

RESOLUTION 2025 - 58

A RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS OF ARCHULETA COUNTY, COLORADO ADOPTING THE ARCHULETA COUNTY DEBRIS MANAGEMENT PLAN

WHEREAS, Archuleta County, Colorado, is committed to ensuring public safety, mitigating disaster impacts, and fostering a resilient recovery process in the event of a disaster or emergency; and

WHEREAS, the development and implementation of a Debris Management Plan is critical to effectively coordinating debris removal operations, facilitating efficient resource allocation, and ensuring compliance with Federal Emergency Management Agency (FEMA) regulations and guidelines; and

WHEREAS, the Archuleta County Office of Emergency Management has developed a Debris Management Plan to establish procedures, responsibilities, and strategies for the timely and effective management of disaster-related debris; and

WHEREAS, the Debris Management Plan is designed to protect public health and safety, restore essential services, and minimize environmental impact following a disaster event.

NOW, THEREFORE, BE IT RESOLVED, by the Board of County Commissioners of Archuleta County, Colorado that:

1. The Archuleta County Debris Management Plan is hereby adopted as the official plan for debris management in Archuleta County, attached hereto as Exhibit A and incorporated into this Resolution by this reference.
2. The Archuleta County Office of Emergency Management, in coordination with relevant County departments, municipalities, state and federal agencies, shall be responsible for the implementation and administration of this plan.

APPROVED AND ADOPTED this 15th day of October 2025 in Pagosa Springs, Archuleta County, Colorado.

ATTEST:

Kristy Archuleta

The Board of County Commissioners
Archuleta County, Colorado



Kristy Archuleta,
Archuleta County Clerk and Recorder

Veronica Medina
Veronica Medina
Chair

EXHIBIT A

ARCHULETA COUNTY DEBRIS MANAGEMENT PLAN 2025



Archuleta County
Debris Management Plan
2025

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Record of Changes

All changes are to be annotated on the master copy of the Archuleta County Debris Management Plan. Should the change be significant in nature, updates shall be made to applicable web pages. If not, changes will be reviewed and incorporated into the Plan during the next scheduled update.

Date Revised	Revised By	Distribution	Remarks
06/2025	Lacy Capre	ACSO Sharepoint	Comprehensive update and FEMA alignment
09/2025	Roy A. Vega	ACSO Sharepoint	

Authority

This Plan is developed, promulgated, and maintained under the following State and Federal Statutes and regulations:

Public Law 93-288 as amended by Public Law 100-107, the Stafford Disaster Relief and Emergency Assistance Act and (referred to in this plan as the Stafford Act).

Public Law 81-920, Federal Civil Defense Act of 1950, as amended.

CFR, Title 44, Part 200 et seq.

The Colorado Disaster Emergency Act

The plan below has been approved for implementation by:

Roy A. Vega

Date

Director, Archuleta County Emergency Management

Mike Torres

Date

Director, Archuleta Count Public Works

Eric McRae

Date

Manager, Archuleta County Road and Bridge

Overview and Administration

Disaster events such as wind, winter storms, wildfire, flooding, earthquakes, and other natural and technological emergencies have the potential for causing extensive damage to public and private property. Such natural and human-caused disasters produce a variety of debris that can include such things as trees, sand, gravel, mud, building and construction materials, vehicles, personal property and hazardous materials. First responder, community, worker and volunteer safety are of paramount importance. Additionally, the safety and appearance of the environment are important in order to facilitate a return to a new normalcy. A planned debris removal and recovery procedure is essential for quickly opening major transportation routes, providing access to critical facilities, and for removing debris-related threats to public health and safety.

Purpose

This plan describes procedures to be followed during the removal and recovery of debris resulting from natural and technological disasters or other major incidents. A coordinated effort will be necessary for the removal, collection, and disposal of debris generated from a large event. The goal will be to use existing solid waste best practice strategies and methods to reduce, reuse, recycle, or recover, with the Archuleta County Landfill as a final option. Initial debris assessments will determine if a disaster event is of significance to request assistance from outside resources. The public works, Archuleta County Sheriff's Office Emergency Management (ACSO-EM), and debris management staff will help establish priorities for the allocation of resources, collaborate with damage assessment team needs, physically open transportation routes, remove debris, and, if needed, locate temporary debris management sites (TDMS) for the collection and recovery of debris.

This plan provides a comprehensive framework for debris management before, during, and after a disaster. The primary goals are to:

- Protect public health and safety
- Facilitate efficient debris removal
- Support recovery and maximize FEMA reimbursement (when applicable)

Assumptions

- Information by initial damage assessment teams will be critical in determining the amounts and types of debris as well as priorities for emergency debris removal.
- A large-scale disaster event may likely impact the lives of many local response staff, impacting their ability to assist with emergency debris removal.
- The amount of debris resulting from an event or disaster could exceed Archuleta County's ability to dispose of it.

- A coordinated community effort will be required to effectively collect, remove, and dispose of debris following a disaster.
- In order to combine local resources (personnel, equipment, supplies) various jurisdictions may need to join together to establish a local area of operations for collecting and handling the debris.
- Mutual aid from adjacent jurisdictions will be coordinated with pre-disaster planning.
- Pre-disaster planning will provide the jurisdictions knowledge of debris management and how to organize locally to conduct debris removal operations thus ensuring that cost effective and environmentally sound practices will be used.
- Damage to city/county facilities and equipment as well as that of our mutual aid partners may hamper initial emergency debris removal capabilities.
- During many disasters, electricity will be lost for a period of time and communications systems could be lost or overloaded.
- Roads and bridges may be damaged, limiting access for debris removal.
- A local disaster may be declared. If the natural disaster qualifies, the Governor may declare a state of emergency that authorizes the use of state resources to assist in the removal and disposal of debris. In the event federal resources are required, the Governor would request through FEMA a Presidential Disaster Declaration.
- Emergency policies/procedures may be enacted during a declared disaster to prevent price gouging, to temporarily suspend codes and relax permit and zoning processes, and to streamline purchasing procedures.
- Private contractors may play a significant role in the debris removal, collection, reduction and disposal services. Accordingly, contracts with private sector partners will be necessary to augment public efforts.
- Private property debris removal will often not be covered under state or federal funding programs and will therefore be more challenging to manage.
- Debris may be contaminated with chemical and/or biological agents unless determined otherwise.
- In the event that debris sites are crime scenes, evidence procurement will take precedence over debris removal. Law enforcement personnel shall control the area until released for debris removal.
- Human and/or animal remains may be located within debris.
- The solid waste hierarchy for removing debris will be to reuse, recycle, compost, and, finally, remove to the landfill.
- In some cases, debris may need to go directly to the landfill for rapid removal from the area from a safety standpoint. This will be at the discretion of the Debris Manager.

State and Federal Assistance

There are a variety of grants and assistance available through the State of Colorado and the federal government designed to help communities with debris removal. Some programs are specific to the type of disaster (ex. flooding), though in general all programs require that a preliminary damage assessment is completed. Simplified, a preliminary damage assessment amounts to quantifying the damage through value, historic, and environmental implications and being able to discuss immediate expenditures associated with the damage. [The Public Assistance Debris Management Guide from the Federal Emergency Management Agency \(FEMA\)](#) provides an overview of what funds are available and criteria for obtaining those funds. Initial Damage Assessments are required for reimbursement and will occur concurrently with assessing debris amounts.

Private Property Debris Removal (PPDR) is generally not eligible for reimbursement under the Public Assistance Program (PAP) because debris on private property does not typically present an immediate health and safety threat to the general public. Also, debris removal from private property is generally the responsibility of individual private property owners, and other sources of funding, such as insurance, are commonly available to property owners to cover the cost of work. FEMA Disaster Assistance Policy 9523.13, “Debris Removal from Private Property,” provides FEMA authority to fund debris removal from private property if debris removal is in the “public interest.” FEMA defines “public interest” as being necessary to: eliminate immediate threats to life, public health, and safety; eliminate immediate threats of significant damage to improved property; or ensure economic recovery of the affected community to the benefit of the community-at-large. In these situations, debris removal from private property may be considered to be in the public interest and thus may be eligible for reimbursement under the FEMA Public Assistance Program (44 CFR 206.224). In general debris must meet the following criteria to be eligible for reimbursement:

1. Debris must have been generated by the federally declared disaster
2. The debris must be located in the designated disaster area
3. The debris must be the legal responsibility of the county
4. Any debris located on unimproved property, undeveloped land or debris located on federal property is **not** eligible for FEMA reimbursement.
5. Debris moved from private property to the county right of way is eligible for reimbursement.
6. Debris removed from private property is eligible if it poses an immediate threat to life, safety, health, or property preservation.

In a large-scale debris removal process, a [FEMA Request for Public Assistance](#) application must be filled out through the online portal. Following that process, FEMA will assign a Program Delivery Manager (PDM) to assist with the funding process. Those who do not qualify for PAP,

may qualify for various types of individual assistance through FEMA or the state.

The following is a list of state agencies that may participate in, or support, debris removal activities:

- Colorado Department of Transportation (CDOT)
- Colorado Department of Health and Environment (CDPHE)
- Colorado Division of Homeland Security and Emergency Management (DHSEM)
- Colorado Department of Natural Resources (DNR)
- Colorado Department of Agriculture
- Colorado National Guard
- Colorado Department of Corrections (DOC)
- Colorado Department of Public Safety, Colorado State Patrol (CSP)

The following is a list of federal agencies that may participate in, or support, debris removal activities:

- Federal Emergency Management Agency (FEMA)
- Federal Highway Administration
- United States Department of Agriculture (USDA)
- Environmental Protection Agency (EPA)
- United States Army Corps of Engineers
- United States Coast Guard (USCG)

Federal technical assistance may be available and applies when a state or county lacks technical knowledge or expertise to accomplish an eligible task. The Federal Emergency Management Agency will then request technical assistance from the appropriate federal agency in the National Response Plan. Eligible technical assistance includes:

- Assistance in developing an overall debris management plan
- Assistance in developing Debris Management Site plans
- Assistance in developing monitoring plans
- Assistance in developing contract guidelines
- Assistance in developing and implementing trip tickets processes

Checklist for Initiating FEMA Public Assistance for Debris Management

Before the Disaster

- ☐ Ensure Debris Management Plan is FEMA-compliant
- ☐ Identify and pre-certify Temporary Debris Management Sites (TDMS)
- ☐ Establish monitoring contracts and load ticket system
- ☐ Train staff on FEMA documentation requirements
- ☐ Maintain accurate asset inventory and pre-disaster photos

Immediately After the Disaster

- ☐ Declare a **local emergency**
- ☐ Conduct **Initial Damage Assessment (IDA)** with documentation (photos, GPS, narrative, cost estimates)
- ☐ Notify **Colorado DHSEM** to initiate state coordination
- ☐ Participate in **joint Preliminary Damage Assessment (PDA)** with State and FEMA
- ☐ Coordinate with public health for hazardous materials or debris contamination

When a Federal Disaster is Declared

- ☐ Submit **Request for Public Assistance (RPA)** through FEMA Grants Portal
- ☐ Attend Applicant Briefing with FEMA and State
- ☐ Identify **Category A – Debris Removal** scope and documentation needs
- ☐ Assign a Debris Manager and begin using **load tickets and monitoring logs**
- ☐ Track all labor, equipment, and disposal costs by activity and site

For FEMA Reimbursement

- ☐ Ensure eligibility of debris (location, legal responsibility, disaster-caused)
- ☐ Keep accurate and complete documentation (photos, logs, receipts)
- ☐ Submit project documentation in FEMA's Grants Portal with PDM assistance
- ☐ Retain all records for **minimum 3 years** post-grant closeout

Concept of Operations

Debris Management activities will be coordinated through the Emergency Operations Center during the response phase of any large-scale emergency or disaster and will transition to the Archuleta County Public Works Department once the EOC is deactivated and short- and long-term recovery is underway. In events that do not require an EOC, Debris Management will be accomplished through the Road and Bridge/ Public Works Departments as the lead agency.

Debris Management Jobs

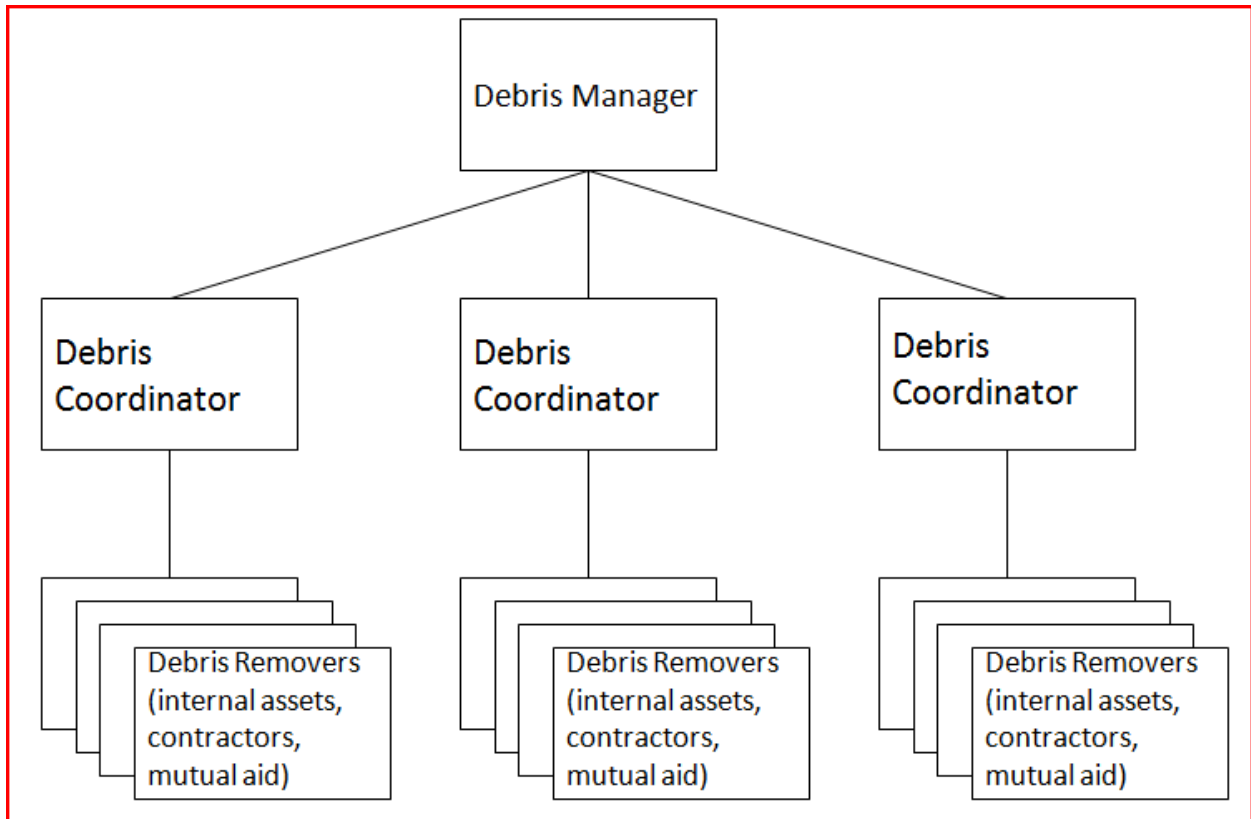
Debris Management for emergencies and disasters will require a higher level of coordination and tracking than normal operations. Because of this, additional duties and methods will be required. The following are specific jobs that would need to be assigned to ensure an efficient debris removal process.

1. The debris manager is responsible for the following tasks:
 - a. Overall coordination and control of debris removal. Identify the type and number of staff needed to complete debris removal.

- b. Receive regular updates on the progress of debris clean-up and newly identified needs from debris coordinators.
 - c. Provide regular progress reports to the EOC on status and issues surrounding debris removal.
 - d. Coordinate for any mutual aid or contracting that is required in concert with EOC logistics.
 - e. Create priorities for debris removal based on assessments that are conducted.
 - f. Oversee the assessment process through the debris coordinators.
 - g. Establish a TDMS if necessary. The site(s) should be on county land if possible, approved by the Colorado Department of Public Health & Environment (CDPHE), and have clear traffic and environmental controls.
 - h. Ensure Archuleta County Public Health is aware of hazardous material disposition; they have reporting requirements to the state. Coordination will need to be made to determine their specific requirements depending on the situation.
2. The debris coordinator(s). In some smaller scale situations, the debris manager may also be able to simultaneously function as the debris coordinator. When making this determination, span of control should be considered: having more than seven subordinate units will likely make this course of action impractical if not impossible. In large scale operations, debris coordinators may be broken up by sectors on a map. These sectors may be comprised of representatives from each entity involved, or a combination.
3. The debris coordinator(s) are responsible for the following tasks:
- a. Daily operational control of any individuals and their equipment conducting debris removal (this includes contractors and mutual aid partners) within their assigned sector or area and the safety of those individuals.
 - b. Maintain an ICS form 214 (activity log) to document and track progress, issues, etc. with debris removal.
 - c. Obtain permits as necessary.
 - d. Receive guidance from debris manager on damage assessments; conduct direct assessments.
 - e. Ensure individuals conducting debris removal are filling trucks to capacity and reporting accurate information through the **Archuleta County Landfill Load Tickets**, which are already in use. If the final disposition is the landfill, the debris coordinator may allow the landfill to ensure individuals are filling trucks to capacity and reporting accurately on the Truck Load Form. The Truck Load Form is a critical component to requesting FEMA funds. Contractors and local assets alike must complete these forms. Copies of these forms must be provided to the Emergency Manager.

4. Individuals conducting debris removal are responsible for the following task:
Reporting progress through the Archuleta County Landfill Load Tickets to the landfill; if the load will be moving to a location other than the landfill, the Archuleta County Landfill Load Tickets will be provided to the debris coordinator prior to disposition.

Debris Management Hierarchy



General Process

Following the determination to execute this plan, the general process that will occur for debris removal in disasters and emergencies will be to conduct assessment of debris, create priorities, begin removal and disposition, and track progress. If the debris cannot be reused, recycled or composted, the final disposition will take place at the Archuleta County Landfill/ Recycling Center. The landfill does not accept any hazardous materials to include chemicals, asbestos, etc. The removal of those items will have to be contracted. In the event the debris will exceed the capacity of the landfill, mutual aid is the best option for disposition followed by contracted removal and disposition of debris. Contracting procedures will follow existing county contracting procedures. Temporary debris management sites (TDMS) may be established to avoid executing mutual aid or contracting debris removal services. TDMS should be county property if at all possible to avoid additional costs of renting private land.

1. Determining the need to execute this plan is difficult to define; however, as stated earlier, this plan should be useful for small and large scale debris situations alike.
2. Conduct assessment of debris. The debris manager will coordinate an assessment of the debris. Depending on the event and types of debris, the debris manager may have to put together different types of assessment teams. This could include environmental health, fire department members, public works members, members of the assessor's office, members of building and land use, etc. In some situations it may be more beneficial to conduct an initial, quicker assessment and then determine additional team members/information needed in a second, focused assessment. These types of determinations will need to be made based on a variety of circumstances that may be present, to include, but not limited to, type of event, magnitude, personnel availability, etc.
 - a. Initial assessments. Initial assessments can be completed using a variety of methods. Prior to sending individuals out to a scene, existing information should be gathered first. Information can be obtained from a variety of sources to include the situational unit leader, the geographic information system (GIS) maintainers, the public information officers (PIO), and dispatch. If a rapid needs assessment has been completed, the information will be extremely valuable and may take the place of an initial assessment. Depending on the information received for those and other entities, a determination should be made on how to proceed with the initial assessment. Depending on circumstances, assessors may be able to cover several square blocks or entire sectors or may have to assess one building at a time. The damage assessment worksheet should be used to document assessments. One assessment team may use several worksheets to complete an assessment.
 - b. Focused assessments. Following initial assessments, it may be determined that additional more focused assessments may need to be conducted in certain areas. These could be used for a variety of reasons, to include obtaining more or missing information from the first assessment or if it is determined specialized

qualifications may be necessary (e.g. Asbestos testing). Focused assessments may use the damage assessment worksheet as a guide, but the debris manager should provide specific instructions on desired assessment outcomes.

- c. In addition to the assessment sheet, the debris manager may choose to have teams conduct the State Initial Damage Assessment at the same time as either the initial or focused assessments. The State of Colorado has several documents that they require in order to begin the process of determining if state and federal assistance can be provided to Archuleta County. In this case, forms from the Archuleta County Damage Assessment Plan should be used. Adding this to damage assessments will lengthen the assessment process but will potentially avoid duplicating work.
3. Create priorities. Using the debris assessments, the debris manager will use the following rapid needs assessment priorities to ensure the most critical debris sites are cleared first.
 - I. Immediate life safety issues and health concerns
 - II. Preservation, ability to use, and/or access to essential facilities (Police stations, fire stations, shelters, hospitals, etc.)
 - III. Preservation, ability to use, and/or access to life safety facilities (schools, non-hospital health care facilities, hazmat facilities, densely populated areas, etc.)
 - IV. Preservation, ability to use, and/or access to lifelines (utilities, communication systems, transportation systems, etc.)
 - V. All other debris.
4. Begin removal and disposition. This portion of the plan may run concurrently with the assessment and priority portions of the plan to increase efficiency. Due to the priorities listed above, removal and disposition will likely start with debris clearance. Debris clearance will involve simply moving debris so access may be regained. Crews will then begin the process of removing debris and disposing of debris. Crews will use the Archuleta County Landfill Load Tickets to track and identify types of debris. It may be more efficient to sort debris into like piles and instruct dump truck operators to pick up specific types of debris (vegetative, recycling materials, etc.) rather than focus on one area. This may alleviate issues surrounding sorting debris at the landfill. Debris not able to be disposed of at the Archuleta County Landfill may need to remain in place until proper disposition arrangements are made.
5. Track progress and reevaluate priorities. This portion of the plan will run concurrently with removal and disposition. Evaluation of current priorities and if they need to change should be constantly occurring. Tracking progress will take place with the assistance of the truck load forms, assessment forms, and the debris coordinator's ICS forms 214.

Health and Safety Considerations

All debris and ash should be handled in a manner that will minimize potential exposure to any unknown hazardous materials that could potentially be present in the debris. The county does not have the resources to dispose of most hazardous materials; because of this, contractors must be used to dispose of these hazardous materials. Because assessments will take place prior to understanding the content of debris, precautions should be taken by those conducting debris assessments. Archuleta County Public Health, Archuleta County Public Works, and Archuleta County Sheriff's Office Emergency Management have some particulate dust masks that will provide some protection from airborne matter. In addition, it is important that anyone conducting assessments should wear long pants and shirts, closed toe shoes (ideally steel toed boots), eye protection, and gloves during the assessments. Similar precautions should be taken by those county employees who are conducting clean up. If contractors are used, they are expected to provide their own personal protective equipment (PPE).

Ash and debris may need to be wetted when handling and hauled to minimize dust.

As mentioned, some items may not be accepted at the Archuleta County Landfill. Should any debris be determined as unfit for the Archuleta County Landfill or too hazardous, the debris manager will coordinate disposition through appropriate contractors or mutual aid if available.

Though debris coordinators are overall responsible for the safety within their sector, because the safety of those conducting assessments and removal is of the utmost importance, everyone should be conducting their work with the safety of themselves and others in mind.

Communications Strategy

Through the debris removal process, it will be vital that the debris manager communicates with the Archuleta County Public Information Officer (PIO) on messages that the public will need. These messages include how the public should dispose of their own debris and what resources are available to them (like individual assistance from FEMA). The community will also need to be made aware of hazards that may be associated with the debris. It is the responsibility of Archuleta County Public Health to ensure the PIO has this information to provide the public.

Private Land Consideration

As mentioned above, private land clearance is generally the responsibility of the property owner. The county may choose to step in for only a few reasons (e.g. safety of the public), but in the majority of cases of debris on private land, it will be the owner's responsibility. Archuleta County, however, can provide assistance in a variety of ways.

Most importantly, educating the public on the process of cleaning up their property is important as an uneducated community will likely create issues for those conducting debris removal. The Public Information Officer (PIO) should be leveraged to disseminate information that the public must understand for their personal debris removal. Health and safety messages surrounding the hazards brought about by the event will also be vital to the public.

Agency Responsibilities

ESF #3: County-wide Public Works

- Identify primary and alternate individuals to serve as debris managers and debris coordinators. Ensure they have a working knowledge of this plan and their specific requirements. Training prior to an actual event is necessary. These individuals should have the ability to conduct any tasks listed in the manager and coordinator job descriptions above.
- Determine if there is a need for mutual aid and/ or contracts for debris removal or disposition and make arrangements with those entities.
- Use the PIO to communicate any messages on how the public should go about managing debris on their private property and other messages related to debris removal.
- Provide particulate dust masks for those conducting assessments and assist with acquisition of additional personal protective equipment (PPE) as necessary.

ESF #4: Pagosa Fire Department

- Provide Hazardous Materials support as necessary. This could include assessments, responding to hazmat, or coordinating for outside hazmat resources. Response will depend on departmental capabilities at the time.
- Provide technical rescue as necessary either conducting in-house or coordinating for outside technical rescue as necessary.

ESF #8: Archuleta County Public Health

- Provide Environmental Health expertise as necessary for debris assessment and disposal guidance to ensure health and safety of the community and debris workers.
- Provide particulate dust masks for those conducting assessments and assist with acquisition of additional personal protective equipment (PPE) as necessary.
- If elements of debris are beyond the expertise local authorities, contact individuals through the state who can provide that level of expertise and arrange for their assistance.
- Use the PIO to communicate health hazards associated with the debris and how the public can mitigate these risks to themselves and their families.
- Coordinate with the debris manager to ensure they are able to provide information related to environmental health reporting requirements to the state.

ESF #14: Archuleta County Assessor's Office

- Provide data as necessary to determine the number of damaged or destroyed buildings and values.

ESF #14: County-wide Building and Land Use

- Evaluate the feasibility of waiving permit fees in extenuating circumstances. If feasible, ensure Public Works is aware of requirements.

ESF #15: Public Information Officer (PIO)

- Provide messages to the community relating to the process of debris removal, assets they may utilize to assist them, and safety concerns. Specifics surrounding these messages should come from Public Health and Public Works.

Plan Maintenance

Due to the nature of emergency planning, this document must periodically be updated. The updates will serve to renew or update agreements made, update contacts, and provide changes in policy, procedures, or organizational structure. In addition to periodic reviews, this plan should be reviewed anytime it is implemented either in a real-world situation or an exercise. It is likely that following an exercise or real-world situation in which this plan applies, gaps or shortcomings within the plan will be identified. Adjustments to the plan based on those assessments should be made promptly following an exercise or real-world event. Each department in the county will be responsible for reviewing and adjusting the portion of the plan they are responsible for, with the Archuleta County Sheriffs Office Emergency Management (ACSO-EM), ultimately responsible for compiling changes and adjustments made by other departments.

Appendix A: Unit Log (ICS 214)

[illegible]

[illegible]

Appendix B: Debris Assessment Worksheet

Date:	Time:	Incident:				
Sector:	Specific Location (if one building include address, if area assessment include boundaries of area; if possible include GPS coordinates as well):					
Assessor Name:	Route taken to Assessment Location:					
Notes on condition of route to location, include any notes on known inaccessible routes:						
Notes on any imminent life safety concerns, this should include if applicable any known and/or reported trapped, injured, dead and specific information surrounding their circumstances (what are they trapped by, specific location, extent of injuries) Notification of the IC/ EOC concerning these issues should be made immediately followed by recording note here:						
*Status of:	Electricity	Gas	Sewer	Water	Phone	Other, specify
Additional notes on statuses above or other imminent hazards, if PF code is used indicate what is and is not functioning:						
Types, locations, and approx. amount** of debris observed:						
Other notes:						

*Use Status Codes: F: Functional, N: Not Functional, U: Unknown Status, PF: Partially Functional

**Use debris approximation procedures in Appendix C, Debris Management Annex

Appendix C: Debris Estimation Methods

Residential Buildings

A formula for estimating the debris quantities from a demolished single-family home and associated debris is:

$$L' \times W' \times S \times 0.20 \times VCM = \text{___ cubic yards of debris (cy)}$$

Where:

- a) L = length of building in feet
- b) W = width of building in feet
- c) S = height of building expressed in stories
- d) VCM = Vegetative Cover Multiplier

The vegetative cover multiplier is a measure of the amount of debris within a subdivision or neighborhood. The descriptions and multipliers are described as:

- a) **Light** (1.1 multiplier) includes new home developments where more ground is visible than trees. These areas will have sparse canopy cover.
- b) **Medium** (1.3 multiplier) generally has a uniform pattern of open space and tree canopy cover. This is the most common description for vegetative cover.
- c) **Heavy** (1.5 multiplier) is found in mature neighborhoods and woodlots where the ground or houses cannot be seen due to the tree canopy cover.

Mobile homes

Mobile homes have less wasted space due to their construction and use. The walls are narrower, and the units contain more storage space. Therefore, the typical mobile home generates more debris by volume than a single-family home. Historically, the volume of debris from mobile homes has been found to be:

- a) 290 cy of debris for a single-wide mobile home
- b) 415 cy of debris for a double-wide mobile home

Vegetation

Vegetation is the most difficult to estimate due to the random sizes and shapes of trees and shrubbery. Based on historical events, the USACE has established a few rules of thumb in forecasting and estimating vegetative debris.

- a) Treat debris piles as a cube, not a cone, when estimating
- b) 15 trees, 8 inches in diameter = 40 cy (average)
- c) One acre of debris, 3.33 yards high = 16,117 cy

Volume- Weight Conversion Factors

These factors converting woody debris from cubic yards to tons are considered reasonable and were developed by USACE.

- a) Softwoods: 6 cy = 1 ton
- b) Hardwoods: 4 cy = 1 ton
- c) Mixed debris: 4 cy = 1 ton
- d) C & D: 2 cy = 1 ton

Outbuildings

All other building volumes may be calculated by using the following formula:

$L' \times W' \times H' \times 0.33 = \text{___ cubic yards of debris}$

Where:

- a) L = length of building in feet
- b) W = width of building in feet
- c) H = height of building expressed in feet
- d) 0.33 is a constant to account for the “air space” in the building
- e) 27 is the conversion factor from cubic feet to cubic yards

Appendix D: Contractor Scope of Work Template

Scope of Work for Debris Removal and Management Services

Project Title: Post-Disaster Debris Removal – Archuleta County

Contract Number: _____

1. Background

Archuleta County is seeking qualified contractors to perform debris removal, reduction, hauling, disposal, and site restoration services following a federally declared disaster.

2. Objectives

Efficiently and safely remove and manage disaster-generated debris to:

- Protect public health and safety
- Restore public access and infrastructure
- Maximize eligibility for FEMA reimbursement

3. Scope of Services

Contractor shall:

- Remove eligible debris from public rights-of-way, critical facilities, and pre-approved private property
- Transport debris to approved Temporary Debris Management Sites (TDMS) or final disposal sites
- Segregate debris types (vegetative, C&D, white goods, hazardous materials)
- Process vegetative debris (e.g., chipping, mulching)
- Remove and recycle white goods in accordance with environmental regulations
- Document all loads using county-issued load tickets and provide daily logs
- Adhere to FEMA Public Assistance Program requirements

4. Work Areas

Work zones will be assigned by the County Debris Manager or designee. Contractors must not deviate from assigned zones without written approval.

5. Deliverables

- Daily summary of debris removed (type, volume, location)
- Copies of all completed load tickets
- Photographic documentation as required
- Final report summarizing scope completed, by type and volume

6. Personnel and Equipment

Contractor must provide adequately trained staff and equipment, including:

- Dump trucks, loaders, and other debris handling machinery
- Safety and communication equipment
- On-site supervisor with authority to coordinate operations

7. Payment

Payment will be based on unit pricing per cubic yard or ton, as specified in bid documents. Time-and-materials contracts may be used only for the first 70 hours of actual work following a disaster declaration.

8. Performance Requirements

- Complete work in a timely and safe manner
- Adhere to all OSHA and local safety standards
- Submit all documentation required for FEMA reimbursement
- Comply with Archuleta County contract terms

9. Duration

This contract shall remain in effect for the duration of the disaster response and recovery phase or as defined in the notice to proceed.

Authorized County Representative: _____

Contractor Representative: _____

Date of Agreement: _____

Appendix E: GIS Map of Debris Routes & TDMS

GIS Mapping Guidance for Debris Management

The following elements should be included in the county's GIS-based debris operations maps to support route planning, public communication, and FEMA documentation:

1. Debris Collection Zones

- Overlay existing road grids with assigned sector boundaries
- Identify neighborhoods or sectors prioritized by debris volume or access needs
- Label each zone with a unique ID (Zone A, B, C, etc.)

2. Temporary Debris Management Sites (TDMS)

- Mark each site with coordinates and status (Active, Standby, Closed)
- Show ingress/egress routes
- Include site attributes: surface type, size, access control points

3. Haul Routes

- Indicate primary debris haul roads with directional arrows
- Differentiate by debris type if routes vary (e.g., vegetative vs. hazardous)
- Include road restrictions (e.g., weight limits, bridge crossings)

4. Critical Infrastructure Overlays

- Hospitals, EMS stations, fire departments
- Water/wastewater facilities
- Schools and public shelters

5. Public Drop-Off Points (if applicable)

- Highlight any designated public debris drop-off locations
- Include open hours and contact info if known

6. Map Notes and Legend

- Ensure legend explains all symbols and line types
- Include north arrow, scale bar, and date of last update

Data Sources:

- Archuleta County GIS Department
- Colorado Department of Transportation
- USGS Topographic Layers
- FEMA HAZUS or RiskMap Data (optional)

Appendix F: Landfill Load Tickets