



# A Spirit of Collaboration: Energy, Community and Education

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LeAnne Gandy  
Superintendent, Lovington Municipal Schools



# Education is Key

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Public education is the single greatest factor in evaluating a location change, and it's equally important to families living in the Permian Basin. Children in school today will be joining the workforce of tomorrow and quality education is critical for success. Our schools must have the resources to provide the next generation with access to highly qualified teachers and a robust curriculum.

# Rural Challenges

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- Broadband Access (not related to poverty)
- Limited career exploration opportunities
- High student mobility, due to economic shifts, results in significant impact to school funding.
- Educator shortage
- Childcare needs

# New Mexico Education Funding

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- The Land Grant Permanent Fund is sourced through revenues collected from 13 million acres of public land that were granted to the state by the Ferguson Act of 1898
- The LGPF is estimated to be \$24.5 billion. Most of the money comes from oil and gas extraction as well as mining and logging
- 5% of LGPF annual earnings, \$126.9 million, are distributed to New Mexico schools

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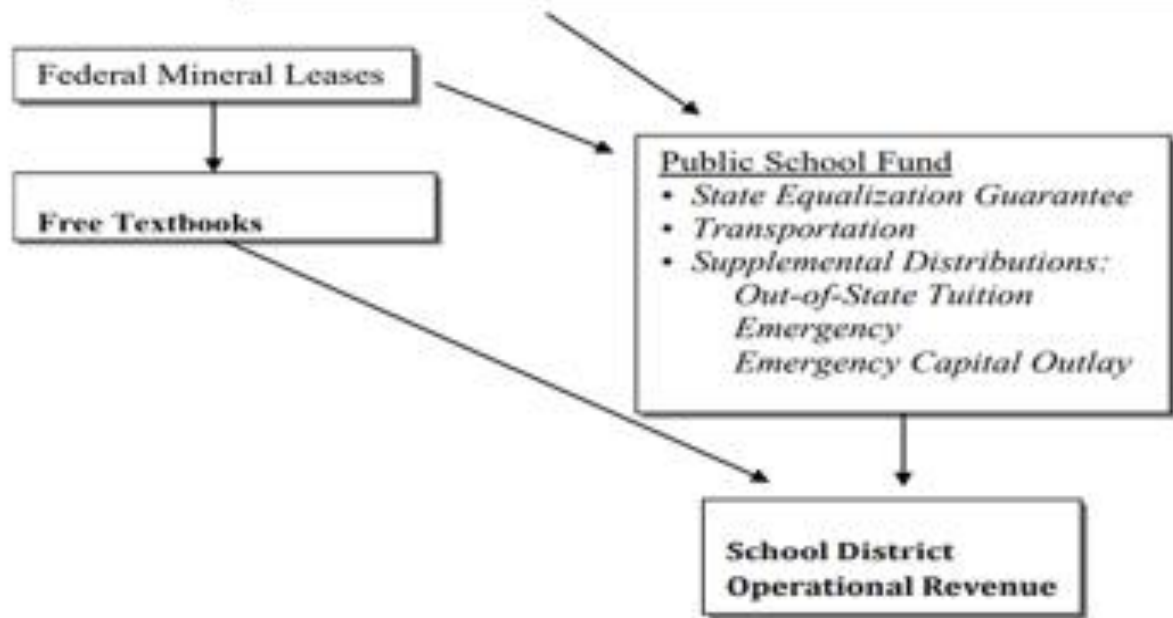


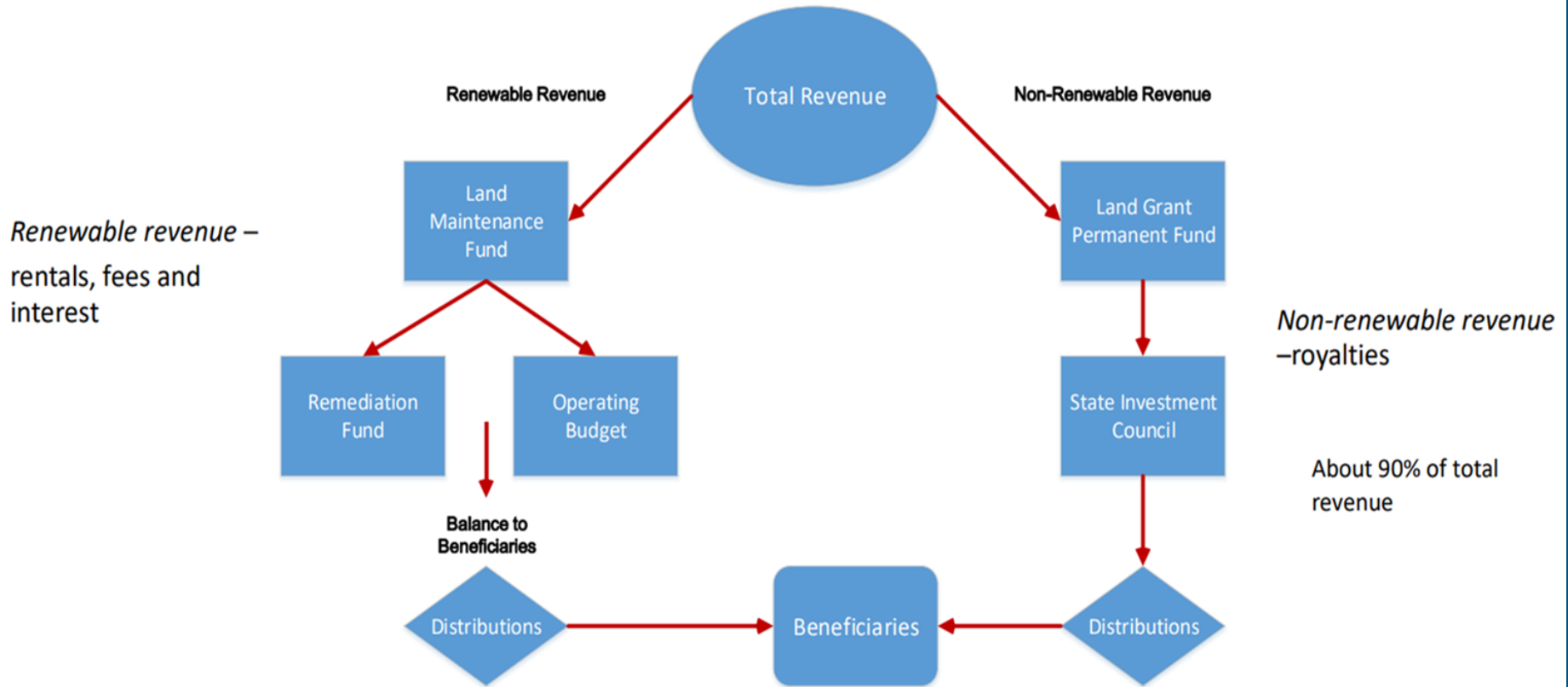
General Fund Revenue

- *General and Gross Receipts Tax*
- *Income Tax*
- *Interest Earnings*
- *Rent & Royalties*
- *Severance Taxes*
- *License Fees*

Current School Fund

- *Earnings on Invested Permanent School Fund*
- *Land Income*





# Permian Strategic Partnership

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- A collaboration between local communities and oil and gas companies (17) operating in the Permian Basin
- Partnering with local school districts and educators to advance the quality of public education across the Permian Basin
- Expand and strengthen teacher talent available to Permian public school students
- Respond to unique challenges to build better educational capacity
- Provide networking opportunities for school districts

# Teacher Investments - PSP

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- Research shows that student performance rises with teacher experience and quality and declines with high teacher turnover and inconsistent leadership
- Partnering with the New Mexico National Board Certified Teacher (NBCT) Network
- Grants provide funding and support for teachers to pursue National Board Certification
- Meaningful professional learning opportunities
- Improved teaching practice ensures positive impacts on student learning

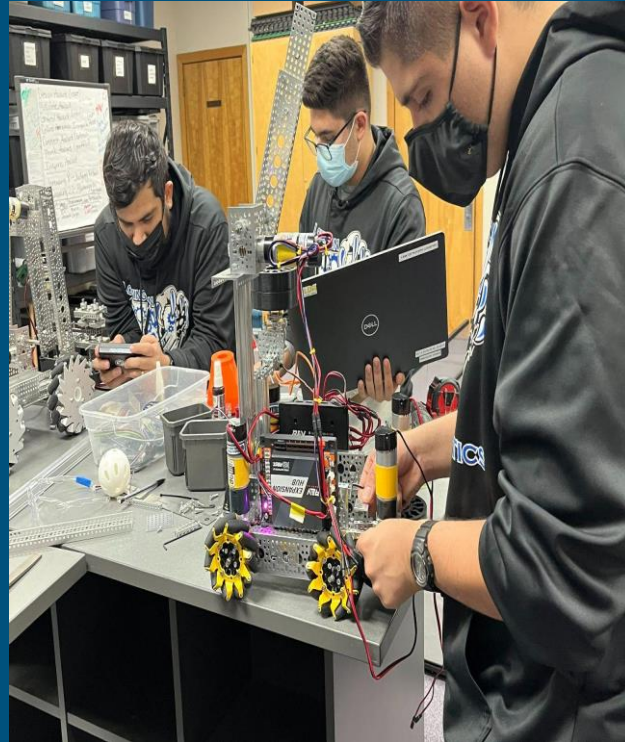


# Robotics

HF Sinclair - substantial monetary and human capital support for grades 7-12

- Summer engineering camp
- Equipment
  - Laptops with Python CAD software
  - Virtual reality Z-Space computers
  - 3-D printers
  - Computer Numerical Control Machine (CNC)
  - Storage building for STEM equipment
- Moral Support
  - Representative attends events and competitions (Debbie Rowland)
  - Experiential learning opportunities

# Investing in the future of rural communities



# Aerospace Engineering/Rocketry

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- SystemsGo - innovative high school rocketry/aeroscience curriculum
- Project-based learning to teach STEM, develop skills in teamwork, problem-solving and leadership
- Encourage careers in the engineering industries
- Students design and develop unmanned aerial vehicles
  - 1:1 rockets - 1 pound payload traveling 1 mile
  - Transonic rockets - break the speed of sound
  - Ultimately launch vehicles at White Sands Missile Range
- Rocket launch rails built by Ag Mechanics students

# Investing in the future of rural communities

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“When faced with choosing my schedule for junior year, I took a bit of a chance in taking an engineering course. As it turned out, that course would be one of the inaugural SystemsGo chapters for New Mexico. Through my experiences with the program, I learned a great deal about teamwork, problem solving, and even failure. It was a great struggle at times, building a high powered rocket with only a vague concept of calculus application and no physics experience amongst the group. What it did teach me; however, is that through exposure comes discovery. I’ll be graduating in two weeks from Rice University with a degree that is far from engineering. Engineering wasn’t for me; however, SystemsGo gave me invaluable team leadership experience that I would later realize informed my eventual career path. I wouldn’t have ever been able to hone in on strengths and uncover weaknesses if Systems Go did not exist and expose students to a field they wouldn’t have otherwise engaged with. I also wouldn’t have come to realize that a true engineer lies within every rural kid who grew up helping their dad and not necessarily in every kid who is good at calculus in isolation.”

-Makayla Franco - Lovington Graduate

# Cal Ripken STEM Lab

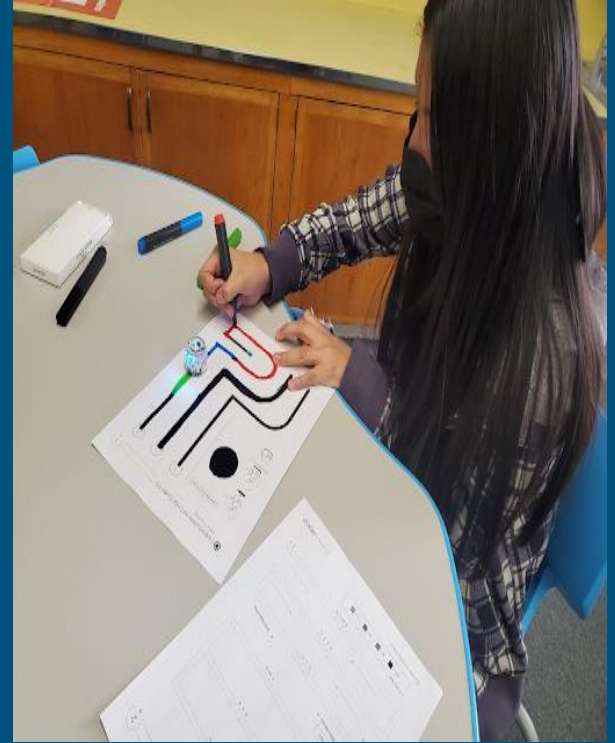
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Through generous financial contribution from Conoco Phillips and organizational support from Devon Energy, Yarbrow Elementary, which serves Lovington students in grades 4 & 5, received a Cal Ripken STEM Lab, in the 2021-2022 School year.

- Mobile Lab with 3D Printer
- Ozobots
- Coding with Chromebooks
- Teacher onboarding and professional development for use of the lab

# Investing in the future of rural communities

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# Student Impact

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“I think it's fun and the activities are so cool.  
It's a great learning experience!”

Lexi Lamb, 5th Grader Cal Ripken STEM Lab



# Sustainable Agriculture/Greenhouse

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## Lea County Commissioners and Chevron

- Hands-on STEM-focused greenhouse.
- Varied growing conditions Hydroponics and Aquaponics, and traditional soil.
- Scientific data collection and analysis captured in research journals with emphasis on growth conditions, lighting and nutrients.
- Education and industry partnership connects learning to careers.

## Greenhouse Expansion - Randy Pettigrew, NM State Representative

- Planned for 2022-23

# Investing in the future of rural communities

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# Virtual Reality/Augmented Reality

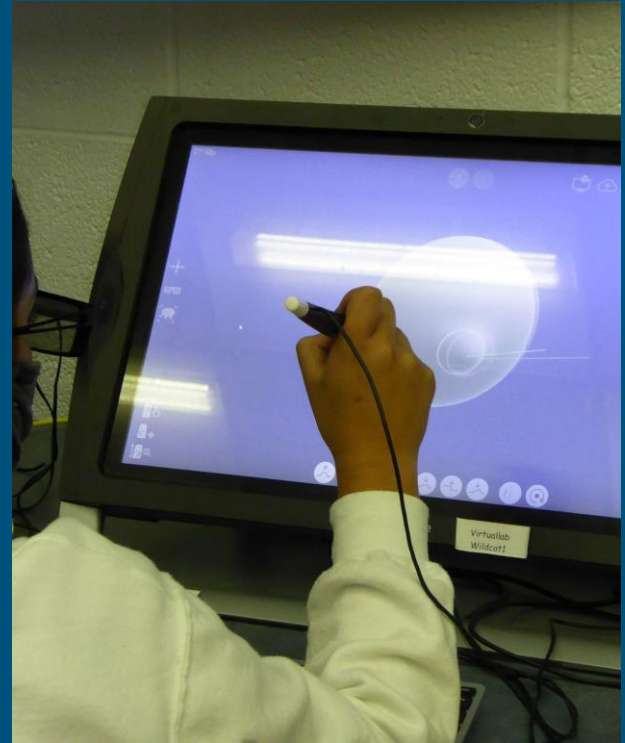
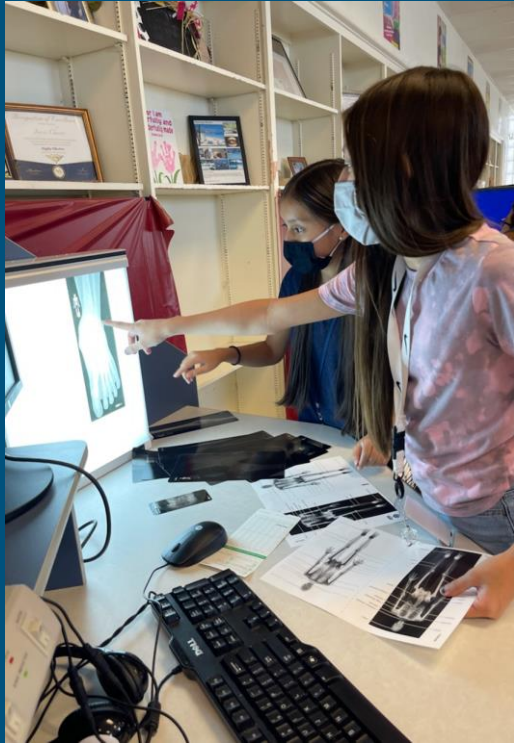
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## Z-Space VR/AR - Chevron

- Lessons across multiple disciplines
- Augments and expands classroom learning
- Provides experiential learning opportunities that would otherwise be too dangerous, impossible or expensive for the traditional classroom

# Virtual Reality/Augmented Reality

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# Additional STEM Opportunities

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- Science Olympiad

“I have participated in Science Olympiad for seven years. It is my favorite extracurricular activity. It is in the lab where I feel my most ‘self’. The SciOly awards ceremonies are unmatched. There is nothing better than cheering on my fellow Science Olympians. My favorite aspect of this activity is the inclusiveness. Everyone is welcome.”

—  
-Brooklyn Arreola, 2022 LHS Graduate

- Science Fair
- Inter-Disciplinary project based, standards-based science units grades K-5

# CTE Advanced Courses

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- Drones
- Coding
- Automation
- Instrumentation and Technology
- Technical Drawing
- Mass Media Production
- 3D Animation
- Biodiesel

# Student Impacts

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## Former robotics team members

- 4 students pursuing engineering degrees at NM Tech
- 3 students pursuing STEM degrees at NMSU (Computer engineering, biology, medical)
- 1 student pursuing engineering degree at Texas A&M
- 1 student attending nursing program at NMJC/UNM
- 1 student pursuing microbiology degree at Stanford

Students participate in experiential learning opportunities that inform future career options

# Educational Impacts

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“Being a member of the Lovington Robotics Team has allowed me to grow not only as a person but as a leader. Being there for my teammates when they needed me, passing down my knowledge and leading our team in discussions are a few examples. My public speaking skills have increased by being with the team. I used to be shy and dreaded speaking in front of a group of people. This simply cannot happen when our team gives multiple presentations a year. Talking in those presentations, leading team discussions, and socializing with other teams at the competition have changed the way I view public speaking.”

-Daniel Guzman, NM Tech Engineering Major



# Educational Impact

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“Robotics has prepared me to be a team leader and a team member. I learned skills from speaking in public to learning how to write a detailed engineering notebook.”

-Ashley Hein, Texas A & M Engineering Major

# Educational Impacts

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“Being a member of the Lovington RoboCats has been one of the most meaningful experiences in my life. I have learned many valuable skills such as social interaction, Microsoft Word, Publisher and PowerPoint. Working alongside some wonderful people has shaped me into the person that I am today and I am grateful for that. I have thought a lot about what I want to do in the future and although I am not choosing engineering, I am likely choosing science. STEM opportunities like robotics broadens horizons for all of us members and I will go forward with my precious memories in mind.”

-Julie Collis, LHS 2022 Graduate–will attend NMSU and pursue a biology degree

# Partnership Opportunities

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- Job shadowing
- Mentoring
- Internships
- Site tours
- Professional presence
- Classroom presentations



**It is amazing what you can  
accomplish if you do not care who  
gets the credit.**

**Harry S Truman**