June 26, 2018 Convening Notes:
Community Dialogue on the "Economics of Environmental Education" in New Mexico.

One question per table:

1. Mapping assets - What exists in the EE economy? What are these resources (organizations, physical, monetary, people, etc.)? Where are the gaps?

2. Mapping the values - What are the outcomes and benefits of EE Economy? What are these for students, educators and teachers, families and communities? (How do we quantify these/what are the challenges of quantifying them?) What values are missing?

3. What are the jobs and the the benefits of EE to college and career readiness?- How does EE create a stronger workforce and what are the benefits to the workforce with more EE? What jobs are missing in NM?

4. Who has most access to these assets and benefits right now (especially within the frame of equity)? Who is not receiving access to any of these assets and benefits? How can we ensure that all students in NM have access to these assets and benefits?

5. What would it mean and look like for New Mexico to be viewed as the EE leaders in the country?

Who will be there: Educators, allies, partners, friends, community members, and those who love spending time outdoors

What: The World Café model for community dialogues is a simple and effective way to engage large groups of participants in conversations that matter. This is an opportunity for the community to answer, brainstorm, unpack, and go deep on questions in five topic areas (see below) for greater impact in the environmental education sector.

Why: Despite overwhelming evidence on the benefits of environmental education for students and society, there are currently no systems or requirements in place for New Mexico's 300,000+ K-12 students to learn out-of-doors. With roughly half of our lands being comprised of public lands, there are endless opportunities for New Mexicans to explore the beautiful landscapes and rich cultures of our state. We believe that every New Mexican should have access to high quality, engaging, and meaningful

environmental education opportunities and are exploring the bigger picture to find ways to make this vision a reality.

We know that many individuals, communities, organizations, and industries contribute to and benefit from student understanding and appreciation of the natural world. Through a community dialogue on the economics of environmental education, we are seeking to explore the value and assets of education, the contribution of environmental education to college and career readiness, the role of public lands in getting outdoors, how outdoor education impacts the outdoor recreation industry, the interconnectedness of healthy land and water to local food in our communities, and how to address equity and access for students and families across our state.

For more information on the benefits of environmental education, please visit the North American Association for Environmental Education's new research database of over 1,000 research summaries and articles on the benefits of environmental education at naaee.org/eeresearch.

Report from Tables:

<u>Table 1 Mapping assets-</u>

- Using Local community as asset itself
- Phenomena - use EE as subject to relate to
- Foster dialogue in community urban and rural
- Use loud phenomena - drought/fire, economic impact focus on positive as asset

How do we create value?
What does it look like?
Intrinsic value creation
Extrinsic values
Monetary values

Ethics

<u>Top 5</u>

1. How to use the community as an asset
2. Climate change is a theme that can be used universally to relate to economy
3. How to foster dialogue rural/urban, geography, PD, leverage funding, partnerships

4. How to use local phenomena to provide educational opportunities
5. How positive what we do is. It is an asset. We are teaching about life/thriving ecosystems.

Local resources/funding of small communities
-GIS map of statewide inventory for state fair

Gaps
Municipal flood control
$$ for EE PGMS gets spent in an ad hoc way.
▼
Getting these PGMS/Partners on board

-Balancing program delivery to both urban and rural populations- mobile musea?
- Similarly, how do we maximize equity with regard to income levels in communities?

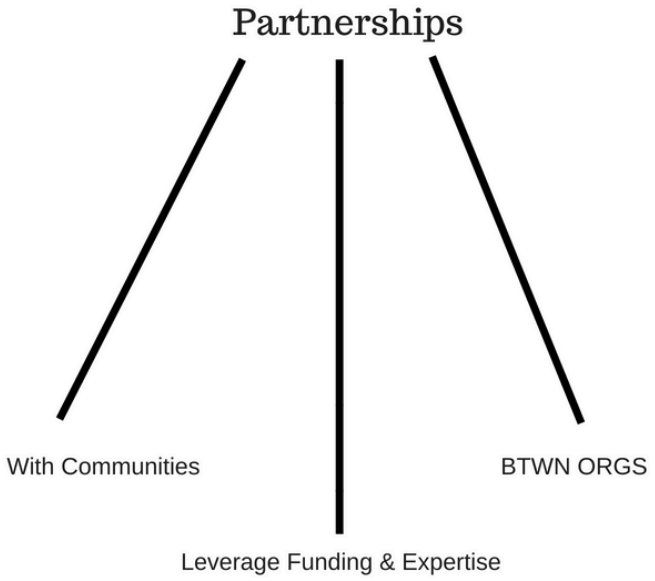
Schoolyard (Libraries? Community Centers?) as an EE.
Site - "Daylighting" hidden values in our communities.

- ★ Rainwater/Greywater Harvesting
- ★ Materials selection- roads?
- ★ Urban heat island mitigation
- ★ Habitat creation/species inventor
  *These are living laboratories over time
- Natural play/ undirected discovery
- Kinetic energy through play
  ► innovation opportunities

Community education ►work with families, not just the students.
Asset- We are teaching about life/thriving ecosystems

Integration

- Meetings
- strategic plan



Sources of Funding

- Government: Fed, State, County, Municipal
- Industry: Philanthropy, Regulation- Mandated
- Foundation

Encouraging adoption of the “Triple Bottom Line”

<u>Phenomena - climate</u>

- Drought/snowmelt
  - -People are aware but may not know what to do
- Phenology
- Economics
  - Working lands ►personal connection
  - Relevance to an “urban” kids backyard
    - Parks as educational/natural play opportunities
- Fire
- Fostering Dialogue
  - Rural/Urban

- Geography/Habitats
- Professional Development
- Leverage Funding
    - Look at partnerships with other orgs (super computer challenge) conservation robots
    - Community Foundations
    - Can EEANM help bring groups together? NMASLA ► parking day
    - State Fair

Organization	**# of Employees**	**Location**
Albuquerque BioPark	15	ABQ
Sandia Mountain Natural History	7.5	Cedar Crest
The Nature Conservancy	1.5 (mostly adults)	Rio Grande Basin (ABQ)
Manzano Day School	10	ABQ
Cottonwood Gulch Expeditions	40	Thoreau, NM
Sandia Labs	10k employees maybe 700+ env related	ABQ
USDA Forest Service-SW Region	4	NM, AZ, W OK, Tx
NM Museum of Natural History and Science	60 (E.D. 4)	ABQ
Talking Talons Youth Leadership	3	Cedar Crest
Pueblo of Acoma	Gov't :200~ (3 Environment)	Acoma Pueblo
Wild Friends	~3 1 FTE	ABQ
RMYC	20	NM (Abq & Taos)
Water Authority	5	ABQ
Nuclear Science & History Museum	20 (E.D. 5)	ABQ

Table 2 Mapping the values - What are the outcomes and benefits of EE Economy? What are these for students, educators and teachers, families and communities? (How do we quantify these/what are the challenges of quantifying them?) What values are missing?

Molly- Values/Outcomes

- EE is guiding principle/force all grades/schools/years- with intention
- Identify populations we don't associate with and how they fit in
- Abundance instead of scarcity - celebrate what we have
- Personal benefits - health

Environ Literacy- (Purple Ink)

Foundation for EE is the school system. How can EE provide for our states economy? -All students, all teachers, all years-Create sense of place stewardship. How can we make money? How to not lose money?

▼

Community becomes more resilient

Challenges to quantify

System will be specific to each community and group. Need baseline:

- Green buildings
- Solar, wind
- #recycled
- Native american environ scientists/education

Value of world is part of EE

Expressing value of abundance get away from scarcity, failure (circled) ►

Integrate EE in all grades with intention. Change conversation to positive direction " we are rich". ► Reverse concept of community with statistics publicity of positive items.

Values

Reclamation projects mining ►Expressing value of abundance get away from scarcity, failure (circled)

Expressing value of abundance get away from scarcity, failure (circled)

▼

Look for the good things in the community. Abundance is all around us- explore it and share it.

EE in Schools Now (Blue Ink)

- Focus on ELA math
- No state requirement
- PED - new reg for math and science (computer science)
- Credits► lead to higher paying jobs
- Spending time outdoors needs to come before science classes

Economic Value (Red Ink)

Educate population so land remains healthy because it is important economically.
Big population is composed of little populations with different needs and ideas.

Economy of Nature (Black Ink)

How everything affects everything else, exchange of services
Each plant and animal provides something- Interdependence

Personal Economy

- Health, wellbeing, ties to community and culture
- Happiness
  ► what other scales to consider...all the way to world economy

Triple bottom line

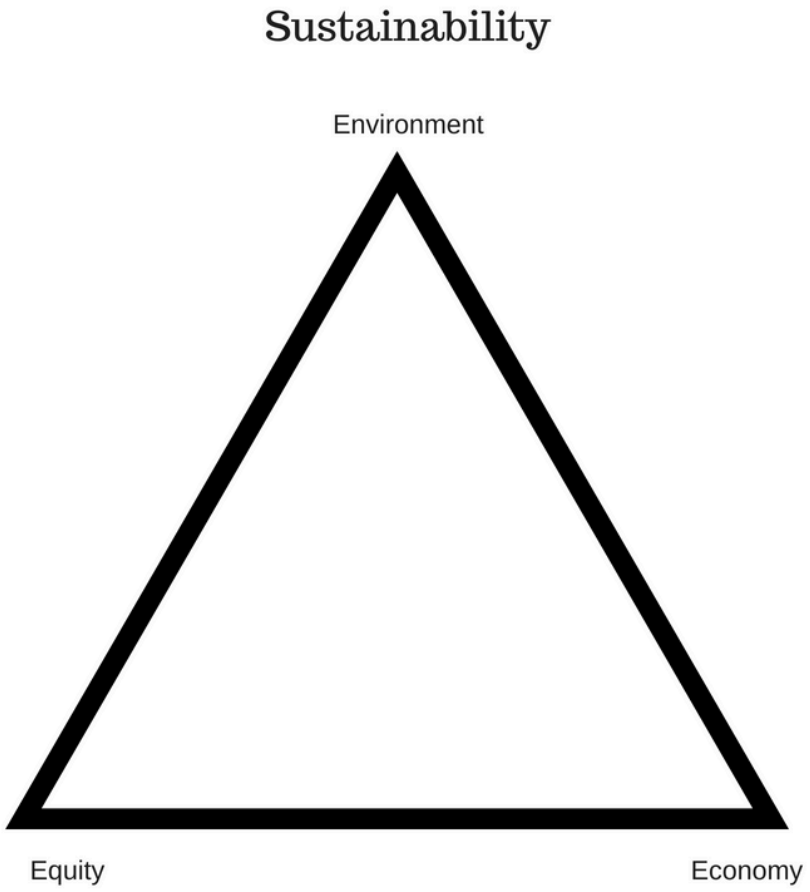
- windows/view of nature (in offices)
- Nature skills

Exposure to nature can make people better stewards of our planets.

Sense of place-
Connection to the environment (and stewardship of)
A sense of place makes it more likely to act and protect it

Equal access to parks and education - link to table 4

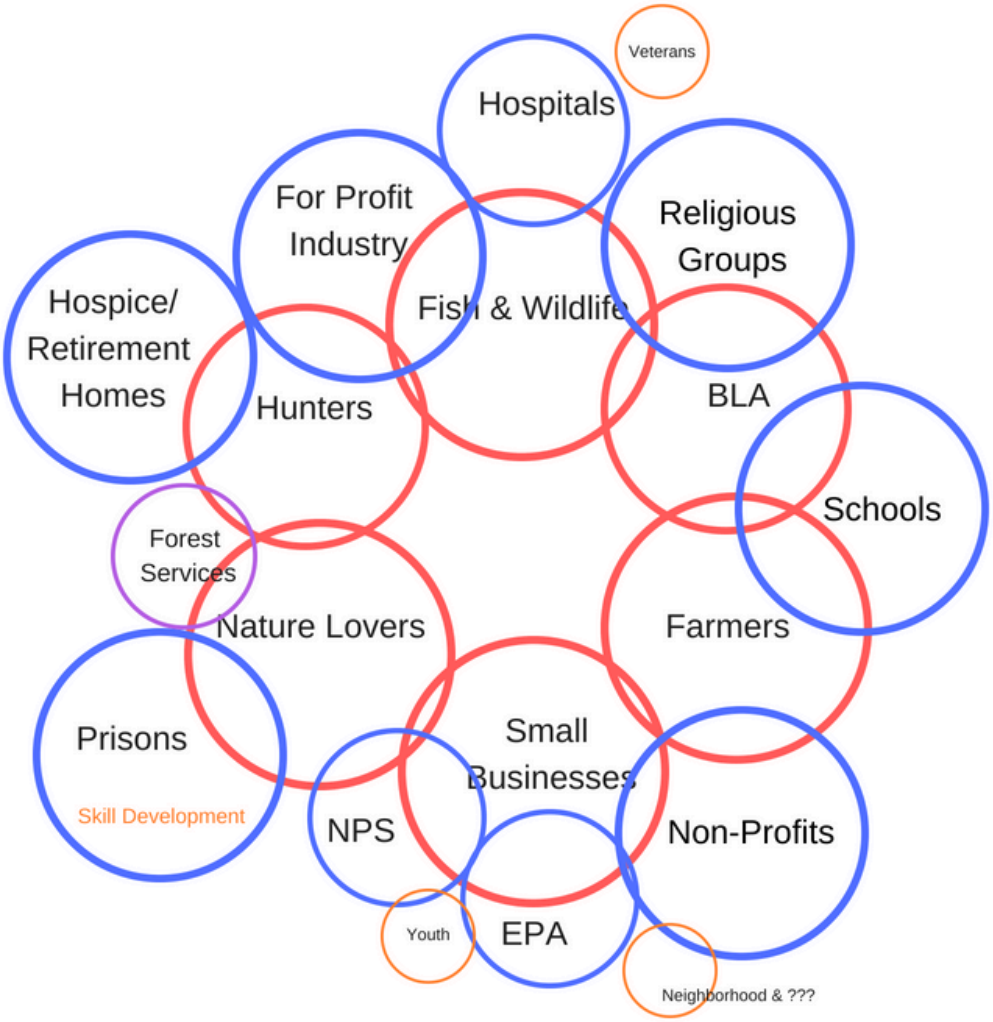
Building a stronger community by being more inclusive in stewardship activities (homeless, veterans, prisons, etc)



<u>Assets</u>
Other people's knowledge
Bridging awareness

Federal Agencies (not just BLM)

Larger Dialogue/inclusion with others viewpoints



Other perspectives ►preservation via development (transformative)
Integrate
Preserve

<u>EE as a guiding principle</u>
For all students, teachers, all grades
Leads to more sustainable practices
Reduce impact on planet

Interconnectedness of all life
Help each other and help earth
Less anthropocentric, less individual
Community perspective including not just people but animals, land etc.
Land ethic
Shift from short term to long term perspective
Empowers us to make long term decisions
Promotes health or individual and olante
People as part of whole
(Table 4)

Integrate EE in all grades with intention
Builds community resilience and personal stewardship

Shift value from money to health, happiness, wilderness.
Scarcity to abundance
Sharing resources vs competition
Stewardship all teachers, all students, all grades

Natural Resources

Long term vs short term value

- Conserving resources = more value in long term
- Using resources now = short term value

Benefits of mature EE Economy

Not just money but surplus to share. Producing for all should have plenty for all. As a job should be valued, not a scarce resource. E.g. schools cannot incorporate EE due to ELA, math. Replicate model of healthy ecology- for education and community design.

Shift from model of scarcity. How to move to abundance model.
If things are so abundant they are shareable.

Distribution of resources not equitable. Value of EE not available to students.

Outcome

Environ Literacy ►people can make informed decisions

- Empowers individuals
- Mobility tool to protect world

Emphasis on +

Focus on what's working and use EE to realize value our world holds.

What is the definition of economy? Look at the overall meaning not just financial.

Table 3 What are the jobs and the the benefits of EE to college and career readiness?-

Chen- Careers/ college

- Education is intrinsic
- Scaffolding
    - On the job
    - In schools
- Partnerships- Biz especially
- Keep talent in state
    - In state hires
- EE as job description
- Combine tech/envir/trades
- Exposure=Excitement

College/career readiness

- Create an intrinsic motivation towards career/life practices in Env. starting early, provide meaningful experiences (hands on, outside, problem solving)
- Scaffolding
  -building on experiences both in school and on the job. Gaps from school to volunteering
  - Jobs, interns, temp, seasonal. How to get to the next level, where are the opps?
- Partnerships for jobs
  - businesses involved, keeping talent in states getting our big employers to hire within the state and provide scaffolding opportunities

- Jobs! Renewable, EE in schools & providing EE training and requirements for existing jobs. Technology in env, trade jobs (green ?)
- Exposure- how do we get more kids excited about env jobs, see themselves in these roles, potential intersection of technology

- Benefits of EE on mental health
- Greater career exposure and more professionalizing of field career paths- doesn't have to be one track + show them pathways to solutions/ ways to help
- Hands-on experience makes it more tangible on real life=►create an intrinsic motivation towards career paths, start early/foundation, provide field opps! (in a box)
- Exposure to local issues and finding those solutions
- Keep them here and increase local careers!! (in a box)
- Jobs: Traveling EE.org
- Park management
- E Educators at every school
- Research positions
- EE consultants to fulfill fed requirements both ed and engineering
- Quantity and quality start-ups with multiple types of jobs (in a box)
- Renewable energy positions
- Integrating EE conscience in current jobs = more competitive in job market maintaining EE lens
- Community based farms (learn/ provide food)
- Value environment which create jobs in Env
- Incentives for hiring in state, development,scaffolding
- Change the paradigm concrete pavement
- benefits =►next gen science standards
- Practice science
- Mental health
- Problem solving skills
- More business input
- exposure/access to jobs/less term positions Next Steps! Mentors Partnerships/ Fed/state/ City/?
- Access to fellowships/new degrees
- Scaffolding in schools, with field trips, with internships/create extensions/what are we preparing them for/lucrative careers
- Scaffolding age gap opportunities
- How do we guide them where we don’t have answers
- Exposure of options- keep them in the field
- Technology- env how to focus
- Strong intrinsic motivation
- Infrastructure to support message (recycling)
- Funding maintenance of program
- Consumerism- Reduce, Innovation

Exposure
importance
seeing myself there
Understanding demand
Connecting it to possible
Use of social media
Connection to tech and environment
Job- conservation job counselor
Agriculture
Hook

How to tap into modern kids interest tech culture and create pathway and position, show them that a conservation career is exciting and relevant to them and accessible to them. Make these careers visible expose again. Help students see themselves in these roles and see these roles as vital to the health of future humanity and earth.Belong Access.
Intersection of social media and technologies to stewardship and conservation
*important to educate about why environmental work is important, everyone wants to make a difference.
Agricultural - incentive for young farmers
EE can contribute to being prepared for various jobs.
EE can contribute to college readiness by inspiring a love of learning, interdisciplinary thinking,
Where are the career counselors? How do we as a community provide, think through pathways and opportunities to grow into a career, help young people know where to go from here.

Trade jobs-renewable energy, green jobs $$ higher paying

Table 4

-Ed is place based
- Local knowledge
- Local leaders

-Integrate EE in/out of classroom
-Urban/rural exchange
-Ask comm what they want, challenges, ideas,etc
-Prof Development for all

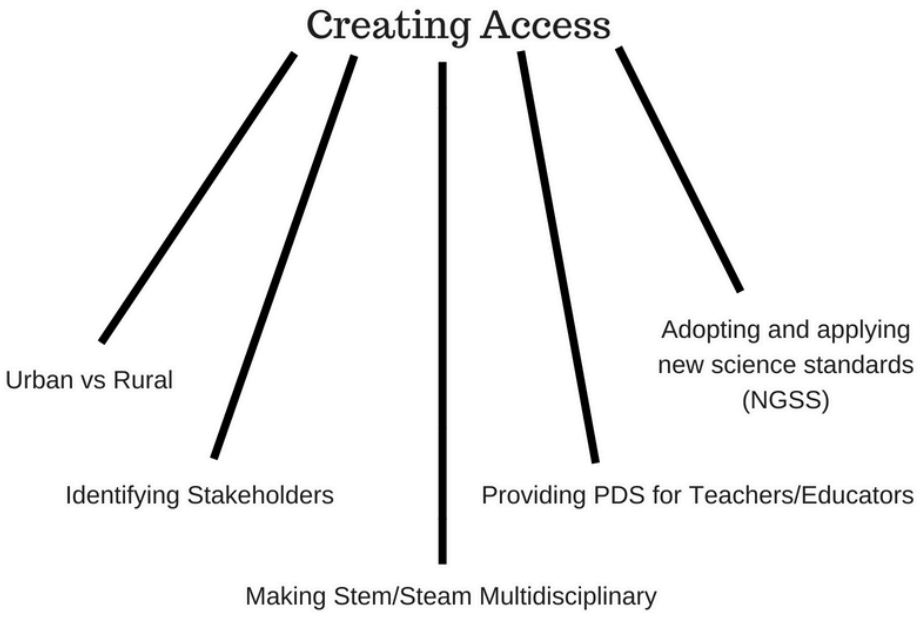
- Equity
  -special ed students- how often do they get to go outside vs non special ed students
  - require more resources?
- ability- to get on a school bus- on a field trip-teachers have enough support?
  -2 teachers per classroom? 1 teacher per 15 students
  -Teacher assistants/aids/interns
- Basic needs being met
  -Access to personal hygiene- (homeless population)- public bathrooms
  -Even students who still basic needs met
  -Food security

- Empowering communities by identifying their assets
- Equal access to EE
  - Navajo nation - large unemployment rate
  - Don't have running water/basic needs
  - Waste in canyon areas- no access to adequate waste facilities
  - Lack of education adults and youth
  - Barriers face- many only HS degree

- Assets: beautiful environment/lake/mountains
  - Cultural knowledge/how healthy ecosystems should look
  - Traditional "
  - Host an urban school ►share cultural and knowledge
  - Share stories- impactful
  - Partnerships with rural/urban

- Traditional sustainable knowledge that scientists still haven't been acknowledged. But Navajo people have a history of its success that can be shared and used!
- Education ideas
  - Helpful: shadow other teachers/collaborate
  - See example science/academic class- new ideas, new partners, learning alo new resources
  - Student: have pen pals, teachers being pen pals, ask other teachers for guidance
  - Database all teachers can access. Events coming up/FTS available
  - Lessons, webinar, trainings NAAEE.org

- Important to share cultural knowledge. Exchange of knowledge.
    - Teach community: Respect of culture.
    - Respect of land, how to live with it.
    - How to respect and live with wildlife, tradition- sustainability knowledge
- Access to Quality Science Teachers►strict political beliefs can be a barrier



How are we creating access?

- Making cultural and environmental studies synonymous
- Project based learning

What are our assets?

- Fix Pueblo/Indigenous communities- not having professional who aren't indigenous
- After school/summer programs
- Water authority, River Exchange, Sandia Mountains, programs with various grade levels

Place based

Relevant
Local knowledge
Local teachers- also non-traditional 4-H , afterschool, churches, teachers/setting
Where do we reach students/communities outside of school day?
How do we empower community members?
Supporting local communities to create programs
Be adaptable
Flexible package- (framework, template) based on science
Community dialogue - what are your values? Goals? Long term vision?
How can we make our children lives better? (opportunities)
Programming in different languages
Culturally sensitive programs
Integrated curriculum - not just science
Coaching people - in community- to provide EE
What are the benefits?
TFA type program for EE

Table 5 What would it mean and look like for New Mexico to be viewed as the EE leaders in the country?

- Where are we leaders already
- Cultural knowledge
- EE values are identity and pride
- policy/infrastructure to support EE
- Scaffolding across grades/comm
- Power of individuals

Improved teacher professional/development/resources/ in all disciplines increase salaries!
Opportunity to widen “EE Net” & be national voice on how to engage everyone and embrace diversity.

- Encourage diverse leaders from many cultures (Native & hispanic traditions)
- Build access to political power and financial resources (EPA)
- Mentorship program for students who want to get into natural resources and provide resources for students
- Well- trained environmental workforce all careers/jobs have ee knowledge and skills
- Trade jobs- high paying- don’t have college degrees

- NM demonstrate value of EE
- Mentor young students to be environmental leaders
- Support infrastructure in schools (i.e. recycling, energy/water conservation)
- Environmental education curriculum for K-12 schools
- Integrate EE into math, science, literacy, reading, social studies, art, etc.
- Co-management of public lands, leading the way of how different entities can work together to restore or preserve a landscape
- Eco-systems approach
- Scaffolded programming across grades as as well as across programs providers. Programs are not redundant but build unto each other and build on each other.

NM Leader in EE in Country

- We already have public land as asset
- We already have wonderful natural resources
- As a natural leader we would be using a higher % of sustainable energy as our energy source
- So much possibility to educate with such great wilderness
- If we could harness all of our cultures perspective, we could be as strong leader
- Creating strong partnerships between cultures and then sharing knowledge about water and the significance of it.
- Pay heed to the oil and gas revenue to nuclear use
- We can be a leader in renewable energy
- Definition of Environmental Energy
    - What are some branches or specialities of environmental education
    - EE in hunter and rancher communities

What countries/states are already leaders?
Part of the identity and pride of NM- more than just the knowledge (in an box)
Policy and infrastructure encourage EE values
People will want to stay in NM

Environmental regulations?
CA's model
How this impacts industries

-Recycling
-Cleaning up dog poop
-renewable energy

-Community garden
- H20 conservation

Zoning laws which enforce/promote sustainable practices
Rebate programs
Elected officials have EE values
Value placed on education and teachers

State partnership with agencies that professionals and specialists in natural and cultural resources. Someone new and passionate talk about their field is very impactful to children.
Focusing on the strengths and concerns of New Mexico, place based topics (i.e.solar energy, public lands, water resources, fire ecology,) where NM could lead.

New Mexico is last place - crime-education-etc.

- Viewed as leaders + EE- such a big turn around. Let's give it a chance.
- More done to preserve land and resources
- Native american history and culture
- Solved the water crisis in NM.Get everyone on board.
- Problems with water rights- Native Cultures - reconnecting with cultural roots
- If we were leaders: all our kids would have access be related to - be stewards of all wild nature spaces in NM and same with their families.
- EE embedded in school systems
- Putting a leading person of EE with similar agenda in each district.
- Provide integrate EE in math. Quantify energy, use and savings.
- District person sending money/funds to teachers for projects to help students make connections to the earth, inspiration, love.
- Teachers need funds for materials to every school. No less/more/etc. Equal.
- Strengths of resources near schools used and shared.
- EE Cultural Wisdom
- Wisdom of the Aquecia Associations
- Protecting our land. WIlderness/forests/building denser city and town and preserve wild/nature spaces that we have.
- Money to fund good educators

-Rural population is an asset. They are sometimes more aware of the environment. How to support urban population? Bosque and parks not just wilderness.
-New Mexico students are measured as proficient on EE standards.

-Environmental Justice
-constituents would have tools to navigate their own fates in regards to natural world.
-Overcome exploitation of indigenous people.

New Mexico True - tie to tourism- use images of outdoor learning
Sustainable salaries/livable wage to keep EE professionals in their jobs

A united EE community , well connected while maintaining our individual identities .
*Bigger than EE community**

Producers, Ag extension, soil and water conservation districts- all of us seeing ourselves as part of the EE community.

EE is viewed as a non-partisan issue.

*Shared understanding and appreciation of NM's unique phenomena e.g. night skies and people. *neighborhoods =►community grassroots organizations
EE mentors for natural resource careers

What if...the EE community condensed their vision of how NM could be a leader in EE, what would that look like, why it's important and then make a youtube video with this message showing positive examples of innovation and grassroots actions address many different groups and communities and unifying them with the message and NM Pride. Then start a campaign to get every person in NM to see the video and invite them to send ideas and thoughts to an email address how the group is connected. The idea is to make this goal visible for everyone not just EE people. Get it in front of everyone's eyes and invite them to be involved.

Leader Notes:
Group 1
Private vs Public Schools
School standards- steam
-Limited resources
Rural vs Urban
-Funding of teachers

- Integrated vs split up type curriculum - more theme, place based that lend well to EE
- Student led learning is also great
- Professional development
- Integrating culture and technology into new curriculum
- Asset qualified env scientists/experts represented in pueblos.

Economics vs education

Project based learning
How do we create access

Group 2
Rural - sometimes have more access to nature- asset because closer to nature despite lack of resources

- Making local resources more intentional and valued.
- One size doesn't fit all. Rural and urban should be different in different communities
- Make education place based and relevant build on local knowledge. How to empower.
- Teacher come from local communities should be cultivated.
- Build an existing asset and resources ora community and design programs that reflect the values/issues of the community.
- Don’t create programs to bring to places, support communities to create their own programs.
- Engaging communities in what their values are common ground questions
- bilingual/multilingual curriculum. Water authority has spanish field guide online.
- Multidisciplinary - train folks in rural communities in schools- cultivate environmental educators
- Teach for america
- Create a school district person

Group 3
Imparting scientifics knowledge paired with cultural values

- Cultivate an appreciation for the environment
- Ecological literacy needs to be incorporated
- How do you know what you don't know

- Breakdown seems to be with the school district in having teachers provide EE. Same teachers cannot bring class outside.
- Traveling EE organized.
- Reading in the content area
- Integrate EE in all subject matters, daily life. Take it out if the classroom too.
- EE should be a community effort.
- Needs to be directed for integrating EE in the classroom to the whole community of environmental educators.
- Place based bringing more awareness of native traditions, lands to general public.
- Mindful actions emphasize in daily life.

Group 4
Equity - special ed students are left out of the picture.

- Mobility issues should be considered but need more support.
- Big challenges for schools- 1 field trip a year. Teachers are overwhelmed, class size too big.
- Homeless population
    - Public showers
    - Human decency
    - Basic needs being met
- Urban and rural exchange
- Sharing Stories
- Partnerships between urban and rural
- Professional development
    - Tour facilities
    - Class observations
    - Share lessons
- Sandia labs and other site visits
- Database for EE
- Exchange of knowledge
- Cultural respect
- Cannot just be 1 person doing EE

Group 5
Feeling of belonging very important. Seeing people in your community who look like you. Modeling EE.

- Foundational route in EE common way of life.
- Ask- what do communities want? Understanding local challenges /ideas.
- Remove stereotypes of who is an environmentalist- we all belong to the earth.
- EE should be a requirement for pre-service teachers.
- Access for teachers to get EE.
- Travel trailer
- Company can promote EE ideas too.
- Native landscape in school grounds native natural playground

Colorado Dept of Education has an Environmental Education Plan. Perhaps this can be a model for NM. https://www.cde.state.co.us/cosocialstudies/ceep