

# Analysis of Brownfield Cleanup Alternatives

Brother Gerard Stokes Municipal Pool  
92 South Main Street  
Pecos, New Mexico 87552



September 2024  
Brownfields Agreement:  
4W-02F24801

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# Acronyms

ABCA	Analysis of Brownfield Cleanup and Alternatives
ACM	asbestos-containing material
AHERA	Asbestos Hazard Emergency Response Act
APE	Area of Potential Effects
CFR	Code of Federal Regulations
ESA	Environmental Site Assessments
f/cc	fibers per cubic centimeter
HUD	The Department of Housing and Urban Development
LBP	lead-based paint
LCP	lead-containing paint
MAP	Model Accreditation Plan
NESHAP	National Emission Standard for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NIOSH	National Institute of Occupational Safety and Health
NMED	New Mexico Environment Department
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
PPE	Personal Protective Equipment
RBM	Regulated Building Materials
RCRA	Resource Conservation and Recovery Act
REC	recognized environmental condition
RRP	Renovation, Repair and Painting Program
SHPO	State Historic Preservation Officer
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service

# 1.0 Introduction

This Analysis of Brownfield Cleanup and Alternatives (ABCA) report has been prepared for the New Mexico Environment Department (NMED) to evaluate options for the cleanup of asbestos contamination at the old Brother Gerard Stokes Municipal Pool Site located at 92 South Main Street in Pecos, San Miguel County, New Mexico 87552 (herein referred to as “Site”). The cleanup will be funded by the NMED Brownfields Program through U.S. Environmental Protection Agency agreement 4W-02F2480, also known as the NMED 128(a) Infrastructure Grant.

This ABCA report includes the following:

- A summary of the Site background and the future use of the property;
- A description of the previous environmental investigations and their findings, including the Phase I and Phase II Environmental Site Assessments (ESAs);
- Summary of applicable laws and regulations;
- Analysis of potential remediation alternatives for cleanup of the Site including consideration of effectiveness, implementability, and cost; and
- Description of the selected alternative.

## 2.0 Background

### 2.1 Site Location and Description

The Site is located in Pecos, NM, which is southeast of Sante Fe. The Site occupies approximately 1.7 acres and is comprised of the following buildings:

- Outdoor pool and associated locker room/pool equipment building.
- Maintenance building, along with tennis courts and public works equipment storage.
- Pool building

Pecos Municipal Pool was built in 1975 with additional construction occurring in 1992 and 2005. Further descriptions of the subject properties can be found below in **Table 1**.

**Table 1: Subject Properties Summary**

Building Name	Description	Paint Summary	ACM Summary
Main building and outdoor pool	One-story structure. Exterior: Stucco and wood, plaster roofing Interior: Concrete flooring, plaster ceiling, plaster and wood walls	LBP not detected	ACM detected transite piping
Mechanical building	One-story structure. Exterior: Stucco and wood, tar roofing Interior: Plaster and wood walls, concrete flooring	LBP not detected	ACM detected Roofing paper with tar.

The area surrounding the Site is lightly developed as primarily residential to the north, west, and south and commercial to the east. The location of the Site is depicted in **Figure 1**.

The Site is positioned in the Santa Fe National Forest area, at the foothills of the Sangre de Cristo Mountains. Surface water on the property appears to drain generally eastward.

### 2.2 Previous Site Uses

The known and current uses of the Site, based on the review of available records, are as follows:

- 1975: Main building and pool were constructed.

- 1981: Pool established.
- 1992: Further development on property and expansion of main building.
- 2005: Addition of two buildings to the property south of the pool and original building.
- 2018 to current: Further developed with a fountain north of the main building and property paved for parking. The subject property is currently used for municipal vehicle maintenance and storage.

## 2.3 Site Assessment Findings

The following environmental investigations have been completed for this Site and its adjacent properties:

- **Phase I ESA**
  - Souder, Miller & Associates (SMA) December 2020. Phase I ESA, Pecos Municipal Pool, Pecos, New Mexico.
- **Phase II ESA including Asbestos & Lead Based Paint Survey and Soil Sampling**
  - Souder, Miller & Associates (SMA), February 2024. Phase II ESA including ACM/LBP Survey and Soil Sampling, Village of Pecos Swimming Pool Site, Pecos, New Mexico.

These previous environmental investigations are further described in the following sections.

### 2.3.1 Phase I ESA

The Phase I ESA Report was prepared by Souder, Miller & Associates (December 2020) and was funded by the NMED Brownfields Program as a Targeted Brownfields Assessment through 128(a) grant funding. The investigation revealed one recognized environmental condition (RECs) in connection with the Site. This REC was soil staining at an above ground storage tank which was found on the Site during the Phase I investigation. The report also identified the potential presence of ACM as a Business Environmental Risk.

### 2.3.2 Phase II ESA – ACM and LBP Survey and Soil Sampling

The Phase II ESA Report was also prepared by Souder, Miller & Associates (February 2024) and was funded by the NMED Brownfields Program as a Targeted Brownfields Assessment through 128(a) grant funding. The Phase II ESA included an ACM and LBP survey at the Site and a limited soil sampling investigation (February 2024). The scope of work and results of each of these investigations are summarized below in **Table 2**.

**Table 2: Previous Investigations Summary**

Investigation	Scope of Work	Results
<b>Phase II ESA including ACM &amp; LBP Survey and Soil Investigation</b>	Performed an asbestos and lead paint Survey to identify ACM and LBP/LCP within building materials located within the interior and exterior of the buildings.	ACMs defined by USEPA and Occupational Safety and Health Administration (OSHA) as materials containing greater than 1% asbestos were identified in the main building and mechanical building/pool. ACMs identified include transite piping and roofing paper with tar. LBP defined by USEPA as a paint containing 1.0 mg/cm <sup>2</sup> or greater concentration of lead and LCP defined by OSHA as paint containing any detectable amount of lead, <b>were not detected on site.</b>
	Advanced five soil borings near the above ground storage tanks and vehicle maintenance area and analyzed soil for volatile organic compounds and petroleum hydrocarbons.	The Phase II ESA did not identify evidence of impacts to onsite surface or near surface soils.

The investigations listed above found that asbestos is present in amounts regulated by applicable USEPA, Federal OSHA, and state and local regulations in the subject properties. The following regulations apply to the site buildings:

- OSHA Standard 29 Code of Federal Regulations (CFR) 1910.1001 Asbestos in General Industry and 1926.1101 Asbestos in Construction
- USEPA National Emission Standard for Hazardous Air Pollutants (NESHAP) 40 CFR 61, Subparts A and M

## 2.4 Project Goal

On March 20, 2024, the NMED and the Kansas State University – Technical assistance to Brownfields (KSU TAB) hosted a public meeting to gain an understanding of what the community envisioned for the future use of the Site. The community showed an interest in turning the Site into a multipurpose community center. The ACM cleanup and containment activities to be performed under this grant are critical steps in advancing the Site cleanup for rehabilitation and re-use. Community meeting notes can be found in **Appendix A**.

## 3.0 Cleanup Goals and Objectives

### 3.1 Cleanup Oversight Responsibility

The primary contaminant to be addressed under this grant is asbestos. The responsible regulatory entities that regulate asbestos cleanup include USEPA, and Federal OSHA. The project will be overseen by the NMED Brownfields Program. Documents prepared for this site will be submitted to the applicable agencies, and work will be performed by appropriately licensed contractors following applicable regulations and abatement design documents. NMED and its qualified environmental consultant will coordinate clearance activities with the selected contractor including visual inspections, air monitoring, and wipe sampling.

ACM cleanup general approaches are summarized in the following **Table 3**.

**Table 3: General Asbestos Removal Procedures**

Asbestos		
Building Material	OSHA Class and NESHAP Category	Summarized Procedures
Transite piping	Class II/Cat. I Non-friable ACM	Asbestos regulated area (demarcation signs and asbestos warning tape), certified workers, critical barriers, wet removal methods, prompt disposal, pre-abatement and clearance air monitoring.
Roofing paper with tar	Class II/Cat. I Non-friable ACM	Asbestos regulated area (demarcation signs and asbestos warning tape), certified workers, critical barriers, wet removal methods, prompt disposal, outdoor work so does not require pre-abatement or clearance air monitoring.

### 3.2 Exposure Pathways

Exposure pathways are the different routes in which a person may come in contact with hazardous substances. Potential exposure pathways include inhalation, ingestion, dermal contact, and (less common) injection. At the Site, the primary exposure paths for ACM are inhalation and dermal contact. To mitigate the risk of exposure, effective remedial strategies, such as those outlined in the cleanup alternatives, are important to implement. The following sections further describe the primary exposure pathways for ACM.

#### 3.2.1 ACM Primary Pathway of Concern

Asbestos is a naturally occurring mineral fiber found in rock and soil, which due to its strength and heat resistance, has been used in a variety of building construction materials including for insulation and as a fire retardant. Exposure, in particular prolonged exposure, may lead to health risks including chronic lung disease and lung cancer. The primary exposure pathways for asbestos identified on Site include inhalation and dermal contact. Inhalation occurs when airborne asbestos fibers are disturbed, such as during renovation, or with the degradation of materials. Dermal exposure occurs when a person directly contacts ACM which may be from touching contaminated surfaces or from handling ACM during maintenance (without proper personal protective equipment [PPE]).

As asbestos was detected on the Mechanical Building roofing and Main Building Piping, the primary risk of inhalation is limited to those who enter the Site as it undergoes remediation.

## 3.3 Cleanup Standards Asbestos

The primary contaminant to be addressed (asbestos) has multiple post-abatement and cleanup standards and guidelines. During the abatement and cleanup design development, NMED and its qualified environmental consultant will identify the applicable regulatory standards for re-occupancy, and where there is not an applicable standard, NMED and its qualified environmental consultant will detail the recommended cleanup levels for this site.

### 3.3.1 Asbestos Abatement

An asbestos regulated work area is cleared when airborne fiber levels are at or below 0.1 fibers per cubic centimeter (f/cc) or pre-abatement levels, whichever are lower. The steps to verify abatement has been complete are as follows:

- For asbestos removal, each work area will have a visual inspection performed to verify that no ACM, dust, or debris remains. This inspection is typically performed by the abatement contractor's onsite competent person and a third-party inspector.
- Once the visual inspection is successfully completed in a work area, clearance air sampling will be performed as required by OSHA. The air samples will be collected and analyzed according to the National Institute of Occupational Safety and Health (NIOSH) Method 7400 and analyzed by properly accredited laboratories or analysts.
- Typically, each work area's clearance activities are documented on a form that is signed by inspection personnel and the owner's representative.

Clearance air sampling is not required for asbestos outdoor work and a visual inspection conducted as outlined above is performed and documented.

A report documenting the abatement will be submitted to NMED summarizing the work with field notes, photos, and other relevant documentation.

## 3.4 Laws & Regulations Applicable to the Cleanup

Laws and regulations that are applicable to this cleanup include the Federal Small Business Liability Relief and Brownfields Revitalization Act, state environmental and cultural properties law, and local regulations. Federal, state, and local laws regarding procurement of contractors to conduct the cleanup will be followed. All appropriate permits (e.g., notification of intent to remove ACM) will be obtained prior to the work commencing. Additional laws and regulations are discussed in more detail below:

### **OSHA Asbestos 29 CFR 1926.1101**

The asbestos standard for the construction industry (29 CFR Part 1926.1101) regulates asbestos exposure for the following activities:

- demolishing or salvaging structures where asbestos is present;
- removing or encapsulating ACM;
- constructing, altering, repairing, maintaining, or renovating asbestos-containing structures or substrates;
- installing asbestos-containing products;
- cleaning up asbestos spills/emergencies; and
- transporting, disposing, storing, containing, and housekeeping involving asbestos or asbestos-containing products on a construction site.

### **EPA NESHAP 40CFR Part 61, Subpart M**

Air toxics regulations under the Clean Air Act specify work practices for asbestos to be followed during demolitions and renovations of all facilities, including, but not limited to, structures, installations, and buildings (excluding residential buildings that have four or fewer dwelling units). The regulations require a thorough inspection where the demolition or renovation operation will occur.

The regulations require the owner or the operator of the renovation or demolition operation to notify the appropriate delegated entity (often a state agency) before any demolition, or before any renovations of buildings that contain a certain threshold amount of regulated ACM. The rule requires work practice standards that control asbestos emissions. Work



practices often involve removing all ACM, adequately wetting all regulated ACM, sealing the material in leak tight containers, and disposing of the asbestos-containing waste material as expediently as practicable, as the regulation explains in greater detail.

#### **EPA AHERA 40CFR Part 763, Appendix C**

The Model Accreditation Plan (MAP) in the Asbestos Hazard Emergency Response Act (AHERA) code requires the use of certified and accredited personnel for the inspection, abatement design, and workers and supervisors/contractors performing asbestos abatement work for commercial and public buildings.

- NMED administers the federal asbestos air quality NESHAP standard including abatement and demolition notifications.
- New Mexico Solid Waste Bureau regulates the transportation and disposal of asbestos waste.
- New Mexico OSHA administers the federal OSHA regulations for asbestos worker protection.

## **4.0 Alternatives Considered**

### **4.1 Cleanup Alternatives Considered**

The proposed cleanup will include abatement of ACM, which may be accomplished by removal, repair, and/or encapsulation.

Additional actions may include the preparation of an Asbestos Management Plan (Management Plan) for the Site including requirements for periodic surveillance, operation and maintenance procedures, and hazard communication plans. Since portions of the ACM may remain in place, the Management Plan will describe the procedures and requirements for work that may impact the remaining materials.

A preliminary evaluation of remedial alternatives was performed. Alternatives that were determined to have low effectiveness, low implementability, or prohibitive costs were not evaluated further. The following alternatives warranted further consideration and have been evaluated in subsequent sections:

**Alternative #1:** No Action

**Alternative #2:** Removal of all ACM

**Alternative #3:** Repair, Removal, and Encapsulation of ACM and establishment of a written Management Plan

### **4.2 Cleanup Alternative Evaluation**

Cleanup approaches proposed to address the ACM were evaluated based on the following established criteria:

- Effectiveness - Protection of human health and the environment, proven long- and short-term effectiveness of the remedy, regulatory compliance, reduction in toxicity/mobility/volume.
- Implementability – Probability of success, feasibility and schedule.
- Cost.

The three alternatives that were evaluated are summarized below.

#### **4.2.1 Alternative #1 - No Action**

Alternative #1 No Action would leave the asbestos in its current state and would restrict the Site to authorized users through signage and other controls.

Effectiveness: Alternative #1 is not considered effective. No Action would leave the Site in its current state and would not address damaged ACM. Areas of the Site would need to be restricted to authorized personnel wearing PPE (e.g., respirators), and the Site would not meet the requirements under USEPA AHERA 40 CFR 763 and OSHA Asbestos regulations for General Industry. Alternative #1 would not meet the goals of the community to enhance usability of the Site as a community center or similar public space, because the public could not safely access the Site without PPE. Additionally,



exterior (e.g. rooftop) damaged contaminated materials could be released to the environment and pose possible public exposure. Implementation: The ease of implementing Alternative #1 is simple/effortless. Actions include securing areas with friable ACM and posting access restriction signs.

Cost: The costs to implement Alternative #1 would be minimal.

## 4.2.2 Alternative #2 - Removal of all ACM

Alternative #2 would include full removal of asbestos including destructive access to ACM.

Effectiveness: The effectiveness of Alternative #2 is high. Complete removal of ACM would remove the potential for exposure to these hazardous materials to the community members, building occupants, contractors, and visitors and be protective of human health and the environment. Alternative #2 would also allow for rehabilitation and construction work to proceed to meet the needs of future building occupants. Alternative #2 advances the community goal of transforming the Site to a community center or similar public space by removing restrictions and limitations caused by contamination through full removal of ACM.

Implementation: The ease of implementing Alternative #2 would be moderate. The ACM abatement includes the main building and mechanical building/pool would require demolition to access and remove the ACM from the exterior of each building. All removal work would require the establishment of regulated areas with work performed by qualified abatement firms with certified personnel. During the removal of exterior ACM, community air monitoring is recommended.

Cost: The estimated rough order of magnitude costs of Alternative #2 would be approximately \$19,450.

## 4.2.3 Alternative #3 - Repair and Encapsulation of ACM

Alternative #3 would include cleanup of damaged ACM and associated debris (e.g., roofing and transite pipe) and encapsulation to reduce potential exposure of future occupants.

Effectiveness: The effectiveness of Alternative #3 is moderate. Alternative #3 would repair and encapsulate remaining ACM and establish procedures for maintaining the remaining ACM in a manner that protects human health and the environment. The USEPA has established regulations and guidance for this approach to abating and managing ACM in schools, child-occupied housing, and public and commercial buildings. Alternative #3 may restrict the community's long-term use as a public space, because renovation, maintenance and management of the remaining contamination would add costs and may limit options.

Additional actions may be implemented including the development of a written Management Plan for the Site that would document the updated ACM surveys identifying the remaining materials in the buildings, regular visual inspections of the ACM to evaluate the current conditions, procedures for repairing damaged ACM if observed, and procedures for future construction or maintenance activities that may impact these materials.

Implementation: The ease of implementing Alternative #3 is moderate. ACM will remain within the piping and roofing paper, but building occupants would be protected from exposure during normal operations of a work or recreational setting.

Remaining ACM would be managed under a written Management Plan for the site that includes periodic surveillance, communication of hazards, procedures not to disturb the materials, and procedures if the materials are disturbed or planned to be disturbed.

Cost: The estimated rough order of magnitude costs to implement repair and encapsulation of ACM is \$6,500, with the anticipated management per the Management Plan requiring annual costs of \$1,500 per year. Building renovations and other material disturbances would require specialized procedures; expenses for these activities are not included in these estimated costs.

## 5.0 Selected Alternative and Proposed Cleanup Plan

The recommended cleanup alternatives for the Pecos Municipal Pool Site is **Alternative #2 – Removal of all ACM.**

Alternative #1 – No Action is not a viable option, as it fails to address the Site risks to human health and the environment and does not allow safe access for community members to use the Site in the future. Alternative #2 and Alternative #3 are both effective at reducing ACM potential exposures of Site occupants and the environment; however, Alternative #2 fully removes ACM, which is the most effective approach for eliminating the risk of exposure to these hazardous substances and offers the most flexibility for Site reuse options. Alternative #3 is not compatible with the community vision for the site as expressed during the March 2024 community meeting. The community does not wish to reuse the existing structure. Additionally, vandalism is an on-going issue at the site and repair and encapsulation would be futile. The ease of implementation for both Alternative #2 and Alternative #3 is considered moderate, with similarly complex procedures for abatement; however, Alternative #2 is preferable because it does not require additional ACM management via a Management Plan. The estimated remediation cost of Alternate #2 (\$19,450) is higher than Alternate #3 (\$6,500); however, the overall cost of Alternate #3 would exceed Alternate #2 after about nine years of maintenance.

# Figure 1 – Site Map



# Appendix A – Community Meeting Notes



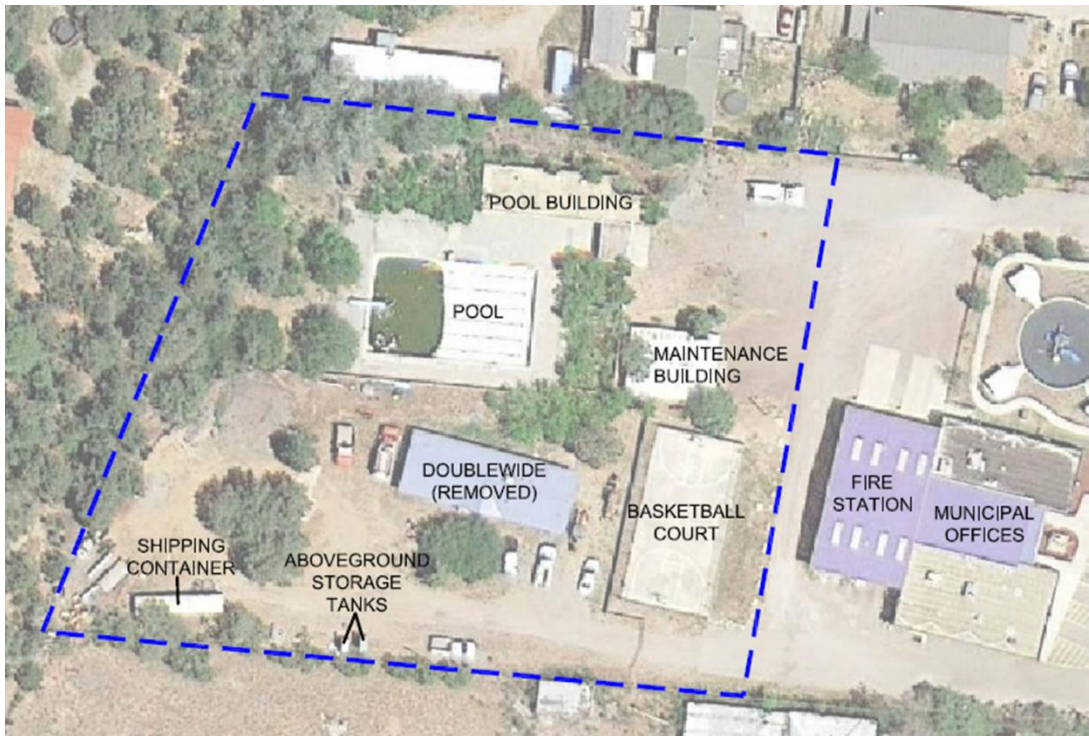


KANSAS STATE UNIVERSITY

# Village of Pecos, NM Community Visioning Meeting Wednesday, March 20, 2024

## Introduction and Purpose

On the morning of March 20, 2024, the Village of Pecos, the New Mexico Environment Department (NMED) Brownfields Program, and Kansas State University - Technical Assistance to Brownfields (KSU TAB) hosted a public meeting at the Pecos Municipal Building, 92 S. Main Street. The purpose of the meeting was to solicit community input regarding the reuse of the former Municipal Pool property in Pecos. This property is considered a brownfield, defined by the U.S. Environmental Protection Agency as property “the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.” There are currently substantial funds available through the U.S. EPA and other federal agencies for activities related to the redevelopment of brownfields. Understanding the community’s vision for the former Municipal Pool is helpful to accessing redevelopment funds and implementing successful reuse of the property.



## Meeting Summary

Scott Nightingale (with KSU TAB) started the meeting at 9:30 am, welcoming the community members and thanking them for their participation. He provided a brief overview of the meeting agenda and noted the value of gathering community information to guide redevelopment efforts at the former Municipal Pool property.

Savannah Richards (with NMED) shared information from recent NMED-funded environmental assessments of the subject property. She explained that investigators had found asbestos-containing materials present in the former pool house building. Ms. Richards additionally described possible future activities by the NMED Brownfields Program to mitigate the potential hazards posed by the asbestos.

Eleven community members attended the meeting and participated in the “visioning” portion of the event. Attendees formed two working groups, at different tables. Each person wrote a list of desired reuses for the former Municipal Pool property. Then, Savannah Richards and Rebecca Cook (with NMED) facilitated discussions at each table, leading to the selection of the Top 5 reuse options for the table. A representative from each table group presented their Top 5 lists to all meeting attendees, who subsequently voted on their favorite property reuse ideas.

Mayor Telesfor Benavidez spoke to the room following the visioning exercise, addressing the Village of Pecos’ plans for future redevelopment. Photographs from the event are found below, along with a summary of the voting results.



Photo 1

The March 20, 2024 community meeting occurred at the Pecos Municipal Offices, 92 South Main Street.





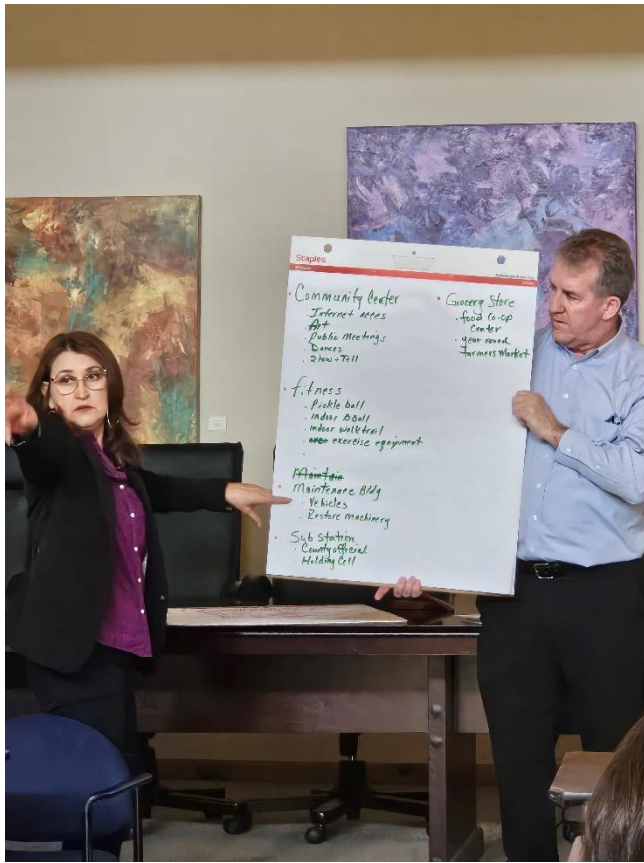
Photos 2 and 3

Meeting attendees worked in Table Groups to prioritize reuse ideas for the former Municipal Pool property.





**Photos 4 and 5** - Representatives from each Table Group presented their Top 5 reuse ideas to all attendees.



**Photo 6** - Community members used sticky dots to vote on their favorite reuse ideas.



Photos 7 and 8 - Voting Results

- Community Center
  - Internet acces
  - Art
  - Public Meetings
  - Dances
  - Show + Tell
- fitness
  - Pickle ball
  - Indoor Bball
  - indoor walk trail
  - ~~exer~~ exercise equipment
- Maintain
  - Maintenance Bldg
    - Vehicles
    - Restore machinery
- Sub Station
  - County official
  - Holding Cell
- Grocery Store
  - food co-op Center
  - year round Farmers Market

- Community Center
  - (multi purpose)
- (a) library
- (b) gym
- (c) learning space
- (d) archery, shooting, batting
- (e) event space
- (f) police substation
- (g) Park - indoor & outdoor space
  - place space
- (h) walking track

Village of Pecos - Municipal Pool Property  
 March 20, 2024 - Community Visioning Voting Results

Identified Property Reuse Votes Received

Table 1	Community Center (multipurpose)	10
	Library	1
	Gym	3
	Learning Space	1
	Archery, Shooting, Batting	1
	Event Space	1
	Police Substation	1
	Park - Indoor & Outdoor Space	
	Walking Track	

Table 2	Community Center	6
	Internet Access	
	Art	
	Public Meetings	
	Dances	1
	Show & Tell	
	Fitness	5
	Pickleball	
	Indoor Basketball	1
	Indoor Walk Trail	1
	Exercise Equipment	1
	Maintenance Building	2
	Vehicles	
	Restore Machinery	
	Sub Station	2
	County Official	
	Holding Cell	
	Grocery Store	7
	Food Co-op Center	
	Year Round Farmers Market	

Total votes 44