420, [WWW.YOUTHCORPS.ORG](http://WWW.YOUTHCORPS.ORG)

## FEB. 27, 2022 APPLICATION DEADLINE

### FOOD LABS ACCELERATOR

Creative Startups partnership with the City of Santa Fe for northern NM-based entrepreneurs building food companies, early- and growth-stage startups, startups expanding into new markets and businesses retooling to adapt to COVID-19. Online cohort meets Tues. and Thurs. mornings. March 14–April 22, 2022. \$175 fee, once accepted. [ALICE@CREATIVESTARTUPS.ORG](mailto:ALICE@CREATIVESTARTUPS.ORG)

## MARCH 1–3

### HIROSHIMA INTERNATIONAL CONFERENCE ON PEACE AND SUSTAINABILITY

*Hiroshima University, Japan*  
Conference will discuss the latest findings on multiple types of conflict due to social, political, economic and environmental factors. [HTTPS://WWW.IEREK.COM/EVENTS/HICPS2022#INTRODUCTION](https://WWW.IEREK.COM/EVENTS/HICPS2022#INTRODUCTION)

## MARCH 24–25

### THE GREEN SUMMIT

*San Diego, Calif. and Online*  
Leaders in renewable energy, cleantech and sustainability. Presented by [WWW.GREEN.ORG](http://WWW.GREEN.ORG)

## MAY 1, APPLICATION DEADLINE

### RURAL PATHWAY TOURISM INCUBATOR

Free service provides NM communities comprehensive technical assistance to create tourism products, and matching funding for implementation. Projects must be completed by June 30, 2022. [HTTPS://WWW.NEWMEXICO.ORG/INDUSTRY/WORK-TOGETHER/GRANTS/RURAL-PATHWAY-PROGRAM/](https://WWW.NEWMEXICO.ORG/INDUSTRY/WORK-TOGETHER/GRANTS/RURAL-PATHWAY-PROGRAM/)

## MON.–SAT., 9 AM–4 PM;

## SUN. CALL FIRST OR AFTER 3 PM

### N.M. WILDLIFE CENTER

*19 Wheat St., Española, N.M.*  
Open for self-guided tours, 505-753-9505, [JESSICA@NEWMEXICOWILDLIFECENTER.ORG](mailto:JESSICA@NEWMEXICOWILDLIFECENTER.ORG)

## THURS.–SUN, 10 AM–4 PM

### BOSQUE REDONDO MEMORIAL

*Fort Sumner, N.M.*  
“A place of suffering, a place of survival.” New exhibit examines the history of the Long Walk in the 1860s, when Diné and Mescalero Apache were forcibly marched to barren reservation in eastern N.M. Free. 575-355-2573, [WWW.BOSQUEREDONDOMEMORIAL.COM](http://WWW.BOSQUEREDONDOMEMORIAL.COM)

## N.M. 5-ACTIONS PROGRAM

Community training on addressing trauma. A self-guided roadmap for those struggling with addiction. Free. NM Crisis Line: 1-855-662-7474, [HTTPS://NM5ACTIONS.COM](https://NM5ACTIONS.COM)

# Saving water is always in season!



#ValueWater

It's the Same Water. Value It.

## Bees Trees Water

The City of Santa Fe is proud to be a Bee City USA affiliate. As such, the City is committed to supporting our pollinators and you can too! Visit [savewatersantafe.com/urban-forest](http://savewatersantafe.com/urban-forest) to get started on your waterwise pollinator garden.

Dine Waterwise Santa Fe!

Make a Reservation to Save Water!

We encourage locals and visitors alike to dine at Santa Fe's **Certified Waterwise** establishments. These restaurants are committed to reducing their water footprint in The City Different.

Visit [savewatersantafe.com/waterwise-dining](http://savewatersantafe.com/waterwise-dining) to see a list of restaurants that are **Certified Waterwise**.

[savewatersantafe.com](http://savewatersantafe.com)

Saving water means caring for our limited water supply properly that we depend on to sustain life. It is up to each one of us to use water efficiently.

## Keep an EyeOnWater use!

### Set up leak alerts



Don't wait for an unexpected high water bill before you realize you have a leak. **EyeOnWater** will let you know when there's ongoing continuous flow through your meter.

### Got a leak alert - now what?



- Check EyeOnWater to see when the leak began to help identify what is leaking.
- Check your irrigation system for cracked hoses, missing sprinkler heads, or broken timers.
- Check the toilets to see if water is leaking out of the tank through a bad flapper.
- Still no luck? Call the Water Conservation Office (WCO) at 505-955-4222

### Is your leak an expensive fix?



We understand that fixing leaks can sometimes be expensive to fix. Please call the WCO at 505-955-4222 and we will work with you to find solutions to fix leaks and save water.

**EyeOnWater** is a free water use monitoring app for City of Santa Fe water customers.

[santafem.eyeonwater.com/signup](http://santafem.eyeonwater.com/signup)



Stay informed. Follow us!

@savewatersantafe

City of Santa Fe Water Conservation

