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STAFF REPORT

BOARD MEETING DATE: *June 13, 2017*

DATE: April 24, 2017

TO: Board of County Commissioners

FROM: Aaron R. Kenneston, Emergency Management & Homeland Security
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THROUGH: Al Rogers, Management Services Director

SUBJECT: Approve the updated Washoe County Regional Disaster Recovery Framework dated December 2016 and the Washoe County Regional Debris Plan dated January 2017. (All Commission Districts)

SUMMARY

Recommend that the Board of County Commissioners approve the updated Washoe County Regional Disaster Recovery Framework dated December 2016 and the Washoe County Regional Debris Plan dated January 2017.

Strategic Objective supported by this item: Safe, secure and healthy communities.

PREVIOUS ACTION

N/A

BACKGROUND

The Washoe County Emergency Management and Homeland Security program led a diverse group of regional stakeholders to update both the Regional Debris Plan and the Regional Recovery plan. The group included representatives from throughout Washoe County such as the City of Reno, City of Sparks, Reno-Sparks Indian Colony, Pyramid Lake Paiute Tribe, University of Nevada, Reno, Health District, and private sector representatives. The stakeholders conducted coordination meetings over the past 18 months to develop the attached plans.

The regional debris plan updates the existing 2009 plan. The purpose of the plan is to provide for coordination efforts in the clearance, removal, disposal, and monitoring of debris following a major emergency or disaster. It is designed to work in conjunction with Washoe County's Regional Emergency Operations Plan (REOP) and contains guidance regarding organization, responsibilities, documentation, contracting, as well as temporary debris storage and reduction (TDSR) sites.

AGENDA ITEM # 5. H. 2.

The regional recovery framework aligns the County with the State of Nevada to be in concert with the National Disaster Recovery Framework dated June 2016. The framework is an all-hazards document that provides the region with a scalable recovery organization that can be implemented for incidents of varying levels of size and complexity. The framework is designed to work in conjunction with Washoe County's Regional Emergency Operations Plan (REOP) and complements response and recovery procedures of responding agencies, special districts, and other public, non-profit/volunteer, and private sector entities.

FISCAL IMPACT

N/A

RECOMMENDATION

It is recommended that the Board of County Commissioners approve the updated Washoe County Regional Disaster Recovery Framework dated December 2016 and the Washoe County Regional Debris Plan dated January 2017.

POSSIBLE MOTION

Should the Board agree with staff's recommendation, a possible motion would be: *"move to approve the updated Washoe County Regional Disaster Recovery Framework dated December 2016 and the Washoe County Regional Debris Plan dated January 2017."*

Washoe County, Nevada
Regional Disaster Recovery
Framework



December 2016

Prepared by:
Washoe County Emergency Management and Homeland Security
Program
5195 Spectrum Blvd
Reno, NV 89512

ACKNOWLEDGEMENTS

Development of this Framework represents significant commitment from Washoe County Emergency Management and Homeland Security Program personnel and our Regional Partners. The Framework was made possible thanks to the exceptional efforts, valuable feedback, and participation in meetings of the Statewide Disaster Recovery Task Force members.

We would like to acknowledge the following additional entities that were instrumental in the development of the Framework:

American Red Cross	Reno-Sparks Indian Colony
Bookmark Events	Reno-Tahoe Airport Authority
Boyd Gaming Corporation	Sands Corporation
Carson City	Southern Nevada Health District
Churchill County	Southern Nevada Voluntary Organizations Active in Disaster
Circus Circus	Storey County Emergency Management
City of Henderson	Team Rubicon
City of Las Vegas	The Church of Jesus Christ of Latter-day Saints
City of North Las Vegas	The Venetian Resort
City of Reno	Truckee Meadows Water Authority
Civil Air Patrol	U.S. Department of Homeland Security
Clark County Fire Department	U.S. Department of Housing and Urban Development
Clark County Office of Emergency Management and Homeland Security	U.S. Small Business Administration
Clark County Sheriff's Office	University Medical Center of Southern Nevada
Ecology and Environment, Inc.	University of Nevada Las Vegas
Henderson Hospital	Veterans Affairs Southern Nevada Medical Center
Henderson Libraries	Washoe County Adult Services
Indian Springs Volunteer Fire Department	Washoe County Emergency Management and Homeland Security Program
Nevada Department of Agriculture	Washoe County Health District
Nevada Department of Transportation	Washoe County Medical Examiner's Office
Nevada Division of Public and Behavioral Health	Washoe County Planning and Development
Nevada Division of Water Resources	Washoe County Regional Animal Services
Nevada Multimedia	Washoe County School District
NV Energy	Washoe County Sheriff's Office
Nye County Emergency Management	

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Recovery Support Function Annexes

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1. INTRODUCTION

Section 1 establishes the authority, purpose, and scope in which this Framework exists, and how it aligns with existing plans. Additionally, the section outlines the guiding principles that led to the Framework's development.

1.1 AUTHORITY

The Washoe County Regional Disaster Recovery Framework (Framework) is developed under the authority of Nevada Revised Statutes (NRS) Chapter 414, which assigns responsibility for development of “comprehensive and coordinated plans for emergency management...for the response to and recovery from emergencies and disasters (NRS 141.040).” The responsibility for coordination of the region’s emergency programs, including coordination of recovery planning activities have been delegated to the emergency management programs of the Regional Partners, to include:

- Washoe County
- City of Reno
- City of Sparks
- Reno-Sparks Indian Colony
- Pyramid Lake Paiute Tribe

The Framework has also been designed to be consistent with the National Incident Management System (NIMS) and the principles outlined in the State of Nevada Disaster Recovery Framework and National Disaster Recovery Framework (NDRF), and the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act).

1.1.1 County Authorities

- Washoe County Emergency Services Ordinance 65.300
- Washoe County Resolution adopting the Nevada Emergency Management Assistance Compact Memorandum of Understanding

1.2 PURPOSE AND SCOPE

1.2.1 Purpose

The purpose of the Framework is to provide the Regional Partners with a structure within which to effectively recover from a disaster. The Framework is intended to accomplish the following disaster recovery objectives:

- Establish a recovery organization that provides a framework in which the Regional Partners will support recovery activities during large-scale or catastrophic disasters;
- Assign roles and responsibilities to Regional Partners for supporting recovery activities;
- Identify points of coordination with local, tribal, state, federal, private sector, community, and faith-based partners to coordinate recovery activities;
- Facilitate the stabilization, rebuilding, and revitalization of communities impacted by a disaster; and
- Provide a seamless transition from REOC ICS Positions to Recovery Support Functions (RSFs).

1.2.2 Scope

The Framework is intended to be an all-hazards document providing the region with a scalable recovery organization that can be implemented for incidents of varying levels of size and complexity. When a disaster affects one or more parts of the region, the Framework will be implemented at the direction of the Regional Partners or another authorized official. Such occurrences may include natural, technological, or human-caused disasters and may affect one or more cities or regions. The Framework is intended to guide the region's recovery operations while complementing and supporting the response and recovery plans and procedures of responding agencies, special districts, and other public, non-profit/volunteer, and private sector entities.

The basic details to provide government recovery efforts for all potential disasters is incorporated within the Framework.

1.3 VISION AND GUIDING PRINCIPLES

1.3.1 Vision and Mission

The Washoe County Emergency Management Program assists communities to restore facilities and services to normal following a disaster. Recovery can be short-term such as reviving communication systems, transportation routes, power and water supply. It can also include long-term activities such as rebuilding neighborhoods and establishing flood drainage systems.

1.3.2 Guiding Principles

The delivery of effective disaster recovery support will be guided by the following seven principles.

1.3.2.1 *Understanding Disaster Risk*

Establishing an effective Regional Disaster Recovery Framework requires an understanding of the local-level risks and vulnerabilities. This applies to hazards (e.g., earthquakes, floods, fires, and terrorism attacks), as well as community stressors (e.g., economic downturns, poverty, and aging populations). A successful framework also includes a rigorous assessment and understanding of risks and vulnerabilities that could pose additional recovery challenges. The Framework approach recognizes that each disaster will be unique in its impacts and the communities it affects, and, therefore, the level and type of support provided by the Regional Partners may vary according to a disaster's characteristics and location.

1.3.2.2 *Long-Term Recovery Planning*

Disaster recovery planning is an ongoing process. Planning efforts begin prior to a disaster unfolding and must continue long after essential services have been restored and debris has been removed. The lingering effects of a disaster can remain for years, or even decades, and communities may require ongoing support. The Framework is rooted in the idea that individuals and households, non-governmental and private sectors, and local, tribal, state, and federal partners must take ownership for continuing to strengthen and revitalize impacted communities in the long-term.

1.3.2.3 *Resilience and Sustainability*

A successful recovery framework promotes practices that minimize a community's risk to future impacts from all hazards and strengthens its ability to withstand and bounce back from future disasters, which constitutes the community's resiliency. Resilience and sustainability relate to all aspects of a community:

- Comprehensive and all-inclusive planning processes that engage all regions of Nevada;
- Thriving economies with diversified and sustainable industries;
- Healthy families, and effective education systems;
- Access to affordable and safe housing and services;
- Infrastructure that stimulates economic growth and provides for future Nevadan needs; and
- Protection of the natural and cultural resources that make Nevada a great place to live, and promote the important tourism industry.

1.3.2.4 *Accessibility and Recovery*

Populations with access and functional needs may be more likely to be impacted by a disaster and may find recovery to be most challenging. This population can include

individuals with or without disabilities who may require specialized support. Special considerations should be made in regards to planning for meeting the needs of these populations.

1.3.2.5 *Coordination with Mitigation Planning Efforts*

Recovery and mitigation are closely linked, with ongoing mitigation planning efforts and implementation of mitigation projects playing a key role in ensuring the county's preparedness to recover. The Washoe County Regional Hazard Mitigation Plan identifies projects that have direct impacts on long-term recovery activities. This Framework recognizes that recovery planning efforts must work in concert with mitigation planning activities and that there may be an overlap between the two aspects of emergency planning.

1.3.2.6 *Equitable Recovery*

The region is unique with many remarkable cities and towns. A large-scale disaster has the potential to affect all corners of the region, and will require concerted effort to ensure all areas receive the resources and support they need. Recovery cannot be achieved until all components of the impacted community have adequately improved. Successful recovery efforts must consider the varying needs and capabilities within the community. Recognition of these varying needs will ensure equitable and effective recovery planning. In addition, it is the responsibility of those leading the recovery efforts to ensure resources are deployed in an equitable and fair manner. Resources will be allocated based upon need, and attention will be paid to all geographies, populations, and interests.

1.3.2.7 *Volunteer and Donation Utilization*

Disaster recovery requires the concerted efforts of the entire community, which includes volunteer organizations and the generosity of the public. The region will work to ensure proper and effective management of volunteers and donations throughout all phases of recovery, with an emphasis on short-term activities. The Region seeks the support of all community members, but places an emphasis on integrating organized groups rather than self-deploying or spontaneous volunteers.

1.4 FRAMEWORK ORGANIZATION

The Framework exists as a standalone document, supported by the Regional Emergency Operations Plan (REOP). It is structured as a Basic Plan supported by RSF annexes.

1.4.1 Basic Plan

The Basic Plan establishes the framework within which Washoe County and its Regional Partners will support recovery efforts during disasters. It consists of the following sections:

- 1. Introduction.** Identifies the authority, purpose, scope, and guiding principles for the plan; describes the plan's organizational structure; and explains the plan's relationship to other planning processes.
- 2. Situation and Planning Assumptions.** Describes the scenarios that the Framework is designed to address; describes the recovery continuum; and identifies special considerations for recovery in the region.
- 3. Roles and Responsibilities.** Assigns essential functions to those with authority and responsibility for disaster recovery in the region.
- 4. Regional Recovery Organization.** Establishes the organization by which the Regional Partners will coordinate recovery activities, and identifies recovery levels to allow for a scalable recovery organization.
- 5. Transition from Response.** Addresses key short-term recovery issues including damage assessment, the declaration process, and disaster assistance programs.
- 6. Recovery Support Functions.** Introduces key roles and responsibilities for members of the regional recovery organization, and identifies Coordinating, Primary, and Supporting agencies and key tasks for each RSF.
- 7. Framework Implementation and Maintenance.** Describes how the Framework will be implemented and sustained to ensure the preparedness of all partner entities.

1.4.2 RSF Annexes

The Framework is supported by a series of RSF Annexes. These annexes break recovery activities out by function and phase, and provide additional detail on Primary and Supporting Agencies, roles and responsibilities, as well as supporting plans and procedures for each function. The Framework includes the following RSF Annexes:

RSF 1. Community Planning and Capacity Building

RSF 2. Economic Recovery

RSF 3. Health and Social Services

RSF 4. Disaster Housing

RSF 5. Infrastructure Systems

RSF 6. Natural and Cultural Resources

1.5 RELATIONSHIP TO OTHER PLANS

1.5.1 National Disaster Recovery Framework

The NDRF defines how federal agencies operate and organize to promote effective disaster recovery and to provide support to local, tribal, and state jurisdictions, which includes partnerships with all levels of government, as well as private and non-profit organizations. It is therefore designed for the use of anyone involved in recovery operations.

The NDRF advances the concept that recovery not only consists of the physical repairs needed by affected communities but also encompasses a wide range of elements to restore communities to pre-disaster vibrancy while rendering them more resilient to future disasters. One way this is accomplished is through a designated structure of six RSFs based on functional areas for which jurisdictions may require assistance. The six RSFs are analogous to the RSFs established in this framework.

1.5.2 State-Level Plans

The State's emergency management organization is anchored by the State Comprehensive Emergency Management Plan (SCEMP) and State Response and Recovery Guide for State, Local, and Tribal Governments.

1.5.2.1 *State of Nevada Disaster Recovery Framework*

The State of Nevada Disaster Recovery Framework provides state agencies with a structure within which to effectively support local communities' recovery from a disaster. Developed within the same planning process as this Framework, the State

Framework establishes a recovery organization, assigns roles and responsibilities, identifies points of coordination and support with local, tribal, and federal governments, and provides a transition from response to recovery operations.

1.5.3 Regional Plans

1.5.3.1 *Regional Emergency Operations Plan*

The REOP is an integrated operational plan based in NIMS. The plan follows an all-hazards approach and is to be utilized following any incident. It outlines a concept for emergency operations, assigns roles and responsibilities, and prescribes management and procedures for the Regional Emergency Operations Center (REOC).

1.5.3.2 *Washoe County Regional Hazard Mitigation Plan*

The RHMP evaluates the Region's risks to various hazards, assesses local capabilities, and identifies important steps to reduce associated risks. The RHMP identifies specific mitigation goals, objectives, and actions that are tailored to specific Regional Partners and specific locations and functions.

1.5.3.3 *Regional Debris Management Plan - in development*

Currently in development, the Regional Debris Management Plan will supplement plans and procedures outlined in the Framework and support the overall regional recovery organization. The plan outlines processes for contracting support, debris clearance, removal, disposal, and monitoring activities.

1.5.3.4 *Volunteer Management Plan*

Volunteer management is of paramount importance during all phases of emergency management, especially during the response and short-term recovery phases. The Volunteer Management Plan establishes an organizational structure and process by which Washoe County can access and manage volunteers and service program resources.

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2. SITUATION AND PLANNING ASSUMPTIONS

Section 2 builds on the scope discussion in Section 1 by profiling scenarios in which the Framework may be used, introducing the recovery continuum, and identifying Framework assumptions.

2.1 SITUATION

The Washoe County region is subject to a variety of hazards that could result in the need for small- or large-scale coordination of recovery activities. Damage from flooding, wildfire, severe winter storms, and earthquakes can have lasting impacts that go unresolved for years. As was witnessed during the 1997 floods, these incidents can affect every facet of life in the region. For this reason, the Regional Partners have developed the Framework.

2.2 PLANNING SCENARIOS

It is most likely that the Framework will be implemented following large-scale or catastrophic events that involve any one or a combination of the following characteristics:

- Exceeds local capacity;
- Causes large-scale economic disruption;
- Disrupts public health or emergency medical and hospital services;
- Displaces a large number of people from their homes;
- Creates widespread damage to infrastructure, including public works and transportation systems; and
- Damages natural or cultural resources.

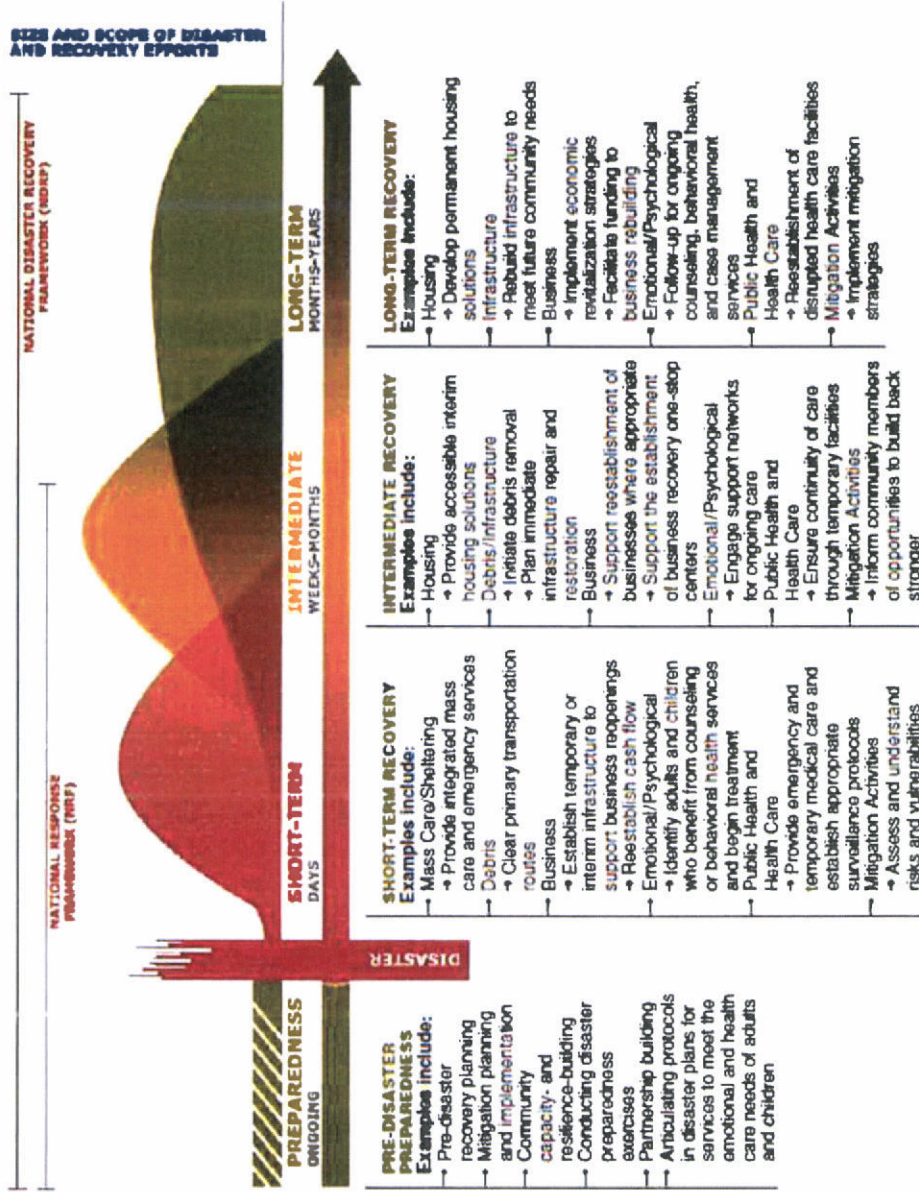
2.3 RECOVERY CONTINUUM

Recovery capacity is defined as the capabilities necessary to assist communities affected by a disaster to effectively recover. Such capabilities include, but are not limited to, rebuilding infrastructure systems; providing adequate interim and long-term housing for survivors; restoring health, social, and community services; promoting economic development; and restoring natural and cultural resources. The timeframes identified below for each phase in the recovery continuum are meant as guidelines, but the timeline of actual recovery activities may vary depending on the size and complexity of the disaster. These timelines of recovery phases overlap one another and may occur at different times depending upon the nature of the disaster. The Framework identifies activities in four phases of disaster recovery:

- Pre-Disaster Planning and Preparedness (Preparing to recover from a disaster);
- Post-Disaster Short-Term (Efforts to stabilize the community);
- Post-Disaster Intermediate (Efforts to rebuild from the disaster); and
- Post-Disaster Long-Term (Efforts to revitalize impacted communities for long-term resiliency and sustainability).

Figure 2-1 below illustrates the overlapping nature of disaster recovery efforts.

Figure 2-1 Recovery Continuum



2.3.1 Preparedness

Focus: Preparing **Timeline:** Ongoing

Preparedness efforts that build community and organization resiliency are paramount to the initiation, implementation, and success of recovery efforts. Specific efforts that must be undertaken in the preparedness phase include:

- Identify hazards, assess risks and vulnerabilities;
- Pre-disaster planning, including maintenance and improvements of this Framework based on lessons learned and after action reports;
- Mitigation planning and project implementation at all levels (local, tribal, state) for natural, technological, and human-caused disasters;
- Build community capacity, including policy development and implementation, resource management, community education, infrastructure protection, recovery organization maintenance, and whole community planning and coordination;
- Conduct disaster preparedness exercises and after action meetings; and
- Partnership building and resource identification activities to ensure full capabilities are in a readied state.

2.3.2 Short-Term Recovery

Focus: Stabilizing **Timeline:** Days to Weeks

Short-term recovery focuses on stabilizing communities to begin recovery. Short-term recovery is often interlaced with the response phase. This phase of recovery addresses health and safety needs beyond rescue, the assessment of damages and needs, the prioritization and restoration of basic infrastructure, and the mobilization of recovery organizations and resources.

Short-term recovery activities may include the following:

- Monitor for secondary and ongoing hazards;
- Mass care and sheltering;
- Identify, assess, and stabilize damaged buildings and infrastructure;
- Begin restoration of essential utilities and services;
- Removal of debris on primary transportation routes;
- Support to businesses with temporary infrastructure;
- Provide ongoing surveillance and response to the public health impacts of a disaster;
- Identify those in need of emotional/psychological support;
- Protect the social safety net;

2. Situation and Planning Assumptions

- Provide emergency and temporary continuity of medical care;
- Assess and understand risks and vulnerabilities to mitigate impacts;
- Protect natural and cultural resources from damage caused by secondary hazards, as well as response and recovery efforts; and
- Request immediate recovery support from the federal government.

Short-term recovery activities are guided by the REOP and coordinated through the Regional Emergency Operations Center (REOC).

2.3.3 Intermediate Recovery

Focus: Rebuilding **Timeline:** Weeks to Months

Intermediate recovery focuses on rebuilding the community. This phase of recovery involves returning individuals, families, critical infrastructure, and essential government or commercial services to a functional, if not pre-disaster state. Such activities are often characterized by temporary actions that provide a bridge to permanent measures.

Intermediate recovery activities may include the following:

- Provide interim housing;
- Repair and restore infrastructure;
- Provide support to reestablish businesses;
- Engage support networks to provide ongoing emotional/psychological support to those in need;
- Provide economic support to impacted individuals (i.e., employment assistance);
- Ensure continuity of public health and health care services;
- Provide social services assistance to vulnerable populations, including food programs, unemployment programs, and self-sufficiency programs;
- Restructure zoning and development codes to protect against future losses;
- Mitigate future impacts through education of the community on ways to rebuild stronger and more resilient infrastructure and housing; and
- Provide systematic updates to the public regarding the status of recovery efforts.

2.3.4 Long-Term Recovery

Focus: Revitalizing Timeline: Months to Years

Long-term recovery focuses on revitalizing the community. This phase of recovery may continue for years and addresses complete redevelopment and revitalization of the impacted area; rebuilding or relocating damaged or destroyed social, economic, natural, and built environments; and the transition to lasting self-sufficiency, sustainability, and resilience.

Long-term recovery activities may include:

- Provide long-term housing solutions;
- Rebuild stronger and smarter infrastructure to meet future needs;
- Implement long-term economic revitalization;
- Provide ongoing psychological/emotional support;
- Reestablish disrupted public health and health care resources;
- Revitalize and protect natural systems affected by the disaster;
- Ensure continuation of key social services; and
- Implement long-term mitigation strategies.

2.4 FRAMEWORK ASSUMPTIONS

The Framework is based on the following assumptions:

- Large-scale disasters may occur in Nevada in both rural and urban settings and may take place in multiple locations simultaneously;
- Recovery activities will be initiated concurrently with response and will occur in short-term, intermediate, and long-term phases, with the initial focus on population protection;
- Prompt and effective recovery operations will require coordination across the whole community, including emergency services, disaster relief, volunteer organizations, the private sector, and the public. All entities requested to assist will do so to the fullest extent of their ability;
- Recovery will be managed at the local level, with regional support provided as local capabilities or resources are exceeded;
- The REOC will be activated and implementation of the REOP will begin before emergency conditions subside. This allows recovery actions to be implemented according to this Framework, quickly and efficiently;
- Implementation of regional recovery operations will require partnerships between local, tribal, state, federal, voluntary organizations, and private partners;

2. Situation and Planning Assumptions

- Events that do not meet damage threshold standards for federal assistance may require more long-term recovery actions by local, tribal, and state agencies to make up for the lack of federal assistance program resources;
- Regional level planning efforts may not rely on the assumption that state and federal assistance will be available;
- Catastrophic disasters of national significance will be subject to modified, expedited actions and will not follow routine information gathering and detailed analysis of data prior to seeking supplemental federal disaster assistance; and
- Short-term recovery operations are driven by the REOC Recovery Unit, which will address essential and immediate community needs by restoring vital services, stabilizing the situation, and preserving property. These short-term operations frequently overlap with the response operations, as well as intermediate and long-term recovery operations.

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3. ROLES AND RESPONSIBILITIES

Section 3 outlines the responsibilities of agencies and positions active during regional recovery operations. Certain positions will have already been activated during the response phase, while other positions may only be activated during recovery operations.

3.1 POLICY

Priorities, goals, and objectives drive regional recovery operations. These policy decisions will be guided by elected officials and the MAC Group. These will be disaster-specific and will provide a roadmap to ensure a community will recover, rebuild, and revitalize following a disaster.

3.1.1 Elected Officials

Elected officials are responsible for meeting the needs of the region and its people in the event of emergencies and disasters. This responsibility applies to the response to, and recovery from, such disasters.

Following the declaration of a state of emergency, elected officials have the authority to shift resources to meet emerging needs, as allowed under specific jurisdictional law. When a major redirection of resources is required, elected officials are responsible for seeking authorizations and/or appropriations of funds.

3.1.2 MAC Group

When conditions warrant, the MAC Group may be assembled. In the context of recovery, members of the MAC Group recommend the policy, funding, and resource orientations of the REOC, and make the executive and legislative decisions necessary to enable members of the Coordinating Team to implement these orientations.

Additional responsibilities of the MAC Group include:

- Provide recommendations regarding policies, procedures, and priorities outlined within the Framework.
- Evaluate recommendations to promote coordination among the six RSFs.

Refer to the REOP for more details related to the MAC Group.

3.2 REGIONAL PARTNER EMERGENCY MANAGEMENT PROGRAMS

Each Regional Partner's respective emergency management program is designated to prepare all requests for jurisdictional disaster assistance.

3.3 COORDINATING TEAM

Coordination of recovery activities is managed primarily through the REOC and REOC ICS Positions and RSFs. The REOP tasks the Emergency Manager with ensuring that the county is prepared to deal with any disaster. This includes the recovery from such a disaster. It is the responsibility of the Emergency Manager to ensure overall coordination of the Regional recovery organization. REOC recovery personnel are responsible for executing the decisions and recovery orientations taken by the MAC Group using the tools and resources made available.

Members of the Coordinating Team are outlined in this section.

3.3.1 Local Disaster Recovery Manager

As the region's efforts transition to recovery, an LDRM may be designated, who will coordinate the region's recovery activities, including oversight of activated RSFs, in response to requests for assistance expressed at the local and/or tribal level, as well as directions flowing from the MAC Group.

The role of the LDRM will be appointed by the MAC Group with input from Regional Partners' elected officials. The LDRM will be chosen dependent upon situation scope and partner capacity and capability.

Pre-disaster responsibilities of the LDRM include the following:

- Serve as the primary point of contact for disaster recovery preparedness with local, tribal, and federal governments, and liaising with their counterpart at the state level - the State Disaster Recovery Coordinator (SDRC);
- Coordinate development, training, and exercise of disaster recovery plans and procedures;
- Establish and maintain networks for disaster recovery resources and support systems; and
- Promote resiliency and sustainability and their integration into disaster recovery principles.

Post-disaster responsibilities of the LDRM include the following:

- Establish and lead regional recovery activities, and provide support to Regional Partner governments impacted by a disaster;
- Serve as intake point for all recovery support requests from community partners;
- Communicate the expectations, and roles and responsibilities of the region to other local and tribal governments;
- Work with counterparts at the local, tribal, and federal levels of government to develop a unified communication strategy;
- Support recovery planning processes that are inclusive of all aspects of the community;
- Facilitate communication of recovery priorities for all impacted communities;
- Encourage incorporation of resiliency and sustainability into ongoing recovery efforts;
- Coordinate with all levels of government to determine funding streams to facilitate recovery efforts; and
- Develop and track recovery progress measures and communicate needed adjustments to applicable stakeholders and authorities.

3.3.2 Regional Partner Departments and Agencies

All directors of county, local, and tribal departments are responsible for contributing their department's resources to the efforts of the regional recovery organization as requested by their elected officials, within the limits of their legal authorities and available resources.

See RSF Annexes for function-specific roles and responsibilities of regional agencies active during recovery operations.

3.4 REOC STAFF

The REOC may remain fully or partially activated through one or more phases of recovery operations.

3.4.2 REOC Director

The REOC Director coordinates the rendering of all regional assistance, and is responsible for overall management and operation of the REOC. Upon request and approval, the REOC Director will issue mission assignments to the appropriate Operations Section unit to fulfill. All requests for assistance are reviewed and prioritized by the REOC Director. The REOC Director will coordinate with the REOC

Sections to fulfill these requests. All requests for assistance, and REOC ICS Positions designated to respond to the request, are tracked in the REOC.

3.4.3 RSFs and the Transition from Response

As the EOC's Operations Section facilitates effective response operations, RSFs are the organizing principle behind the region's support to the community. As response activities decrease, a shift from response to RSF organization may occur. Lead response agencies will work with the Coordinating Agencies for each RSF to ensure an effective and efficient handoff of operations. To ensure effective coordination, a transition from response units to RSFs will also coincide with a transition of operations being coordinated by the REOC Director to the LDRM.

RSFs mobilize the authorities and expertise of multiple county, local, and tribal departments under the appropriate Coordinating Agency that ensures delivery of county support. Each RSF also includes Primary and Supporting Agencies, designated as such due to the frequency and degree of their involvement in the RSF's scope of operations. RSF Coordinating Agencies report to the LDRM and channel requests for other RSFs and/or external support through the LDRM.

RSF organization is explained in detail in Section 6 - Recovery Support Functions.

3.4.4 REOC Sections

As response and immediate recovery efforts decrease, REOC sections may remain activated but may shift their efforts from response to recovery-focused functions.

3.4.4.1 *Operations Section*

- Implement the Preliminary Damage Assessment.
- Establish Disaster Recovery Centers.
- Coordinate all resources and assets in the field and available through partners.
- Organize and deploy recovery assignments.
- Manage operational objectives of the recovery effort.
- Implement the priorities outlined within the Recovery Action Plan.

3.4.4.2 *Planning Section*

- Collect, evaluate, process, and disseminate information about impacts, recovery needs, and the status of resources.
- Assist with damage assessment needs.
- Assist with the completion of the Recovery Action Plan.

3.4.4.3 Logistics Section

- Procure and deploy resources for recovery operations.
- Acquire additional resources as requested.

3.4.4.4 Finance Section

- Track financial impacts of the recovery efforts to include recordkeeping, time and expenses, funding sources, resources, mutual aid, and contracts.
- Oversee contracting and acquisition of resources.
- Track state and federal grant funding for the recovery effort.

3.5 RELATIONSHIP TO FEDERAL, STATE, TRIBAL, AND LOCAL ORGANIZATIONS**3.5.1 Federal Recovery Organization**

Federal recovery policy is ultimately the responsibility of the President of the United States and the United States Congress. The coordinating team in the federal response and recovery organization is described by the NRF and the NDRF.

Per the NRF, the principal agent in domestic incident management is the Secretary of Homeland Security. The Administrator of FEMA assists the Secretary and the President in implementing response and recovery activities.

In cases where an emergency or major disaster is declared under the Stafford Act, an FCO is appointed to coordinate federal government actions in the response and short-term recovery phase. As the level of disaster response activities declines, an FDRC takes on the responsibility of coordinating intermediate and long-term recovery.

Refer to the NDRF for further detail on the Federal Recovery Organization.

3.5.2 State Recovery Organization

The state recovery organization is designed to provide both policy direction for recovery activities as well as coordination of recovery support to impacted partners. The state recovery organization coordinates with the federal recovery management structure and local and tribal recovery organizations to harness federal and state resources in assisting with recovery.

Refer to the State of Nevada Disaster Recovery Framework for further detail on the State Recovery Organization.

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4. REGIONAL RECOVERY ORGANIZATION

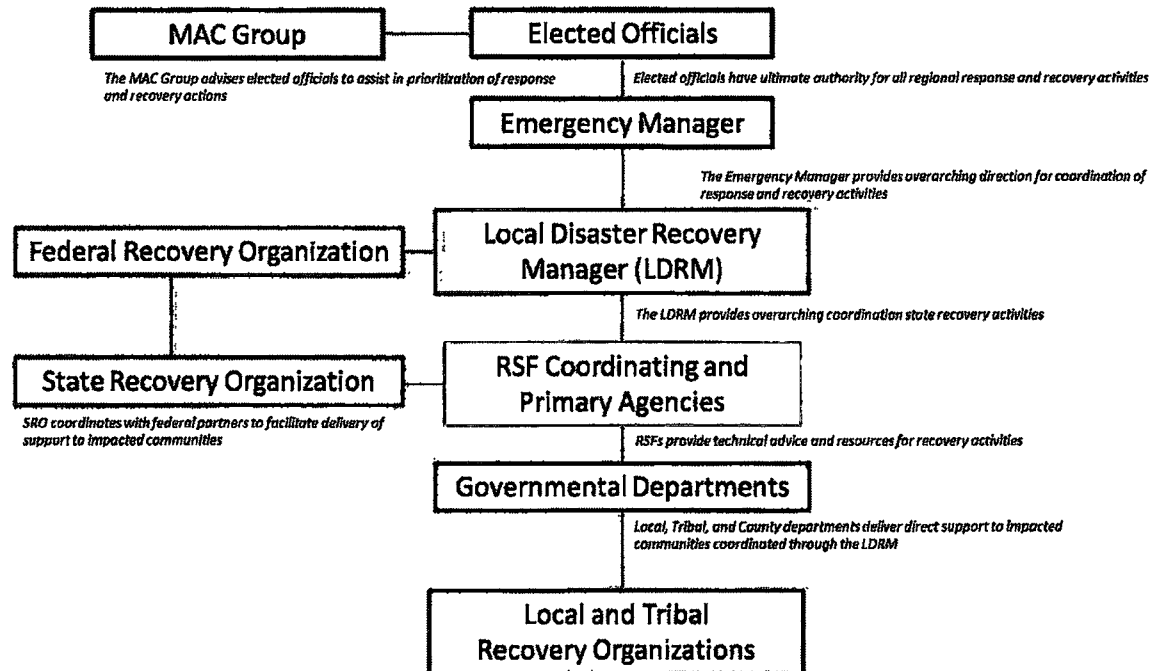
Section 4 provides a concept for coordinating and organizing regional recovery operations. The region will organize based upon needs from a specific disaster, and this organizational structure may change through the phases of recovery. The section also outlines key structural components related to the regional recovery organization including activation, establishment of operations/coordination centers, recovery action planning, public information, information sharing, and demobilization.

4.1 OVERVIEW

Regional Partner emergency management programs are the primary agency for disaster recovery, will staff the REOC, and will coordinate with appropriate support agencies, local, tribal, and county governmental entities.

The regional recovery organization is designed to provide both policy direction for recovery activities as well as coordination of recovery support to impacted partners. The regional recovery organization coordinates with the regional recovery management structure to harness federal, state, and regional resources to assist recovery. An organizational chart representing how the region will organize recovery operations is provided in Figure 4-1.

Figure 4-1 Regional Recovery Organization



4.2 COORDINATION

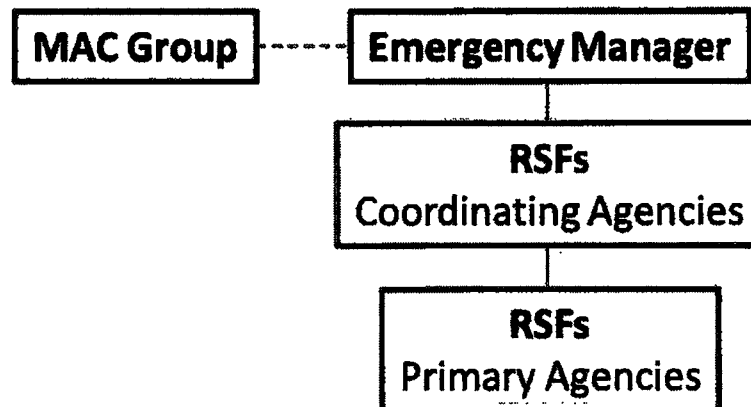
The regional recovery organization relies upon a flexible structure to ensure recovery efforts seamlessly meld with and feed off existing procedures and coordination mechanisms. These mechanisms will change as operations move through the phases of disaster recovery. The following subsections outline those mechanisms.

4.2.1 Preparedness/Steady State Coordination

The regional recovery organization exists in a state of preparedness prior to a disaster unfolding. The organizational structure of the regional recovery organization in a preparedness/steady state is shown in Figure 4-2. During the preparedness/steady state, the regional recovery organization will be coordinated as follows:

1. Recovery planning efforts will be coordinated through the Emergency Manager of the appropriate Regional Partner using the planning procedures outlined in the Framework and supporting documents.
2. Policy and planning recommendations and prioritizations will be provided by the MAC Group.
3. The Emergency Manager will facilitate planning processes in collaboration with the RSF Coordinating and Primary Agencies.
4. RSF Primary and Supporting Agency involvement will depend upon the specific planning needs and priorities.
5. Public information may be provided through normal mechanisms, and agency-specific recovery planning outreach will be coordinated through the responsible agency.

Figure 4-2 Preparedness/Steady State of Regional Recovery Organization

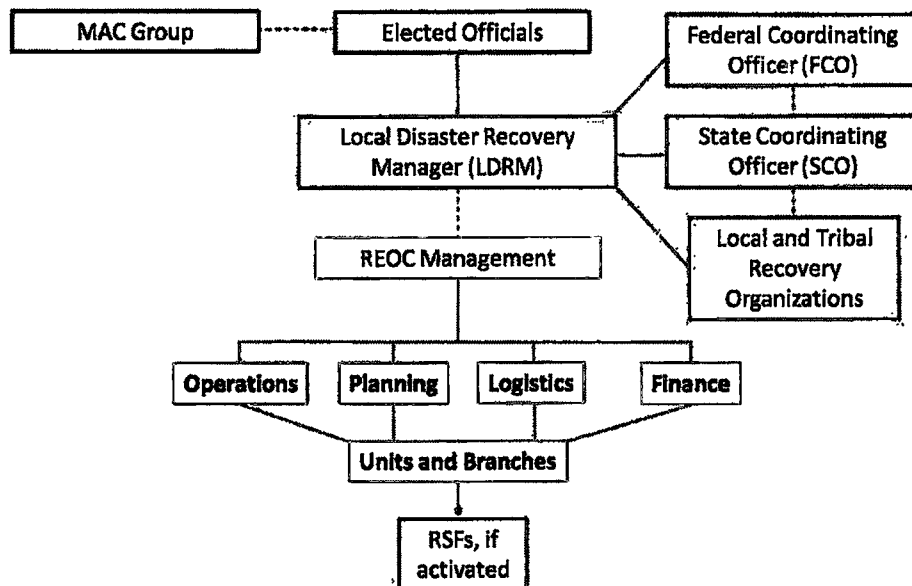


4.2.2 Short-Term Recovery Coordination

The organizational structure of the regional recovery organization in short-term recovery is shown in Figure 4-3.

1. Short-Term Recovery activities will be coordinated through the REOC using the procedures outlined in the REOP, the Framework, and supporting plans.
2. The REOC will be managed using the Incident Command System (ICS) and will be managed by the REOC Director.
3. Policy direction will be provided by the MAC Group.
4. Public information will be provided through the REOC Public Information Officer or JIC.
5. As required by the disaster, REOC ICS Positions may be activated to coordinate function-specific assistance to aid response and short-term recovery activities.
6. Initial coordination of recovery support at the REOC is the responsibility of the Recovery Unit. The Recovery Unit will be responsible for developing an initial Recovery Action Plan (refer to Section 4.7), in coordination with the REOC Operations Section Chief and Planning Section Chief.
7. As immediate response activities ramp down, REOC ICS Positions may be deactivated or transitioned to an RSF that will support coordination of function-specific activities as operations transition into recovery. An RSF may be staffed by the same personnel from the transitioned REOC ICS Positions or may be passed on to more appropriate personnel based on recovery needs.

Figure 4-3 Short-Term Regional Recovery Organization

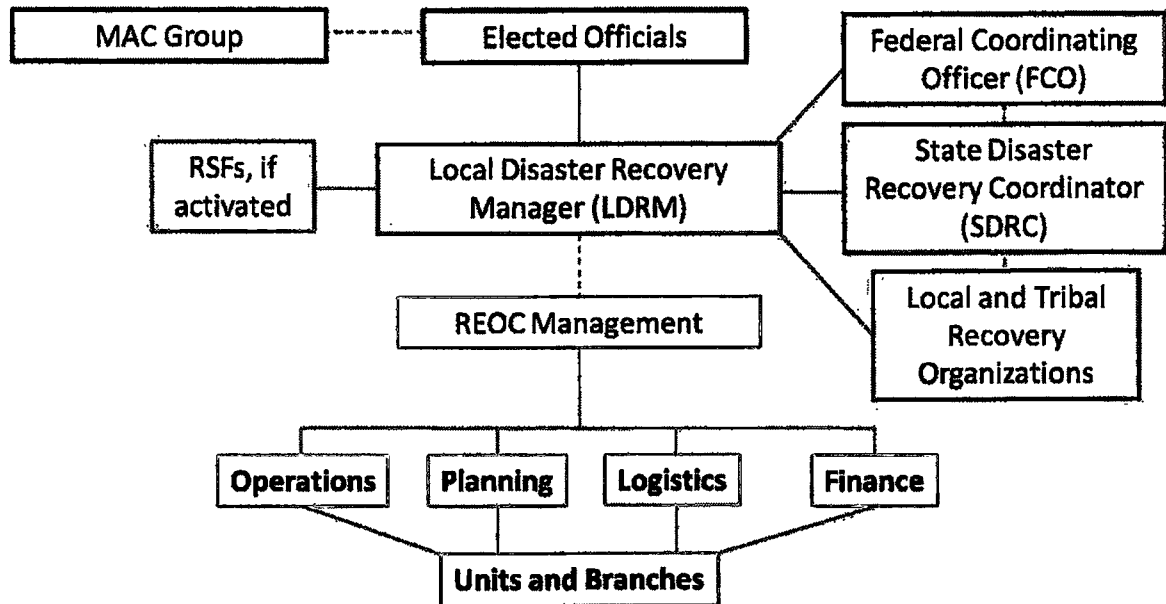


4.2.3 Intermediate Recovery Coordination

The organizational structure of the regional recovery organization in intermediate recovery is shown in Figure 4-4.

1. During a large-scale disaster, Intermediate Recovery activities may continue to be coordinated through the REOC, which may have transitioned to a focus on recovery.
2. The LDRM will coordinate overarching and primary recovery objectives and activities.
3. Recovery will continue be managed using the ICS. The LDRM will serve in the role of Incident Commander.
4. The MAC Group will continue to provide overarching policy guidance to the regional recovery organization.
5. Public information may continue to be coordinated through the PIO.
6. The LDRM, in coordination with activated RSFs, will be responsible for ongoing development and updates of the Recovery Action Plan.
7. At this point, all REOC ICS Positions will have been demobilized or transitioned to the appropriate RSF.

Figure 4-4 Intermediate Regional Recovery Organization

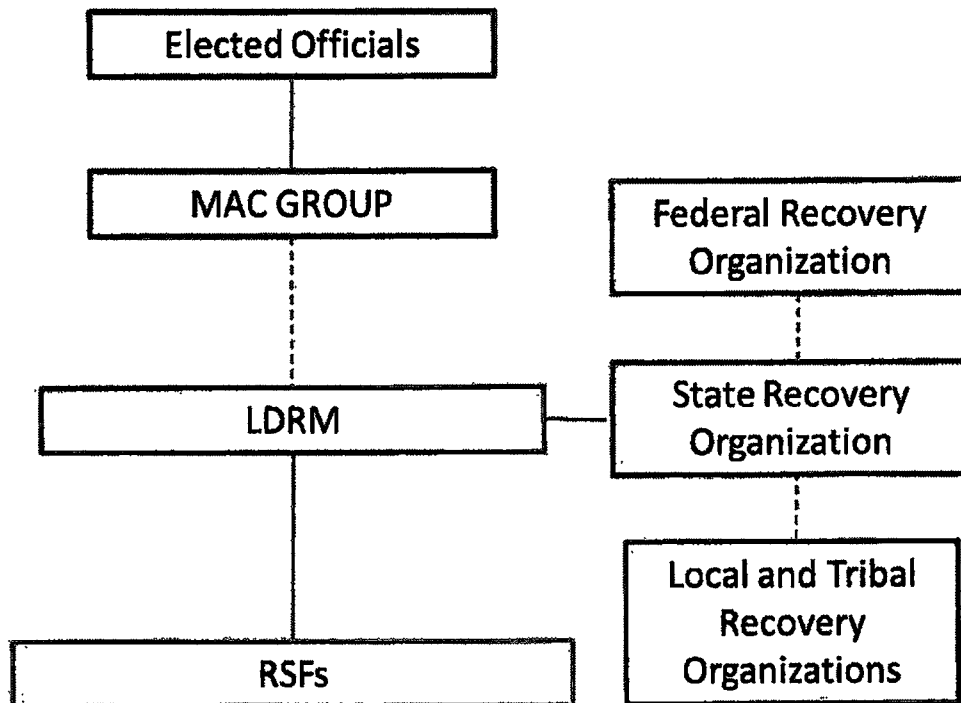


4.2.4 Long-Term Recovery Coordination

The organizational structure of the regional recovery organization in long-term recovery is shown in Figure 4-5.

1. When the decision to demobilize the REOC is made, Long-Term Recovery coordination may continue using the same structure presented for Intermediate Recovery but virtually rather than in a defined physical location.
2. The LDRM will continue to coordinate with the recovery management structure and any remaining RSFs.
3. The MAC Group will continue to provide overarching policy guidance to the SRO.
4. The Public Information Officer will continue to provide updates and information as required by recovery milestones.
5. The LDRM, in coordination with activated RSFs, will be responsible for ongoing development and updates of the Recovery Action Plan.
6. The LDRM, in coordination with the MAC Group, will determine RSF status, needs, and the overall regional recovery organization may demobilize.

Figure 4-5 Long-Term Regional Recovery Organization



4.3 ACTIVATION

Activation of the regional recovery organization typically follows prior activation of the county's response functions as described in the REOP. The only exception to this is the MAC Group, which may be activated prior to an anticipated disaster. It should be noted that RSFs also exist in the preparedness phase, even when they are not activated (see Section 6 - Recovery Support Functions).

This section describes the typical levels of activation for the regional recovery organization, and the portions of the regional recovery organization typically activated at each level.

4.3.1 Levels of Recovery

Activation of the regional recovery organization is scalable based on the level of outside assistance required and aligns with the REOC Activation Levels outlined in the REOP. Certain communal aspects may require a higher degree of recovery assistance (i.e., a flood heavily affecting a residential area but not impacting the community's economic structure). The following Recovery Activation Levels, outlined in Table 4-1, are based on levels of mobilization, the potential for major disaster declarations, and the anticipated complexity of the recovery.

Table 4-1 Recovery Activation Levels			
Level	REOC Status	Emergency Operations	Minimum Staffing
N/A	Not activated	Routine responses are managed by field-level ICS structures with no County EOC support needed. REOC operations comprise planning, training, exercises, and other proactive activities.	<ul style="list-style-type: none"> • No REOC personnel are required outside of regular daily REOC staff required to maintain the facility in a ready state
1: Monitoring	Not activated Maintaining situational awareness	A potentially significant incident is impending or underway and is being managed by one or more local jurisdictions at the field and/or local EOC level. Situation is monitored and assessed for need of additional resource support.	<ul style="list-style-type: none"> • Teleconference between MAC Group members • Potential notification of partial or full Crisis Action Team • Other designees as required by the REOC Director
2: Dynamic Emergency	Partially activated	A potentially significant incident is impending or underway and is being managed by one or more local jurisdictions at the field and/or local EOC level. The REOC is activated to provide support to local response operations.	<ul style="list-style-type: none"> • REOC Director • MAC Group • REOC Section Chiefs, Branches, and Units as appropriate to the incident • Liaison/Agency representatives as appropriate
3: Regional Emergency	Fully activated	One or more significant incidents are underway. Field-level ICS structures are operational, with local EOCs supporting them. The REOC and all functional elements are operational.	<ul style="list-style-type: none"> • All REOC positions at the discretion of the Regional Partners/REOC Director

4.4 REGIONAL EMERGENCY OPERATIONS CENTER

The activation of the REOC occurs in order to support emergency conditions with regional partner-owned resources, to provide technical expertise, as well as to coordinate information.

Refer to Section 5 of the REOP for more information on the REOC.

Key elements of the regional recovery organization will be present within the REOC as soon as it has been activated. The presence of regional recovery organization personnel will ensure that decision-making processes take into account their impact on short-term, intermediate, and long-term recovery efforts.

As the intensity of immediate response activities decrease, the REOC may shift its efforts toward recovery planning and coordination. In anticipation of a transition toward recovery efforts, a recovery transition meeting should be held to discuss immediate priorities and needs. At the meeting, the Recovery unit will facilitate the handoff from REOC response units to RSFs. This meeting will produce the initial Regional Recovery Action Plan (RAP). A template Recovery Action Plan can be found in Appendix E of the Framework. In addition, a Sample Recovery Transition Meeting Agenda can be found in Appendix F.

Many short-term recovery efforts may be coordinated through the REOC, but as efforts shift into intermediate and long-term activities, the REOC function may be unnecessary or burdensome. During this transition, recovery efforts may take place on a project-by-project basis and coordination may occur through a number of mechanisms:

- Regular or interval in-person or conference call meetings;
- Intermittent REOC activation;
- Field or project site coordination; and
- Regular email updates of progress and support requests.

4.5 DISASTER RECOVERY CENTERS

The county may establish or support the establishment of Disaster Recovery Centers (DRCs) throughout disaster areas to provide communities with information on a range of assistance programs. Federal, state, local, and tribal agencies, community partners, subject matter experts, NGOs, and the private sector may be present to support the following:

- Guidance regarding the disaster recovery;
- Clarification of any written correspondence received;
- Assistance program information (to be further discussed in Section 5);
- Answers to questions, resolution to problems, and referrals to agencies that may provide further assistance;
- Status of application being reviewed and processed by FEMA, state agencies, and other support partners;
- Small Business Administration (SBA) information;
- Crisis counseling support;
- Disaster legal services to include insurance policy clarification; and
- Unemployment services.

4.6 REGIONAL RECOVERY ACTION PLANNING

The RAP is the guiding document that establishes the unified approach of the MAC Group, the LDRM, and the activated RSFs. The RAP is not meant to replace local or tribal recovery strategies, but rather to identify recovery needs and issues and how the regional recovery organization is mobilizing to address them.

Completion of the RAP will support the following goals of the regional recovery organization:

- Assess recovery-related impacts in relation to existing capabilities at the local, tribal, and state levels;
- Identify which impacted jurisdictions may require enhanced regional recovery support;
- Identify gaps in resources that may or may not be filled by regional support;
- Determine the breadth of support needed from each RSF;
- Establish timelines for recovery support activities; and
- Identify issues and challenges.

The initial RAP is developed by the LDRM, in coordination with activated RSFs and REOC Planning Section. The LDRM will also engage other Regional Partners in its development to ensure that there is coordination between the region's objectives and Regional Partner priorities.

The targeted goal for completion of the initial RAP is within 45 to 90 days of activation of the regional recovery organization. The actual milestones and timelines for scoping the region's recovery support mission and developing the RAP will be determined by the LDRM, in consultation with the RSFs. Recovery timelines will take into account:

- Type of recovery support and deliverables to be provided;
- Methods for tracking the effectiveness of the support being provided; and
- Measures to ensure effective coordination and collaboration.

The RAP will be approved by the MAC Group, and the LDRM is responsible for coordinating its implementation. The RAP will be reevaluated throughout the recovery effort and during transition periods between short-term, intermediate, and long-term recovery activities.

A sample RAP form can be found in Appendix D.

4.7 PUBLIC INFORMATION

Emergency public information is a cornerstone to an effective response but is frequently an afterthought as the intensity of response operations decrease. An effective public information program is critical to ensuring an effective recovery. Public information will continue throughout short-term, intermediate, and long-term recovery phases and will be coordinated through the LDRM, or their designee, and activated RSF Primary Agencies. An effective public information program through the recovery phases should include the following:

Table 4-2 Public Information Throughout Recovery Phases

Short-term
<ul style="list-style-type: none"> ▪ A summary of the known impacts regarding the disaster and actions taken. ▪ Ongoing public safety warnings and information. ▪ Shelter locations and information. ▪ Emergency Medical Services information. ▪ Infrastructure, services, and business damage and closure notices. ▪ Service restoration information releases. ▪ Contact information for existing resident and community needs.
Intermediate
<ul style="list-style-type: none"> ▪ Financial assistance information. ▪ Temporary housing inquiries. ▪ Tourism outreach and business re-opening notices. ▪ Ongoing recovery effort updates.
Long-term
<ul style="list-style-type: none"> ▪ Ongoing community recovery and revitalization effort updates. ▪ Permanent housing inquiries. ▪ A summary of actions taken to recover from the disaster. ▪ Lessons learned and preparedness information for community members.

4.8 INFORMATION SHARING AND SITUATIONAL AWARENESS

Information sharing tactics outlined within the REOP will continue to be deployed to ensure situational awareness. All RSFs will provide information updates to Emergency Management and RSF Primary Agencies, who will provide these updates to the LDRM. Information sharing will include:

- An accurate analysis of ongoing hazards and their impacts on communities;
- Estimates of the costs of those impacts;
- A list of impacted critical infrastructure and needs;
- List of resources available for the recovery operation; and
- Intelligence information pertaining to the recovery operation.

4.9 DEMOBILIZATION

Demobilization is a function of the activated entities in the regional recovery organization.

The LDRM activates and demobilizes RSFs as needed, based on requests from the MAC Group and other Regional Partners, and coordinates needs with the regional recovery organization. RSFs may be demobilized and deactivated at varying points during the overall recovery operation.

In cases where the LDRM is selected within the Emergency Management and Homeland Security Program, the Emergency Manager activates and demobilizes the LDRM. If the LDRM is appointed by an elected official, the LDRM is demobilized by the elected official.

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5. TRANSITION FROM RESPONSE

Section 5 establishes a process for transitioning regional operations from a focus of response to one focused on recovery. The section outlines key activities to prompt this transition.

5.1 REGIONAL RESPONSE

Once the immediate response phase has been completed, the region will turn towards recovery to restore government function and community services. During a large-scale disaster, a transition from response to recovery may occur at different times in different areas of the county.

Maintaining the concept that “all emergencies are local,” county government responds with all available resources to save lives, preserve health, protect public infrastructure and prevent damage to property. This includes any resources available through automatic or mutual aid agreements. Resources are identified as equipment, personnel, and funding necessary to respond. When depletion of resources becomes eminent, a request for assistance is forwarded to the state.

See State of Nevada Disaster Recovery Framework for more details on State and Federal Response.

5.2 TRANSITION TO SHORT-TERM RECOVERY

Short-term recovery activities will commence while response activities are ongoing. These activities may be coordinated through the REOC and its existing structure with the RSFs integrated directly into the structure.

5.2.1 Damage Assessment

Damage assessment activities may begin during the immediate response to a disaster. These initial assessments will provide the regional recovery organization with key details to inform intermediate and long-term recovery activities.

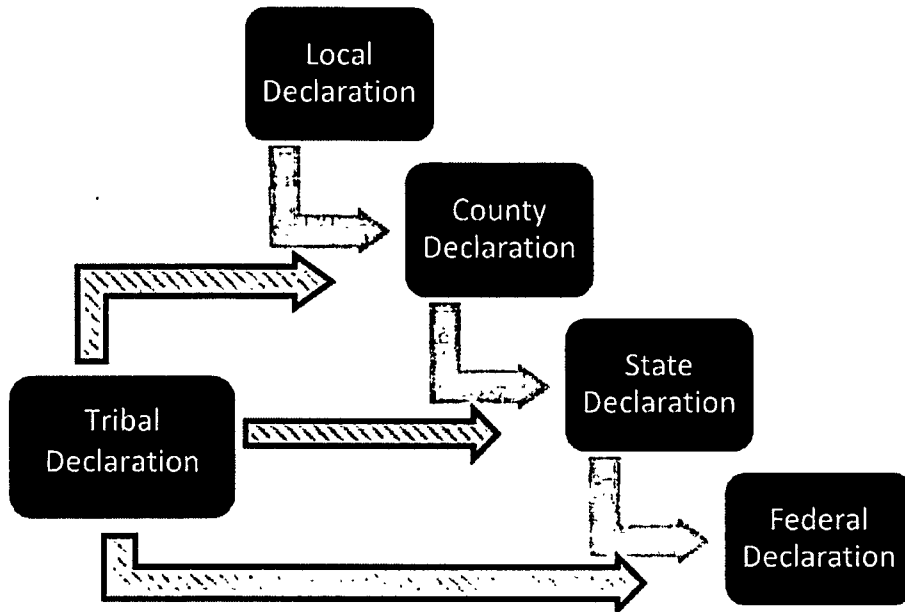
See State of Nevada Disaster Recovery Framework for more details on the damage assessment process.

5.2.2 Declaration Process

The emergency declaration process paves the way for receiving state and federal response and recovery resources. In addition, the declaration provides the public with an understanding of the magnitude of the disaster, and the government’s concern for

the impacted community. Additional information related to the declaration process can be found in the REOP. The declaration process is outlined in Figure 5-1.

Figure 5-1 Emergency Declaration Process



See State of Nevada Disaster Recovery Framework for details on State and Federal declaration process.

5.2.3 Disaster Assistance

When a disaster or emergency occurs, which overwhelms the capability of a local government to recover effectively, assistance from the state and federal government may become necessary to stabilize the event.

See State of Nevada Disaster Recovery Framework for details on State and Federal assistance.

5.3 TRANSITION TO INTERMEDIATE AND LONG-TERM RECOVERY

A timeframe for the transition into longer-term recovery activities may vary based on the nature and complexity of a given disaster. Typically, a decrease of short-term recovery activities may coincide and overlap with an increase in intermediate and long-term recovery activities. Not all functions and efforts within the overall recovery operation may follow the same timeframes for transitions, as certain portions and aspects of a community may have been impacted more adversely than others may.

Response and short-term recovery activities will largely be driven through concepts outlined in the REOP and coordinated through REOC ICS Positions. However, upon a move toward intermediate and long-term recovery activities, a more comprehensive, recovery-focused planning tool may be required. County activities may then largely be driven by the Framework and coordinated through RSFs.

As recovery operations progress, county support and resources may decrease, and information sharing with federal, state, local, tribal, and community partners will serve to ensure efforts continue in earnest.

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6. RECOVERY SUPPORT FUNCTIONS

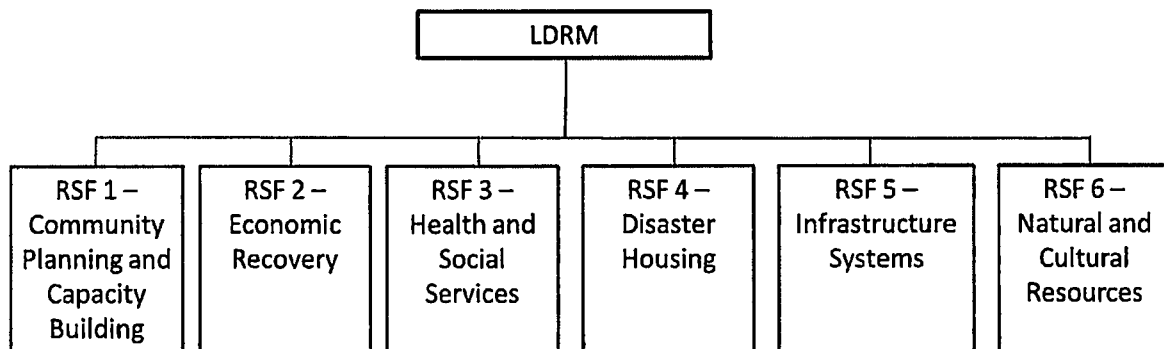
Section 6 introduces the concept of Recovery Support Functions (RSFs) and provides an overview of key activities to be carried out by each of the six RSFs.

6.1 OVERVIEW

RSFs are the organizing principle behind the region’s recovery support. Recovery processes are largely driven by the specific needs of a recovery, and are flexible and scalable. Dependent upon the disaster, RSFs may be required to support and augment the efforts of one another. The RSF organizational structure is outlined in Figure 6-1. The six county RSFs are:

- RSF 1 - Community Planning and Capacity Building;
- RSF 2 - Economic Recovery;
- RSF 3 - Health and Social Services;
- RSF 4 - Disaster Housing;
- RSF 5 - Infrastructure Systems; and
- RSF 6 - Natural and Cultural Resources.

Figure 6-1 RSF Organizational Structure



6.1.1 Preparedness

RSFs require continual planning, training, and maintenance to ensure operational preparedness. The role of an RSF may change over time as regional capabilities and capacities change. The Coordinating Agency of each RSF should regularly convene representatives from the identified Primary Agencies to ensure necessary plans and procedures are in place to support prompt action upon activation of the RSFs. Supporting Agencies should also be engaged to ensure preparedness and identify potential needs. In addition, the following activities should take place prior to a disaster, and on an ongoing basis:

- Ensure the proper identification of partners;
- Identify gaps in recovery services and align these gaps with the proper RSF;
- Collaborate on delivery and support mechanisms;
- Identify future support and resource needs; and
- Consider potential changes that could impact current support mechanisms (e.g., climate and hazards, demographics, funding sources).

6.1.2 Activation and Transition from REOC ICS Positions

RSFs will be activated as soon as it is apparent that a disaster's impacts exceed the capabilities of existing response and short-term recovery plans and procedures, as described in the REOP. As described in the Recovery Continuum in Section 2.3, the phases of recovery are not static, but overlap with one another. Certain REOC ICS Positions, identified in the REOP may transition and morph into RSFs, while other REOC ICS Positions may continue performing response operations. RSFs may be activated to varying degrees and at varying times. It is possible that not all RSFs are required and, in these cases, some RSFs may not be activated. The activation of RSFs will be coordinated through the REOC and the LDRM to ensure a thoughtful handoff from response to recovery. Potential triggers of an RSF activation include:

- Identification of intermediate and long-term community needs;
- Requests for regional support; and
- The activation of local recovery operations.

The LDRM works with the Coordinating Agency for each RSF to identify existing short-term objectives, as well as define intermediate and long-term objectives. These objectives will be accompanied by performance measurements and critical tasks to ensure milestones in the recovery operation are met.

The Coordinating Agency is responsible for coordinating the transition from REOC ICS Positions to their respective RSFs. Lead departments for each unit are responsible for supporting this transition. Table 6-1 identifies the responsible agencies in response and recovery.

Table 6-1 Transition from Response Positions to RSFs	
REOC Units and ICS Positions	RSFs
Public Information Officer Logistics Section Chief Personnel Unit (Logistics) Services Branch (Logistics) Support Branch (Logistics) Resource Status Unit (Planning) Recovery Unit (Planning)	RSF 1 - Community Planning and Capacity Building
Logistics Section Chief Finance Section Chief Recovery Unit (Planning)	RSF 2 - Economic Recovery
Medical Unit (Operations) Public Health Unit (Operations) Coroner Unit (Operations) EMS/REMSA (Operations) Care and Shelter Unit (Logistics) Recovery Unit (Planning)	RSF 3 - Health and Social Services
Care and Shelter Unit (Logistics) Facilities Unit (Logistics) Recovery Unit (Planning)	RSF 4 - Disaster Housing
Lifeline Utilities Unit (Operations) All Other Utilities Units (Operations) Truckee Meadow Water Authority (Operations) Associated General Contractors (Operations) Debris Management (Planning) Damage Assessment (Planning) Recovery Unity (Planning)	RSF 5 - Infrastructure Systems
All Utilities Units (Operations) Truckee Meadow Water Authority (Operations) Hazardous Materials (Operations) Water Resources (Operations) Debris Management (Planning) Damage Assessment (Planning) Recovery Unity (Planning)	RSF 6 - Natural and Cultural Resources

Upon activation of an RSF, the LDRM may seek resources to increase the capacities and capabilities of the RSF. These resources may also be requested by the Coordinating Agency, in collaboration with Primary and Supporting Agencies.

RSF	Primary Focus
RSF 1 - Community Planning and Capacity Building	Long-range and master plans, community planning, land use, permitting, zoning
RSF 2 - Economic Recovery	Assessment, re-development, business, tourism
RSF 3 - Health and Social Services	Public health system, environmental risk, mental health, unmet needs, advocacy, social systems
RSF 4 - Disaster Housing	Housing programs, Community Development Block Grant, shelter
RSF 5 - Infrastructure Systems	Utilities, flood control, engineering, roadways/bridges, debris management
RSF 6 - Natural and Cultural Resources	Trails, rivers, parks, historical sites, animal species, records, art, museums

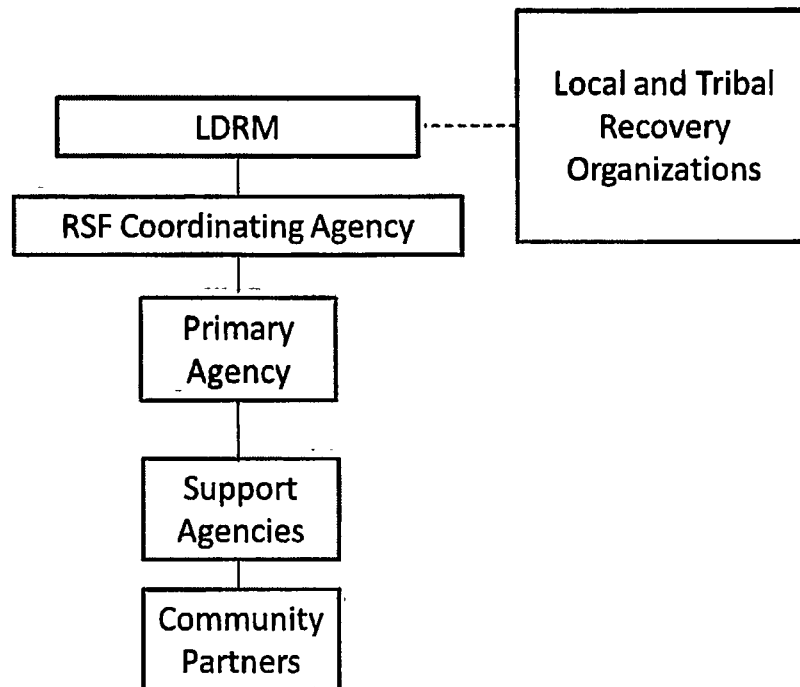
6.1.3 Coordination

Overall coordination of the RSFs is the responsibility of the LDRM. Within each RSF, action is guided by the Coordinating Agency, with the assistance of Primary and Supporting Agencies. Coordination activities, as required by the situation include:

- Ongoing emergency public information and coordination with the media after response operations have ceased;
- Streamlined and efficient resource sharing;
- Consistent communication between LDRM and RSF Coordinating Agencies indicating:
 - Resource needs;
 - Interactions and conflicts with the missions of other RSFs;
 - Situation assessments; and
 - Estimated completion of projects and programs, if applicable.
- Equitable, targeted support to all segments of the impacted community.

Figure 6-2 outlines the organizational structure within each RSF.

Figure 6-2 Internal RSF Organization



6.1.3.1 Local Disaster Recovery Manager

As soon as a LDRM is designated, he or she has authority over all RSFs, activating and demobilizing them as necessary.

- The LDRM receives requests for assistance from Regional Partners.
- The LDRM uses the RSFs to organize agency action and ensure that requests for assistance from recovery communities are met, following directives established by the MAC Group and using available resources.
- The LDRM helps direct resources appropriated by elected officials to regional agencies in support of RSF actions.
- For requests that cannot be fulfilled with regional resources or that require further assistance, the LDRM will coordinate with the SDRC and the appropriate RSF Coordinating Agencies.
- The LDRM coordinates development of the RAP.

6.1.3.2 RSF Coordinating Agencies

A number of Regional Partner departments will serve as Coordinating Agencies for specific RSFs. The Coordinating Agency must engage with Primary Agencies from their RSF to determine needed and available resources. Regional Partners' emergency management programs are responsible for ensuring that the RSF serves its purpose

during the preparedness and activated states. In the preparedness state, Regional Partners' emergency management programs ensure the continuity of the RSF by convening representatives from Primary and Supporting Agencies and ensuring that plans and procedures are in place, key staff are trained, and expected resources are available if needed. In the activated state, the Coordinating Agency takes a lead role in defining and directing actions to be taken by the deployed Primary Agencies in support of recovery.

6.1.3.3 Primary Agencies, Supporting Agencies, and Community Partners

Each RSF will also be comprised of Primary Agencies, Supporting Agencies, and community partners:

- **Primary Agencies** have statutory authorities and/or established programs directly related to the RSF and are therefore at the forefront of service delivery and coordination to recovery communities. Primary Agencies are responsible for function-specific recovery planning and coordinating with Supporting Agencies;
- **Supporting Agencies** are available to assist the Coordinating and Primary Agencies when the RSF is activated. Their role is specialized and where possible, and may not be needed at all times during recovery, though it should be available upon request from an RSF Primary Agency; and
- **Community partners** are existing governmental agencies, private companies or NGOs, and volunteers with subject matter expertise in an area of recovery. Community partners' participation may only be required for specific recovery efforts or programs.

Matrices detailing county, state, and federal agency roles can be found in Appendix D.

6.2 RESPONSIBILITIES BY RECOVERY SUPPORT FUNCTION

This section identifies the Coordinating, Primary, and Supporting Agencies for each of the six RSFs within the regional recovery organization. In addition, each sub-section provides a general description of the goals and responsibilities of the corresponding RSF. Additional RSF details on roles and responsibilities and functions can be found in the *Recovery Support Function Annexes*.

NOTE: This plan identifies the departments responsible for assuming Coordinating, Primary, and Supporting Agency duties. It is the responsibility of that department to determine the proper divisions, offices, and personnel to fill specific RSF needs.

6.2.1 RSF 1: Community Planning and Capacity Building

Table 6-3 Community Planning and Capacity Building RSF	
RSF 1 Tasked Agencies	
County Coordinating Agency	Emergency Management and Homeland Security Program
County Primary Agency	Emergency Management and Homeland Security Program Community Services Department (CSD)
Supporting Agencies	Regional Parks and Open Spaces, Comptroller, Human Resources, CERT Team
Scope	
RSF 1 provides support to augment the capacity building and community planning resources of the community to effectively plan for, manage, and implement disaster recovery activities.	
Primary Objectives	
<ul style="list-style-type: none"> ▪ Return the community to a sense of normalcy. ▪ Integrate recovery planning with other planning processes including preparedness and mitigation planning. ▪ Develop scalable, geographically based, mobile, and deliverable support mechanisms. 	
Roles and Responsibilities - Preparedness State	
<ul style="list-style-type: none"> ▪ Provide technical assistance to community partners for recovery planning. ▪ Maintain inventory of available funding sources to support Regional Partners in recovery. ▪ Facilitate training opportunities to ensure effective implementation of recovery planning activities. ▪ Facilitate the development and maintenance of Continuity of Operations Plans. ▪ Monitor ongoing regional recovery and mitigation planning projects. ▪ Coordinate with other RSFs to ensure program coordination and avoid duplication of efforts in planning. ▪ Pre-identify funding sources for economic recovery projects. ▪ Conduct stakeholder outreach to educate regional partners on funding opportunities. ▪ Regularly update RSF 1 annex, in coordination with Primary and Supporting Agencies. 	
Roles and Responsibilities - Activated State	
<ul style="list-style-type: none"> ▪ Continue to assess impacted areas. ▪ Coordinate transition from response support activities to community recovery activities. ▪ Develop community planning and capacity building recovery objectives to inform the overall RAP. ▪ Provide transparent resource allocation procedures and updates. ▪ Provide technical support to community partners for identifying recovery and mitigation projects. ▪ Coordinate resources to address skill sets where communities may lack capacity after large-scale and catastrophic disasters. ▪ Develop action plans for administration and distribution of federal funding to support community planning. ▪ Monitor post-disaster regional recovery and mitigation projects to ensure proper oversight. ▪ Document lessons learned to inform planning activities in the preparedness state. 	

See the RSF 1 - Community Planning and Capacity Building annex of this plan for additional details.

6.2.2 RSF 2: Economic Recovery

Table 6-4 Economic Recovery RSF	
RSF 2 Tasked Agencies	
County Coordinating Agency	CSD
County Primary Agency	CSD
Supporting Agencies	Comptroller Department, Building and Safety, Technology Services, Permitting, Treasurer, Assessor
Scope	
RSF 2 integrates the expertise of the Regional Partners to help community partners sustain and rebuild businesses and employment, as well as develop economic opportunities that result in sustainable and economically resilient communities after disasters.	
Primary Objectives	
<ul style="list-style-type: none"> ▪ Identify potential obstacles to fostering economic stabilization of impacted communities. ▪ Ensure community recovery plans incorporate economic revitalization and remove obstacles to post-disaster economic sustainability. ▪ Return impacted areas to a sustainable and vibrant economy within the RAP's specified timeframe. ▪ Develop long-term economic systems that discourage community displacement. 	
Roles and Responsibilities - Preparedness State	
<ul style="list-style-type: none"> ▪ Identify statutory, regulatory, and policy issues that contribute to gaps, inconsistencies, and unmet needs in economic recovery. ▪ Encourage and facilitate community economic development planning through appropriate regional government agencies and programs. ▪ Develop initiatives to facilitate the integration of regional efforts and resources with private capital and the business sector. ▪ Create, encourage, and participate in disaster recovery exercises to enhance skills and develop needed techniques. ▪ Work with Regional Partner officials to implement disaster-resistant building codes as well as incentives for businesses and individuals to conduct preparedness activities. ▪ Promote the adoption of resiliency policies and practices in regional agency programs and stakeholder operations, wherever appropriate. ▪ Sustain pre-disaster engagement activities with the leadership of local economic development agencies. ▪ Encourage the establishment of disaster information networks for businesses. ▪ Regularly update the RSF 2 annex, in coordination with Primary and Supporting Agencies. 	
Roles and Responsibilities - Activated State	
<ul style="list-style-type: none"> ▪ Coordinate transition to economic recovery activities from response support activities. ▪ Leverage regional, state, and federal resources and programs to most effectively meet community recovery needs while aggressively integrating with the private sector to facilitate early and productive engagement. ▪ Work closely with community leadership during disaster recovery to provide technical assistance and data related to economic development. ▪ Incorporate mitigation measures into redevelopment following a disaster to build the community back stronger and minimize future risk. ▪ Engage the workforce development system, including state vocational rehabilitation programs, as a means of helping individuals who acquire a disability as part of the disaster so they can return to work with the appropriate supports, accommodation, and retraining. ▪ Develop an Economic Recovery Action Plan to ensure the coordinated action of all regional agencies, stakeholders, and supporting entities in the support of community partners. 	

See the RSF 2 - Economic Recovery annex of this plan for additional details.

6.2.3 RSF 3: Health and Social Services

Table 6-5 Health and Social Services RSF	
RSF 3 Tasked Agencies	
County Coordinating Agency	Washoe County Health District (WCHD)
County Primary Agency	WCHD Social Services
Supporting Agencies	Senior Services, Juvenile Services, Medical Examiner’s Office, CSD, Utilities
Scope	
RSF 3 assists in the restoration of the public health, health care, and social service networks to promote the resilience, health, and well-being of affected individuals and communities.	
Primary Objectives	
<ul style="list-style-type: none"> ▪ Restore basic health services functions. ▪ Identify critical areas of need for health and social services, including services for populations with access and functional needs. ▪ Restore and improve the resilience and sustainability of health and social services networks to meet the needs and well-being of community members in accordance with the specified recovery timeline. ▪ Ensure long-term mental health and psychological support needs are met. 	
Roles and Responsibilities - Preparedness State	
<ul style="list-style-type: none"> ▪ Incorporate planning for the transition from response to recovery into preparedness and operational plans, in close collaboration with the appropriate response units, and the Recovery Unit. ▪ Incorporate planning for the transition from recovery operations back to steady-state into preparedness and operational plans. ▪ Identify community programs and resources needed for RSF 3 recovery efforts. ▪ Develop strategies to address recovery issues for public health and healthcare, particularly the needs of response and recovery workers and access and functional needs populations. ▪ Promote the principles of sustainability, resilience, and mitigation into preparedness and operational plans. ▪ Regularly update the RSF 3 annex, in coordination with Primary and Supporting Agencies. 	
Roles and Responsibilities - Activated State	
<ul style="list-style-type: none"> ▪ Coordinate transition to health and social services recovery activities from response support activities. ▪ Identify and mitigate potential recovery obstacles during the response phase, in collaboration with the appropriate response units, and the Recovery Unit. ▪ Coordinate and leverage applicable state and federal resources for public health and healthcare services. ▪ Conduct regional health services assessments with Primary Agencies. ▪ Provide technical assistance in the form of impact analyses and support recovery planning for public health and healthcare systems infrastructure. ▪ Coordinate with local, tribal, and federal partners to assess food, animal, water, and air conditions to ensure safety. ▪ Establish communication and information-sharing forum(s) for public health and healthcare stakeholders. ▪ Develop and implement a plan to transition from public health and healthcare recovery operations back to a steady-state. ▪ Evaluate the effectiveness of public health and healthcare recovery efforts. 	

See the RSF 3 - Health and Social Services annex of this plan for additional details.

6.2.4 RSF 4: Disaster Housing

Table 6-6 Disaster Housing RSF	
RSF 4 Tasked Agencies	
County Coordinating Agency	Emergency Management and Homeland Security Program Community Services Department
County Primary Agency	Emergency Management and Homeland Security Program Community Services Department
Supporting Agencies	Animal Services, Building and Safety, Juvenile Services, Senior Services, WCHD, Social Services, CERT Team, Technology Services
Scope	
RSF 4 addresses pre- and post-disaster housing issues, coordinates and facilitates the delivery of Regional Partner resources to assist community partners in the rehabilitation and reconstruction of destroyed and damaged housing, and the development of other new accessible, long-term housing options.	
Primary Objectives	
<ul style="list-style-type: none"> ▪ Assess preliminary housing impacts and needs, identify available options for temporary housing, and plan for long-term housing. ▪ Ensure that community housing recovery plans address interim housing needs, assess options for permanent housing, and define a timeline for achieving a resilient, equitable, and sustainable housing market. ▪ Establish a resilient and sustainable housing market that helps local communities meet their needs, including accessible housing, within the specified timeframe of the RAP. 	
Roles and Responsibilities - Preparedness State	
<ul style="list-style-type: none"> ▪ Identify strategies and options that address a broad range of disaster housing issues, such as those dealing with planning, zoning, design, production, logistics, codes, and financing. ▪ Build accessibility, resiliency, sustainability, and mitigation measures into identified housing recovery strategies. ▪ Assess the potential risks of hazards on community housing resources. ▪ Ensure that the resources and authorities required to implement disaster housing recovery plans and procedures are available and coordinated within each Primary and Supporting Agency. ▪ Facilitate coordination between the RSF 4 and community partners such as involved private sector and non-profit organizations. ▪ Regularly update the RSF 4 annex, in coordination with Primary and Supporting Agencies. 	
Roles and Responsibilities - Activated State	
<ul style="list-style-type: none"> ▪ Coordinate the transition to disaster housing recovery activities from response support activities. ▪ Coordinate and leverage state and federal resources to assist community partners in addressing housing-related recovery needs. ▪ Encourage rapid and appropriate decisions regarding land use and housing location in the recovering communities or regions. ▪ Identify gaps and coordinate the resolution of issues involving conflicting policies and programs. ▪ Promote communications and information sharing throughout the recovery process between all involved partners. ▪ Facilitate family reunification and temporary relocation efforts. ▪ Develop an approach for evaluating and prioritizing the recovery of disaster housing assets. ▪ Provide incentives for displaced or relocated residents to return to the community. ▪ Provide support for home repairs that create resilient housing in preparation for future disasters. ▪ Identify partners to assist with locating permanent housing options for remaining impacted community members. 	

See the RSF 4 - Disaster Housing annex of this plan for additional details.

6.2.5 RSF 5: Infrastructure Systems

Table 6-7 Infrastructure Systems RSF	
RSF 5 Tasked Agencies	
County Coordinating Agency	Community Services Department
County Primary Agency	Community Services Department Roads Department
Supporting Agencies	Regional Parks and Open Spaces, Technology Services, Building and Safety, Northern Nevada Regional Intelligence Center (NINRIC)
Scope	
RSF 5 coordinates the capabilities of the Regional Partners to support community partners and other infrastructure owners and operators in their efforts to achieve recovery goals and restore infrastructure systems.	
Primary Objectives	
<ul style="list-style-type: none"> ▪ Restore and sustain essential services to maintain community functionality. ▪ Develop an Infrastructure RAP with a specified timeline for redeveloping community infrastructure to contribute to resiliency, accessibility, and sustainability. ▪ Provide systems that meet community needs while minimizing service disruption during restoration within the specified timeline of the RAP. 	
Roles and Responsibilities - Preparedness State	
<ul style="list-style-type: none"> ▪ Develop guidance and standard procedures for rapid activation of RSFs to support recovery. ▪ Identify relevant programs, capabilities, and limiting factors pertaining to recovery support for infrastructure systems. ▪ Provide a forum for interagency coordination, information sharing, and exchange of practices. ▪ Work with local, tribal, federal, and private sector partners to identify critical facilities/systems, and ensure that efforts are made to reduce risk pre- and post-disaster. ▪ Regularly update the RSF 5 annex, in coordination with Primary and Supporting Agencies. 	
Roles and Responsibilities - Activated State	
<ul style="list-style-type: none"> ▪ Coordinate transition to infrastructure systems recovery activities from response support activities. ▪ Coordinate regional resources in support of the recovery of impacted infrastructure systems. ▪ Participate in the regional-level coordination of damage and community needs assessments to ensure that infrastructure considerations are integrated into the post-disaster community planning process. ▪ Deploy Primary and Supporting Agency resources to the field to assist affected communities in developing an Infrastructure RAP that: <ul style="list-style-type: none"> ○ Avoids the redundant, counterproductive, or unauthorized use of limited capital resources. ○ Helps resolve jurisdictional and other conflicts resulting from the competition for key resources essential to recovery. ○ Sets a firm schedule and sequenced time structure for infrastructure recovery projects. ▪ Work with local, tribal, federal, and private sector partners to leverage available financial and technical assistance, both from governmental and nongovernmental sources, in the execution of the community's Infrastructure RAP. ▪ Promote rebuilding infrastructure in a manner to reduce vulnerability to future disaster impacts. ▪ Review and identify codes, building permits, and waivers. 	

See the RSF 5 - Infrastructure Systems annex of this plan for additional details.

6.2.6 RSF 6: Natural and Cultural Resources

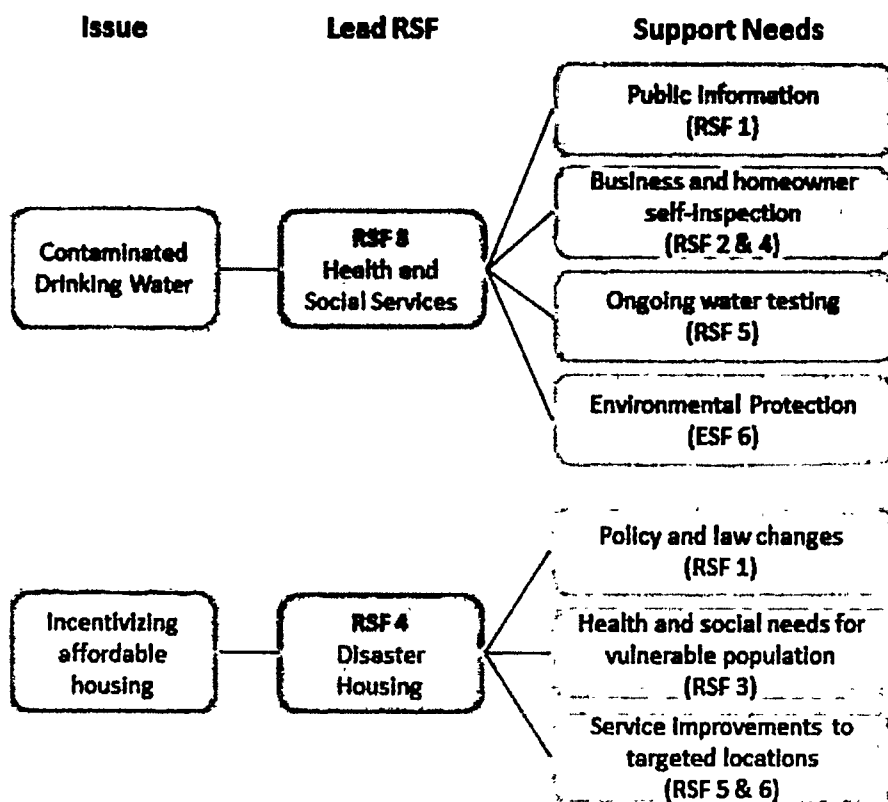
Table 6-8 Natural and Cultural Resources RSF	
RSF 6 Tasked Agencies	
County Coordinating Agency	Parks and Open Spaces Library System
County Primary Agency	Parks and Open Spaces Library System Truckee Meadows Flood Project CSD
Supporting Agencies	Roads, Utilities
Scope	
RSF 6 addresses restoration and revitalization of natural and cultural resources valued by communities and integrates regional resources and capabilities to help the community address long-term environmental and cultural resource recovery needs after disasters.	
Primary Objectives	
<ul style="list-style-type: none"> ▪ Identify and prioritize restoration of natural and cultural resources. ▪ Implement measures to protect and stabilize records and culturally significant documents, objects, and structures. ▪ Assess impacts to natural and cultural resources and identify needed protections during stabilization efforts. 	
Roles and Responsibilities - Preparedness State	
<ul style="list-style-type: none"> ▪ Identify relevant regional programs and resources supporting the preservation, protection, conservation, rehabilitation, and restoration of natural and cultural resources during recovery. ▪ Identify and report gaps and inconsistencies within and between regulations, policies, program requirements, and processes that are used in disaster recovery and that affect natural and cultural resources. ▪ Work with NGOs to encourage Regional Partners and institutions to integrate natural and cultural resource issues into their emergency management plans. ▪ Identify sites and events of community value. ▪ Promote the principles of resilient communities through the protection of natural resources such as floodplains, wetlands, and other natural resources critical to risk reduction. ▪ As part of ongoing hazard mitigation planning, assess appropriate hazard mitigation strategies for the protection of cultural resources. ▪ Regularly update the RSF 6 annex in coordination with Primary and Supporting Agencies. 	
Roles and Responsibilities - Activated State	
<ul style="list-style-type: none"> ▪ Coordinate support of cross-jurisdictional natural and cultural resource issues. ▪ Identify opportunities to enhance natural and cultural resource protection with hazard mitigation strategies. ▪ Coordinate with tribal governments to identify restoration and cultural resource recovery needs. ▪ Assist affected communities in developing a Natural and Cultural Resources Action Plan that identifies how all involved partners will mobilize resources and capabilities to meet community needs. ▪ Address government policy and agency program issues, gaps, and inconsistencies related to natural and cultural resource issues. ▪ Promote a systematic, interdisciplinary approach to understand the interdependencies and complex relationships of the natural and cultural environments. 	

See the RSF 6 - Natural and Cultural Resources annex of this plan for additional details.

6.3 RSF INTERACTIONS

Large-scale and catastrophic disasters affect a community’s vitality and health. Though the framework is broken down into RSFs, each one complements and informs the others depending on the situation and issues at hand. Figure 6-2 provides an example of inter-RSF collaboration.

Figure 6-2 RSF Interactions



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7. IMPLEMENTATION AND MAINTENANCE

Section 7 prescribes plan maintenance and improvement processes, and provides plan training and exercise recommendations.

7.1 PLAN ADOPTION

Each RSF Coordinating Agency shall commit to participation in the Framework through formal adoption by authorized signature on the Letter of Transmittal indicating that this plan has been reviewed. Signature furthermore indicates the commitment of the signatory's agency to disseminating details of the plan to their Primary and Supporting Agencies and employees through a formalized mechanism to ensure that all who may become involved in recovery functions are prepared to do so. Signatures will be required for all subsequent updates to the plan.

The Framework will be reviewed and revised as appropriate, for formal review and adoption every four years, or more frequently based on significant lessons learned from exercises or real world disasters.

7.2 PLAN MODIFICATIONS

The Plan Administrator—the Washoe County Emergency Management and Homeland Security Program—will coordinate reviews, revisions, and re-adoption of this plan every four years or when changes occur, to incorporate lessons learned from exercises or real world disasters. All substantive changes will be reviewed and approved by the MAC Group and representatives from the Emergency Management and Homeland Security Program, and transmitted to the County Manager's Office for review and approval. Changes to the annexes, excluding appendices, and non-substantive changes to the Basic Plan, may be made by the Plan Administrator with review by the MAC Group.

RSF Annexes will be reviewed and revised by the Coordinating Agencies, with changes transmitted to the Plan Administrator for approval by the MAC Group.

7.3 RECOVERY SUPPORT FUNCTION ONGOING PREPAREDNESS

It is essential that Coordinating Agencies and the whole community perform ongoing preparedness activities so they are prepared to implement their respective recovery functions in the wake of large-scale disasters that may occur with little or no warning. To ensure that preparedness activities are undertaken and sustained, the Coordinating Agencies will:

7. Implementation and Maintenance

- Assign work groups to undertake ownership of their respective RSFs;
- Create a work plan that describes how the plan will be maintained;
- Implement preparedness efforts, including recovery planning, review of existing response and mitigation plans, training and exercises, community outreach, partnership building, capacity building, and protocol development that will be undertaken with timelines and assignments of responsibility for implementation;
- Encourage ownership by agency staff through education about the framework and creating a mechanism to obtain feedback for its improvement; and
- Develop contracts and agreements with regional agencies to perform the recovery roles assigned to them.

7.4 HAZARD MITIGATION

Hazard mitigation and disaster response and recovery have direct implications to the level of effort required of the other. A decrease in the level of hazard mitigation activities may lead to a substantial increase in the need for disaster recovery levels of effort and spending. However, these two phases of emergency management should be connected through long-term recovery and planning efforts. Future hazard mitigation planning should be informed by lessons learned through recent disaster recovery efforts, and resources should be made available to decrease repetitive losses.

7.5 COORDINATION WITH THE WHOLE COMMUNITY

Effective recovery requires full participation of the entire community, including local, tribal, state, and federal governmental partners; local recovery organizations; private and non-profit sectors, such as businesses, faith-based, and social service organizations; and the public. Whole community participation is best driven from the local level, but requires engagement by partners at all levels to be successful. The regional recovery organization will support local recovery organizations' efforts to engage partners through the following activities:

- Share the Framework and update to its structure;
- Provide guidance for development of partner recovery plans; and
- Provide outreach resources and tools.

7.6 TRAINING AND EXERCISES

All regional partners involved in recovery efforts should be familiar with the NDRF, the State Framework, and this plan, and should be trained and experienced in operating under the NIMS/ICS protocol.

Coordinating Agencies will ensure that recovery staff are trained as part of ongoing preparedness so that the full resources and capabilities of the agency are available with little forewarning. Key staff should undertake initial, refresher, and just-in-time training on the Basic Plan portion of the *County Regional Disaster Recovery Framework*, on the RSF Annex for which the agency is designated as the Primary Agency, and on all other RSFs for which the agency could have a supporting role. Training records must be kept and made available at the request of the Plan Administrator.

The county will conduct exercises to test and evaluate this plan. The exercises will consist of a variety of tabletop exercises, drills, functional exercises, and full-scale exercises. After-action findings and improvement recommendations will be used to update the Framework as appropriate.

Partner recovery organizations should exercise their respective recovery plans annually with their community recovery partners, including local agencies; private and non-profit sectors such as businesses, faith-based, and social service organizations; and the public. Emergency Management and Homeland Security Program staff should be invited to attend. The exercises may consist of a variety of discussion- and operations-based exercises. Homeland Security Exercise and Evaluation Program (HSEEP) procedures and tools should be used to develop, conduct, and evaluate these exercises.

Partner recovery organizations will work with the Emergency Management and Homeland Security Program to transmit after-action recommendations and improvements as outcomes to these exercises.

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Regional

- Regional Emergency Operations Plan, 2015
- Regional Debris Management Plan, in development
- Washoe County Regional Hazard Mitigation Plan, 2015
https://www.washoecounty.us/em/files/PDFs/2015%20Washoe%20County%20R_HMP.pdf
- Washoe County Volunteer Management Plan, 2016

State

- State of Nevada Disaster Recovery Framework, 2016
- State Comprehensive Emergency Management Plan, January 2014
<http://dem.nv.gov/uploadedFiles/demnv.gov/content/Resources/2014-SCEMP.pdf>
- State of Nevada Response and Recovery Guide to Emergencies and Disasters for State, Local, and Tribal Governments, Published by the Department of Public Safety, Division of Emergency Management, February 2011
<http://dem.nv.gov/uploadedFiles/demnv.gov/content/Resources/NDEMRespRecGuide.pdf>
- State of Nevada Disaster Debris Management Plan, 2015
http://dem.nv.gov/uploadedFiles/demnv.gov/content/About/NV_DisasterDebrisManagementPlan2009.pdf

Federal

- Federal Emergency Management Agency, National Disaster Recovery Framework, 2013 <https://www.fema.gov/pdf/recoveryframework/ndrf.pdf>
- Federal Emergency Management Agency, Recovery Federal Interagency Operations Plan, 2014 https://www.fema.gov/media-library-data/1471451918443-dbbb91fec8ffd1c59fd79f02be5afddd/Recovery_FIOP_2nd.pdf
- Federal Emergency Management Agency, National Response Framework, 2013 https://www.fema.gov/media-library-data/20130726-1914-25045-1246/final_national_response_framework_20130501.pdf
- Public Law 113-2, including:
 - Disaster Relief Appropriations Act, 2013
 - Sandy Recovery Improvement Act of 2013

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APPENDIX B RESOURCES

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Publications

- **Achieving Disaster Resilience in U.S. Communities.** Executive, Congressional, and private-sector publication to address resilience strategies. Read full text at:
http://csis.org/files/publication/141016_Kostro_DisasterResilience_Web.pdf.
- **Enhancing the Climate Resilience of America's Natural Resources.** Produced by the Council on Climate Preparedness and Resilience, agenda identifies strategies to make natural resources more resilient. Read full text at:
https://www.whitehouse.gov/sites/default/files/docs/enhancing_climate_resilience_of_americas_natural_resources.pdf.
- **Incorporating Disaster Resilience into Disaster Recovery.** Produced by the Natural Hazards Center, publication proposes more well-rounded recovery efforts. Read full text at:
http://www.colorado.edu/hazards/publications/holistic/ch8_disaster_resilience.pdf.
- **Moving Towards Sustainable and Resilient Smart Water Grids.** A concept paper that identifies weaknesses in current urban water systems, and provides resiliency solutions to these problems. Read full text at:
<http://repository.asu.edu/items/15928>.
- **Planning Fire-Resilient Counties in the Wildland-Urban Interface.** Produced by the National Association of Counties, this document provides case studies to guide future resilience from wildfires. Read full text at:
[http://www.naco.org/sites/default/files/documents/GuidetoWildfireRiskandMitigation-NACo2010%20\(2\).pdf](http://www.naco.org/sites/default/files/documents/GuidetoWildfireRiskandMitigation-NACo2010%20(2).pdf).
- **The Sendai Framework for Disaster Risk Reduction.** Adopted by the UN World Conference, this framework outlines steps to reduce disaster risks at the local, national, and global level. Read full text at:
http://www.preventionweb.net/files/43291_sendaiframeworkfordrren.pdf.

Other Resources and Service Providers

- **Rockefeller Foundation.** The Rockefeller Foundation has played a leading national and international role in the promotion of local resiliency planning and implementation, through programs such as 100 Resilient Cities, the Global Resilience Partnership, and extensive assistance to the HUD Rebuild by Design competition and the NDRC. Further information on the Rockefeller Foundation and its resiliency programs and initiatives can be found at:
<https://www.rockefellerfoundation.org/our-work/topics/resilience/>
- **American Red Cross.** The American Red Cross prevents and alleviates the impacts of emergencies by mobilizing volunteers and funds. Further

information on the American Red Cross can be found at:

<http://www.redcross.org/>.

- **Team Rubicon.** Team Rubicon's primary mission is providing disaster relief to those affected by natural disasters through incident management, damage and impact assessment, disaster mapping and work-order management, debris management, hazard mitigation, expedient home repair, and spontaneous volunteer management. Further information on Team Rubicon can be found at: <http://www.teamrubiconusa.org/>.

APPENDIX C ACRONYMS AND ABBREVIATIONS

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ARF	Action Request Form
DRC	Disaster Recovery Center
EOP	Emergency Operations Plan
ESF	Emergency Support Function
FDRF	Federal Disaster Recovery Coordinator
FEMA	Federal Emergency Management Agency
Framework	Washoe County Regional Disaster Recovery Framework
HSEEP	Homeland Security Exercise and Evaluation Program
HUD	U.S. Department of Housing and Urban Development
ICS	Incident Command System
JFO	Joint Field Office
JIC	Joint Information Center
JPDA	Joint Preliminary Damage Assessment
LDRM	Local Disaster Recovery Manager
NDRF	National Disaster Recovery Framework
NEMAC	Nevada Emergency Management Assistance Compact
NGO	Non-Governmental Organization
NIMS	National Incident Management System
NOAA	National Oceanic and Atmospheric Administration
NREL	National Renewable Energy Laboratory
NRF	National Response Framework
NRS	Nevada Revised Statutes
PA	Public Assistance
PDA	Preliminary Damage Assessment
PPD-8	Presidential Policy Directive 8

RAP	Regional Recovery Action Plan
REOC	Regional Emergency Operations Center
RSF	Recovery Support Function
SBA	Small Business Administration
SCO	State Coordinating Officer
SDRA	State Disaster Relief Account
SERT	State Emergency Response Team
SHMP	State Enhanced Hazard Mitigation Plan
SOP	Standard Operating Procedure
SRO	State Recovery Organization
Stafford Act	Robert T. Stafford Disaster Relief and Emergency Assistance Act
TDRC	Tribal Disaster Recovery Coordinator

APPENDIX D RSF MATRICES

The following matrices illustrate Coordinating, Primary, and Supporting Agencies at the regional, state, and federal levels for recovery functions addressed in the Framework.

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Washoe County

Regional Disaster Recovery Framework
RSF Matrices

Related County RSF Annexes	RSF 1	RSF 2	RSF 3	RSF 4	RSF 5	RSF 6
	Community Planning and Capacity Building	Economic Recovery	Health and Social Services	Housing	Infrastructure Systems	Natural and Cultural Resources
Washoe County						
Emergency Management and Homeland Security Program	C			C		
Animal Services				S		
Assessor		S				
Building and Safety		S		S	S	
CERT Team	S			S		
Community Services	P	C	S	C	C	P
Comptroller	S	S				
Human Resources	S					
Juvenile Services			S	S		
Library System						C
Medical Examiner's Office			S			
Northern Nevada Regional Intelligence Center					S	
Parks and Open Spaces	S				S	C
Permitting		S				
Roads					P	S
Senior Services			S	S		
Social Services			P	S		

Key:
C - Coordinating
P - Primary
S - Support

Washoe County

Regional Disaster Recovery Framework
RSF Matrices

Related County RSF Annexes	RSF 1	RSF 2	RSF 3	RSF 4	RSF 5	RSF 6
	Community Planning and Capacity Building	Economic Recovery	Health and Social Services	Housing	Infrastructure Systems	Natural and Cultural Resources
Key:						
C - Coordinating						
P - Primary						
S - Support						
Technology Services		S			S	
Treasurer		S				
Truckee Meadows Flood Project						P
Utilities			S			S
Washoe County Health District			C	S		

Related Regional Partner RSF Annexes	RSF 1	RSF 2	RSF 3	RSF 4	RSF 5	RSF 6
Key: C - Coordinating P - Primary S - Support	Community Planning and Capacity Building	Economic Recovery	Health and Social Services	Housing	Infrastructure Systems	Natural and Cultural Resources
	City of Reno					

Related Regional Partner RSF Annexes	RSF 1 Community Planning and Capacity Building	RSF 2 Economic Recovery	RSF 3 Health and Social Services	RSF 4 Housing	RSF 5 Infrastructure Systems	RSF 6 Natural and Cultural Resources
Key:						
C - Coordinating						
P - Primary						
S - Support						
City of Sparks						

Related Regional Partner RSF Annexes	RSF 1	RSF 2	RSF 3	RSF 4	RSF 5	RSF 6
Key: C - Coordinating P - Primary S - Support	Community Planning and Capacity Building	Economic Recovery	Health and Social Services	Housing	Infrastructure Systems	Natural and Cultural Resources
	Pyramid Lake Paiute Tribe					

RSF Matrices

Related Regional Partner RSF Annexes	RSF 1 Community Planning and Capacity Building	RSF 2 Economic Recovery	RSF 3 Health and Social Services	RSF 4 Housing	RSF 5 Infrastructure Systems	RSF 6 Natural and Cultural Resources
Key:						
C - Coordinating						
P - Primary						
S - Support						
Reno-Sparks Indian Colony						

Related State RSF Annexes	RSF 1	RSF 2	RSF 3	RSF 4	RSF 5	RSF 6
	Community Planning and Capacity Building	Economic Recovery	Health and Social Services	Housing	Infrastructure Systems	Natural and Cultural Resources
State of Nevada						
Governor's Office	S	S	S	S	S	S
Department of Public Safety	S	S	S	S	S	S
Division of Emergency Management	C	C	C	C	C	C
Center for Environmental Remediation and Monitoring (Environment)			S			S
Commission for Cultural Affairs						S
Commission on Homeland Security					S	
Critical Infrastructure Committee					S	
Department of Administration - Public Works	S				P	
Department of Administration - Buildings and Grounds					S	
Department of Agriculture	S	S	S		S	S
Department of Business and Industry	S	S			S	
Department of Conservation and Natural Resources	S	S			S	C
Department of Corrections	S				S	
Department of Education	S				S	
Department of Employment, Training, and Rehabilitation	S	S	S			
Department of Health and Human Services	P		P	S	S	
Department of Taxation	S	S				

Key:
 C - Coordinating
 P - Primary
 S - Support

Related State RSF Annexes	RSF 1	RSF 2	RSF 3	RSF 4	RSF 5	RSF 6
	Community Planning and Capacity Building	Economic Recovery	Health and Social Services	Housing	Infrastructure Systems	Natural and Cultural Resources
Key: C - Coordinating P - Primary S - Support						
Department of Tourism and Cultural Affairs						S
Department of Transportation	S				S	
Department of Wildlife	S					S
Division of Child and Family Services						
Division of Environmental Protection			S			S
Enterprise Information Technology Services					S	
Governor's Office of Economic Development	S	S				
Housing Division	S			S		
Manufactured Housing Division				S		
Nevada Contractors Association	S	S		S	S	
Nevada Indian Commission						S
Nevada Museum and History						S
Nevada State Library, Archives, and Public Records						S
Nevada State Parks/State Historic Preservation Office						S
Office of the Military					S	
Office of Veterans Services			S			
Public Utilities Commission of Nevada						
Rural Community and Economic Development Division	S	S		S	S	

Washoe County

Regional Disaster Recovery Framework
RSF Matrices

Related Federal RSF Annexes	RSF 1 Community Planning and Capacity Building	RSF 2 Economic Recovery	RSF 3 Health and Social Services	RSF 4 Housing	RSF 5 Infrastructure Systems	RSF 6 Natural and Cultural Resources
Key: C - Coordinating P - Primary S - Support						
Federal						
Department of Homeland Security/Federal Emergency Management Agency	C	P	P	P	P	P
Advisory Council on Historic Preservation						S
American Red Cross			S	S		
Corporation for National and Community Service	S	S	P	S		S
Department of Agriculture	S	P	S	P	S	
Department of Commerce	S	C		S	S	S
Department of Education			P		S	
Department of Energy				S	P	
Department of Health and Human Services	P	S	C	S	S	
Department of Interior	S	S	P		S	C
Department of Justice	S		P	P		
Department of Labor		P	P			
Department of Transportation	S		S		P	
Department of Treasury	S	P	S		S	
Environmental Protection Agency	S	S		S	S	P
Federal Communications Commission					S	

Washoe County

Regional Disaster Recovery Framework

RSF Matrices

Related Federal RSF Annexes	RSF 1	RSF 2	RSF 3	RSF 4	RSF 5	RSF 6
	Community Planning and Capacity Building	Economic Recovery	Health and Social Services	Housing	Infrastructure Systems	Natural and Cultural Resources
Key:						
C - Coordinating						
P - Primary						
S - Support						
General Services Administration	S				S	
Housing and Urban Development	S			C		
Institute of Museum and Library Services						S
National Organizations Active in Disasters			S	S		
Small Business Administration	S	P	S	S		
U.S. Access Board				S		
U.S. Army Corps of Engineers					C	S
Veterans Affairs			P	S		

APPENDIX E REGIONAL RECOVERY ACTION PLAN FORM

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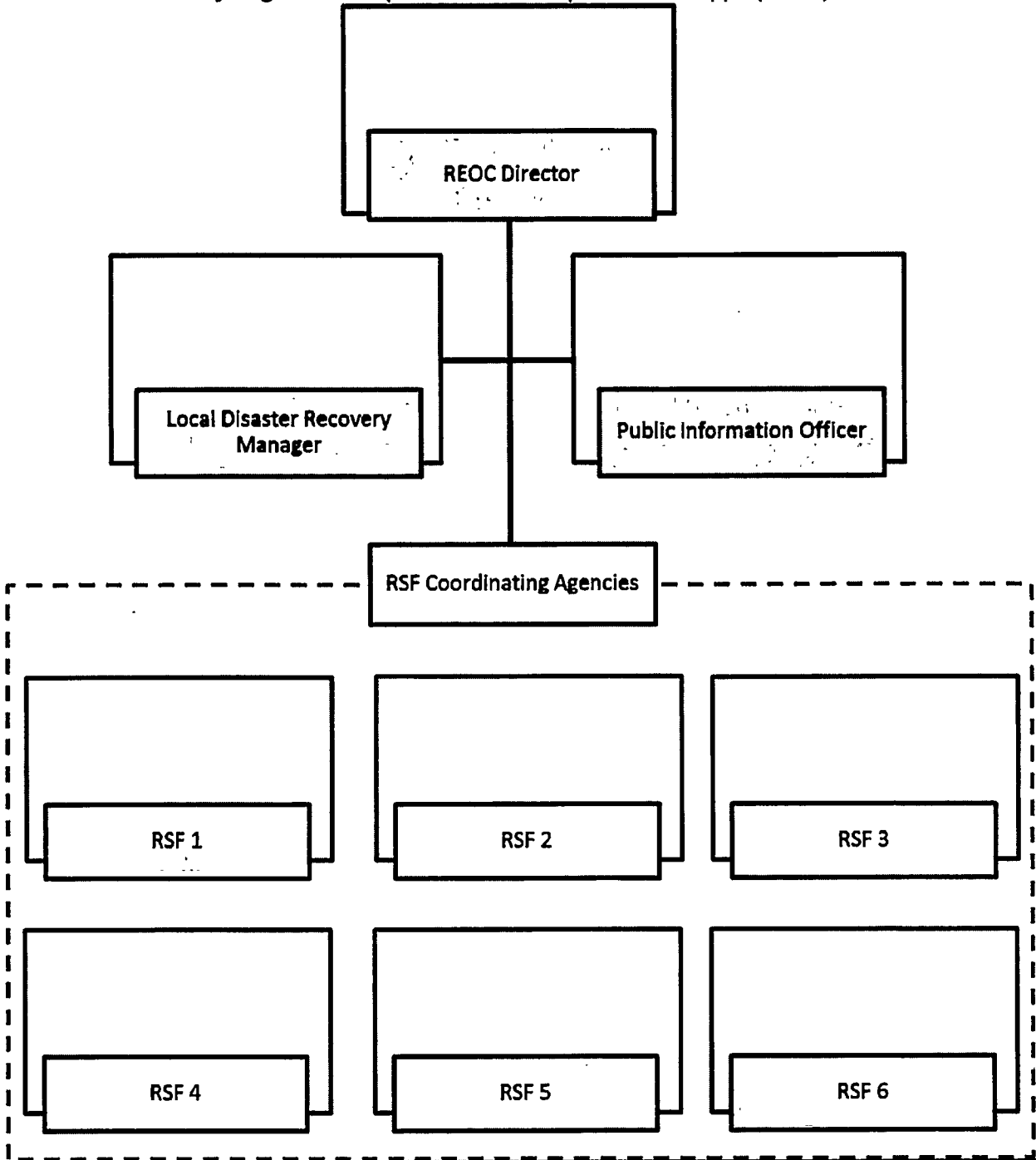
REGIONAL RECOVERY ACTION PLAN FORM

This form is intended to support coordination between Recovery Support Functions (RSFs) as it relates to the overall recovery efforts of an incident. The form should be completed by the LDRM in collaboration with each RSF's Coordinating and Primary Agencies. All forms should be completed at the onset of each operational period, to be defined by the LDRM and RSF Coordinating and Primary Agencies.

NUMBER	TITLE	INSTRUCTIONS
1	Incident Name	Enter the name assigned to the incident.
2	Operational Period	Enter the start date and end date for the operational period to which the form applies.
3	Recovery Phase Timeline	Enter the estimated phase of RSF recovery activities and a target date to transition phases.
4	Situation Summary	Enter brief situation summary.
5	RSF Interactions	Enter specific activities that require coordination across RSFs.
6	Public Information	Detail recent public information releases, information needs, and outreach activities.
7	Current Recovery Organization	Enter the names of the individuals assigned to each position on the Recovery Organization chart. Modify the chart as necessary, and add any lines/spaces needed for additional positions.
8	Health and Safety Briefing	Summary of health and safety issues and instructions.
9	Geographic Extent	Detail the geographic extent of RSF activities, and highlight key areas of recovery concern (color coded by RSF).
10	Incident Objectives	
	10a. Objectives	Enter each objective separately. Adjust objectives for each operational period as needed.
	10b. Strategies/Tactics	For each objective, document the strategy/tactic to accomplish that objective.
	10c. Needs	For each strategy/tactic, document the resources required to accomplish that objective.
	10d. Need Assigned to	For each strategy/tactic, document the agency/organization assigned to that strategy/tactic.
11	Prepared by	Enter the name and signature of the person preparing the form. Enter date, time prepared, and department of preparer.

1. Incident Name	2. Operational Period (#_____) Date: FROM:_____ TO:_____
3. Recovery Phase Timeline <input type="checkbox"/> Short-Term <input type="checkbox"/> Intermediate <input type="checkbox"/> Long-Term Phase Completion Target Date _____	
4. Situation Summary	
5. RSF Interactions	
6. Public Information	

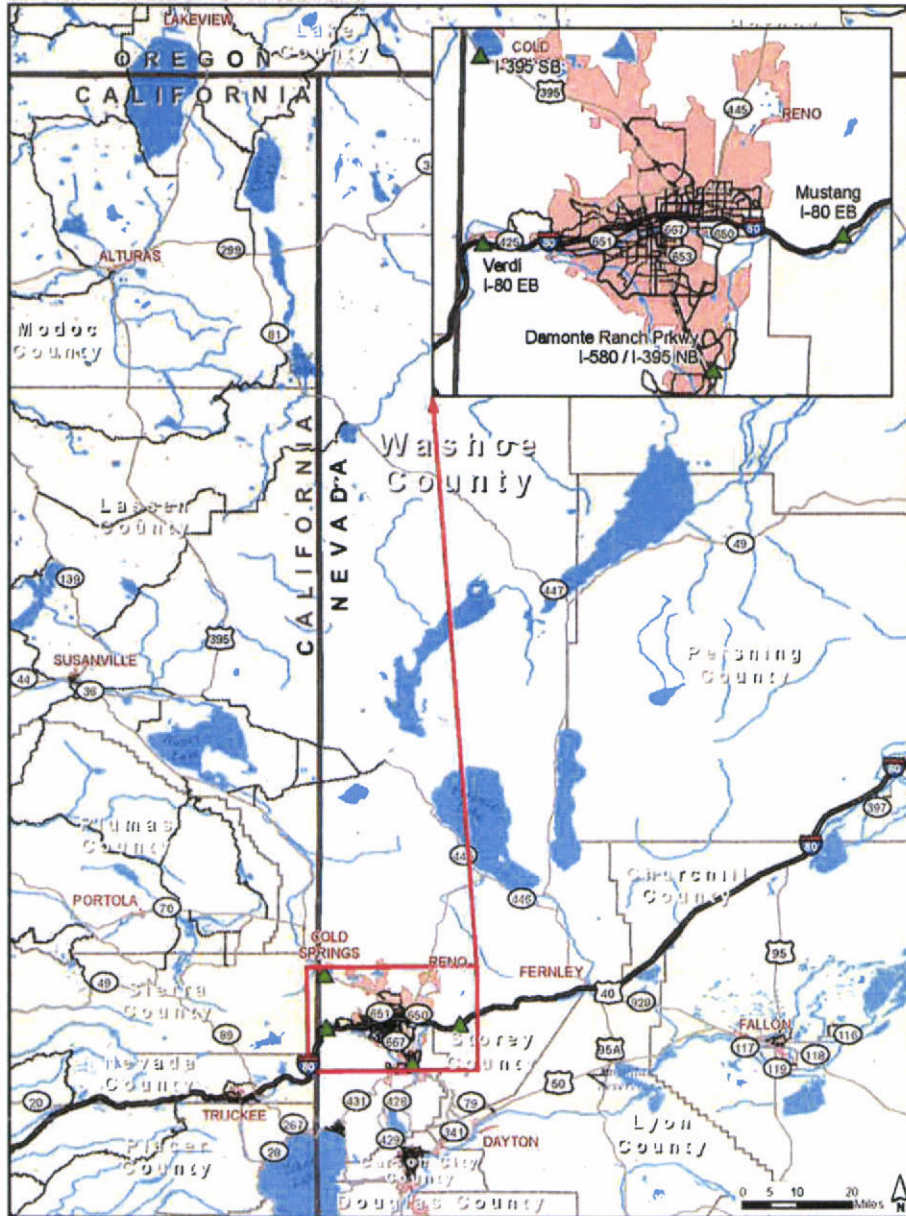
7. Current Recovery Organization (fill in additional positions as appropriate)



8. Health and Safety Briefing

9. Geographic Exent

- RSF 1
- RSF 2
- RSF 3
- RSF 4
- RSF 5
- RSF 6



Notes

10a. Objectives	10b. Strategies/Tactics	10c. Needs	10d. Needs Assigned to
11. Prepared by	PRINTED NAME:	SIGNATURE:	
	DATE/TIME:	DEPARTMENT:	

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APPENDIX F SAMPLE RECOVERY TRANSITION MEETING AGENDA

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Parties to be present

- REOC Director
- REOC Section Chiefs
 - Operations
 - Planning
 - Logistics
 - Finance
- REOC Unit Leaders
 - Recovery Unit to lead transition
- Public Information Officer
- LDRM
- Primary RSF Agencies

Agenda Item	Responsible Party
1. Briefing on situation/resource status.	REOC Director, Planning/Operations Section Chiefs, LDRM
2. Discuss ongoing operations pertaining to recovery.	Operations Section Chief, REOC Unit Leaders
3. Establish/confirm incident objectives and refine for recovery operations.	REOC Director, LDRM
4. Facilitate hand off of information and materials from response units to RSFs.	Recovery Unit, REOC Director, LDRM, REOC Unit Leaders, RSF Coordinating Agencies
5. Develop needs assessment.	REOC Unit Leaders, Coordinating Agencies, Logistics Section Chief
6. Provide financial update.	Finance Section Chief
7. Discuss information/public information issues and needs.	Public Information Officer
8. Finalize and implement the RAP.	LDRM, RSF Coordinating Agencies, RSF Primary Agencies

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RECOVERY SUPPORT FUNCTION ANNEXES

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**RSF 1 - COMMUNITY PLANNING AND CAPACITY
BUILDING**

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RSF 1 Tasked Agencies	
Coordinating Agency	Emergency Management and Homeland Security Program
Primary Agency	Emergency Management and Homeland Security Program Community Services Department
Supporting Agencies	Regional Parks and Open Spaces Comptroller Human Resources CERT Team
State Coordinating Agency	Division of Emergency Management (DEM)
Federal Coordinating Agency	U.S. Department of Homeland Security - Federal Emergency Management Agency
Response Coordination	REOC Management Section Services Branch (Logistics) Support Branch (Logistics) Recovery Unit (Planning) Public Information Unit

1 PURPOSE AND SCOPE

1.1 Purpose

Recovery Support Function (RSF) 1, Community Planning and Capacity Building (CPCB), and the five other RSFs are essential annexes to the *Washoe County Disaster Recovery Framework* (Framework). This document presents the mission of RSF 1; its objectives, key activities, and areas of support; and the roles and capabilities of partners. Detailed operational and tactical guidance for regional personnel is provided in agency-specific guidance and planning documents.

The mission of RSF 1 is to integrate regional assets and capabilities to help local governments, tribal governments, and impacted communities address long-term community recovery needs after disasters.

1.2 Scope

RSF 1 is designed to provide guidance to Regional Partners in aiding local and tribal partners in addressing recovery of the physical, economic, and social environment of the whole community. The following activities fall within the scope of RSF 1:

- Assist in the identification of community resources for recovery;
- Coordinate with disaster response, hazard mitigation, sustainability, and resiliency planning efforts;
- Assist in the development of communications strategies;
- Provide support to training and preparation of community planning and capacity building partners;
- Assist in the assessment of overall community recovery needs, resources, and challenges;
- Identify government and citizen goals, policies, priorities, plans, programs, and methods of recovery implementation;
- Support community disaster education efforts to promote individual, family, and community self-sufficiency;
- Coordinate with and augment all community disaster response and recovery services and resources; and
- Ensure the needs are met of those in isolated and vulnerable populations.

2 ASSUMPTIONS

The following assumptions guide RSF 1 activities in pursuit of its mission:

- A systematic approach to recovery increases the likelihood of successful recovery, project implementation, and fiscal support;
- Local community recovery planning and recovery capacity building are essential for organizing, leading, and, most importantly, sustaining long-term recovery activity;
- An integrated, holistic, accessible, and simplified recovery management and planning process provides a forum for community input, expedites sound decision making, and sustains implementation of recovery at the local level; and
- Hazard mitigation and sustainability are emphasized during support efforts and integrated into overall CPCB planning and recovery activity.

3 CONCEPT OF OPERATIONS

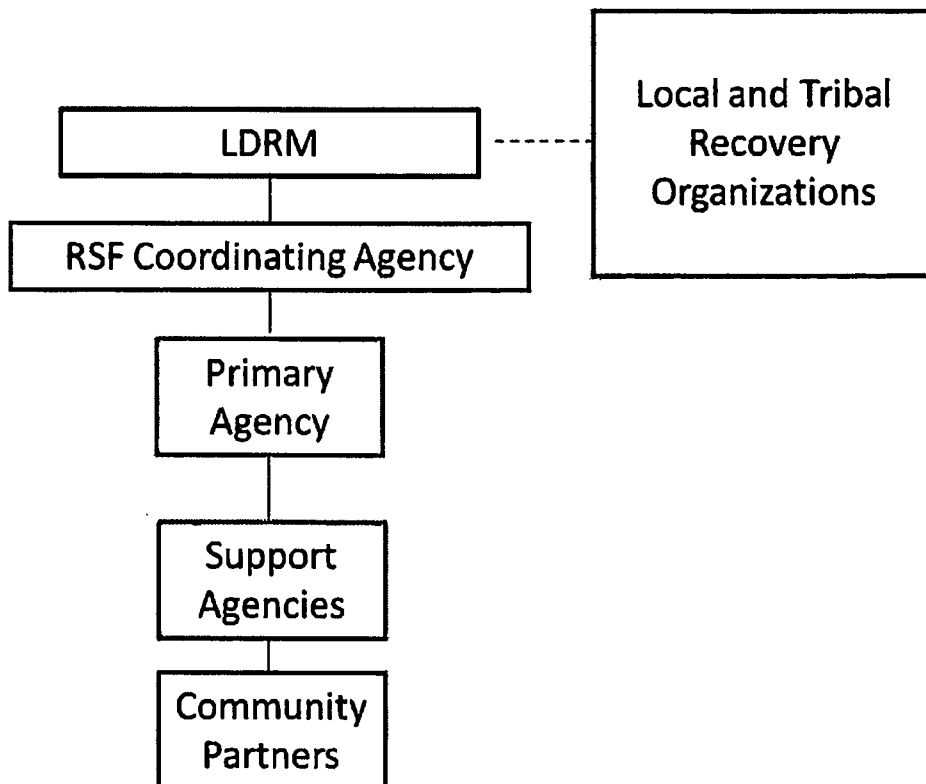
3.1 Organization

Regional recovery efforts are directed through the Washoe County Disaster Recovery Framework Basic Plan, which outlines roles and responsibilities and establishes a regional recovery organization, among other things.

RSFs are the organizing principle behind the county’s support to local and tribal recovery organizations.

RSFs mobilize the authorities and expertise of multiple county departments under a Coordinating Agency that ensures delivery of regional support. Each RSF includes Primary and Supporting Agencies, designated as such based on their frequency and degree of involvement in the RSF’s scope of operations. Each RSF’s Coordinating Agency reports to the Local Disaster Recovery Manager (LDRM) and channels requests for other RSFs and/or external support through the LDRM. Figure 1 illustrates the organizational structure of RSF 1.

Figure 1 RSF Organizational Structure



3.1.1 Coordinating Agency

The Coordinating Agency for RSF 1 is responsible for the following:

- Represent RSF 1 at MAC Group meetings;
- Facilitate communication and collaboration between RSF 1 Primary and Supporting Agencies, as well as with other RSFs;
- Coordinate development and regular update of a Community Planning and Capacity Building Recovery Action Plan to inform the overall Recovery Action Plan;
- Designate regional field coordinators as necessary to support local and tribal recovery activities;
- Designate a lead Public Information Officer (PIO) to represent RSF 1 in the Joint Information Center (JIC); and
- Assign a liaison to communicate with volunteer and community support organizations.

3.2 Preparedness

RSF 1 exists in a state of preparedness at all times. In the preparedness state:

- The Coordinating Agency regularly convenes representatives from the Primary Agencies to ensure that necessary plans and procedures are in place to ensure prompt action upon activation;
- Primary Agencies prepare their agency-specific plans and procedures and maintain the capabilities to deploy in the roles specified in this document; and
- Supporting Agencies are engaged by the relevant Primary Agencies to ensure their preparedness to efficiently and effectively assist when needed.

3.3 Activation

Following a disaster, regional support of emergency response will be managed by the LDRM. As disaster management transitions from response to recovery, a designated LDRM will assess the situation and determine whether to activate RSFs. All activations will be indicated to the Coordinating Agency, who in turn will notify the Primary and Supporting Agencies.

3.3.1 Transition from Response

Upon activation, each RSF will gradually take on roles associated with one or more REOC ICS Position activated during the response phase.

- The LDRM is responsible for agreeing on the timing of transition from response to recovery.

- When the LDRM activates RSF 1, the Recovery Unit is responsible for ensuring the smooth transition of regional disaster management activities from the following response units:
 - REOC Management Section
 - Services Branch (Logistics)
 - Support Branch (Logistics)
 - Public Information Unit
- Primary Agencies for each unit will be responsible for informing the Coordinating Agency of ongoing efforts that need to continue in the recovery phase and providing all relevant materials and contact information.

3.4 Activated State

In the activated state:

- The LDRM receives requests from local governments, tribal governments, and impacted communities requiring regional support in the field of community planning and capacity building;
- The LDRM and Coordinating Agency define short-term, intermediate, and long-term recovery goals and objectives for community planning and capacity building. These goals and objectives will become part of the function's recovery strategy and will take into account the type and impacts of the disaster, as well as the actions taken during emergency response;
- The Coordinating Agency coordinates assignments for Primary and Supporting Agencies as appropriate; checks regularly on the status of requests and assistance; and reports progress and issues to the LDRM;
- The Coordinating Agency may be called upon to provide RSF status reports and briefings to the MAC Group as needed;
- Primary Agencies deploy their capabilities according to prioritized needs identified by the Coordinating Agency, or the MAC Group. Deployed teams request additional support as needed; and
- Supporting Agencies provide complementary resources and capabilities, responding as needed to requests from the Primary Agencies.

3.5 Return to Preparedness

As recovery proceeds, RSF activities will gradually shift from recovery support to normal business. The LDRM, with the support of the Primary Agencies, will regularly assess whether current community planning and capacity building support continues to require special coordination under this RSF. When the LDRM determines that special coordination is no longer required, this RSF will revert to the preparedness state.

4 RSF ACTION PLAN

The LDRM may request RSF 1, via the Coordinating Agency, to prepare a Community Planning and Capacity Building Recovery Action Plan to inform the overarching Recovery Action Plan (RAP). This strategy will provide information to guide regional disaster housing recovery activities and should include the following information:

- Existing data on local and tribal needs for planning support;
- Initial priorities for community planning and capacity building; and
- Recommendations for RSF 1 support.

Activities and tasks that may support development of the Community Planning and Capacity Building Recovery Action Plan include the following:

- Gather and aggregate information for situational awareness on organizational challenges, planning needs, and recovery capacity among impacted local and tribal jurisdictions in the disaster areas;
- Designate a lead PIO to the JIC to help identify community needs and concerns, and provide resources via traditional and social media;
- Prepare summary profiles of conditions and potential limitations in the most impacted jurisdictions;
- Identify potential community planning and capacity building recovery partners and resources available, including any relevant state and federal programs;
- Identify and establish contracts with out-of-area partners who may be able to assist and augment local efforts following a disaster;
- Foster programs to strengthen communities' ability to self-contain recovery efforts and increase self-reliance; and
- Use the disaster recovery as an example of the strength and resilience of the impact community to attract people to the community.

5 ACTIVITIES BY RECOVERY PHASE

5.1 Preparedness

RSF 1 remains in a state of preparedness at all times through preparedness activities, such as coordinated community-wide planning, education, training, and resource augmentation. The following activities should be facilitated by the Coordinating Agency to ensure that the region is prepared to implement recovery operations effectively and efficiently:

- Pre-disaster recovery planning, including regular review and update of Coordinating, Primary, and Supporting Agency plans and procedures related to

community planning and capacity building support to local and tribal governments and impacted communities during disaster recovery:

- Support creation of recovery strategies that are organized, inclusive, planned, sustainable, and resilient;
 - Facilitate development of recovery partnerships and networks;
 - Ensure that plans incorporate the whole community (local, tribal, state, and territorial partners; non-governmental organizations such as faith-based and nonprofit groups and private-sector industry; and individuals, families, and communities);
 - Incorporate a transition to recovery in all response plans; and
 - Implement or support plans that promote self-preparedness of community members.
- Ensure that the resources, abilities, capacities, and authorities required to implement community planning and capacity building are available and coordinated within each Primary and Supporting Agency:
 - Ensure that government resources are available and sufficient to address recovery of the physical, economic, and social environment of the community; and
 - Build recovery skills, competencies, resources, and abilities of the whole community, including Coordinating and Supporting Agencies; local, tribal, private, and nonprofit organizations; and individuals and families through:
 - Education,
 - Training, and
 - Procurement.
 - Ensure that mechanisms for public communication are interoperable, redundant, and appropriate for diverse communities to empower individuals and families;
 - Identify and maintain relevant contact information for RSF 1 representatives in each Primary and Supporting Agency;
 - Strengthen partnerships among Coordinating, Primary, and Supporting Agencies, as well as community partners through ongoing exercises and workshops; and
 - Re-evaluate and strengthen hazard identification tools and systems.

5.2 Short-Term Recovery

Short-term recovery for communities will be coordinated through the REOC and response units. As the situation is stabilized, an LDRM may be appointed and may activate RSF 1 to support ongoing community planning and capacity building activities.

RSF 1 short-term recovery activities may include the following:

- Utilize the Nevada Intrastate Mutual Aid System (AB 90);
- Establish the formation of Disaster Recovery Centers, as outlined in Section 4.5 of the Basic Plan;
- Work with local governments, tribal governments, and impacted communities to assess and address immediate resource, capability, and capacity gaps;
- Identify, communicate, and provide available resources from partner agencies to impacted communities;
- Facilitate the extension of expertise to communities so that response activities support immediate and coordinated transition to recovery;
- Develop an approach for evaluating and prioritizing the recovery of community assets;
- Provide impacted communities with ongoing public information related to health hazards caused by the disaster; and
- Identify needs of out-of-area visitors and expedite travel out of the impacted area.

5.3 Intermediate Recovery

After the situation has been stabilized, recovery support will be fully transitioned from activated response units to the RSF organizational structure.

RSF 1 intermediate recovery activities may include the following:

- Develop an RSF Recovery Strategy to establish priorities for RSF activities, updating as required;
- Identify specific communities with significant need or areas of concern.
- Identify potential funding streams to ensure adequate financial resources to support intermediate recovery efforts;
- Perform a Conditions Assessment to:
 - Gather situational awareness on organizational challenges, planning needs, and recovery capacity across affected communities;
 - Identify data sources to assess impacts in affected communities; and
 - Collate data on conditions, capacities, resources, and impacts on affected communities.
- Assess cross-cutting community planning and capacity building disaster issues, potential partners, opportunities, considerations, and challenges. Regularly reassess and provide prioritized and coordinated resources and technical expertise to promote recovery of the physical, economic, and social environment of affected communities.

5.4 Long-Term Recovery

Community recovery activities can potentially extend for more than 18 months, and RSF 1 agencies should be prepared to maintain support of local and tribal recovery efforts for an extended period. These activities may take place in the context of an activated RSF or be managed through routine department operations as the need for a more structured recovery diminishes.

RSF 1 long-term recovery activities may include the following:

- Continue to update the RSF Recovery Strategy as the recovery progresses.
- Continually reassess intermediate recovery activities;
- Transition RSF activities back to responsible departments to manage through their routine operations;
- Continue to monitor local and tribal recovery activities and provide technical assistance as needed;
- Conduct public outreach activities to educate the public on recovery success stories;
- Document lessons learned and update mitigation, response, and recovery plans and procedures;
- Increase public awareness through the engagement of existing groups:
 - Homeowners associations,
 - VOADs,
 - CERT, and
 - Neighborhood groups.
- Identify additional community resources to address gaps in recovery services;
- Develop long-term, holistic resiliency and sustainability plans for community planning and capacity building functions:
 - Incentivize smart growth through existing and new taxation mechanisms; and
 - Incorporate LEED and green development systems into the development process.
- Purchase and repurpose parcels in hazard zones (i.e., park development).

6 COMMUNITY PARTNERS

The following list of organizations has been identified as a partial, non-exclusive list of partners supporting regional recovery efforts in the field of community planning and capacity building:

- Nevada National Guard
- Nevada Association of Counties

RSF 1 - Community Planning and Capacity Building

- City, county, and tribal planning departments
- City, county, and tribal emergency managers
- Tribal Enterprises
- U.S. Army Corps of Engineers (USACE) Silver Jackets
- American Red Cross
- Community and faith-based organizations
- Team Rubicon

Primary and Supporting Agencies for RSF 1 are responsible for identifying relevant partner organizations in the plans and procedures developed during the preparedness phase and for having the necessary tools to engage these partnerships upon RSF activation.

7 RSF DEVELOPMENT AND MAINTENANCE

Ongoing development and maintenance of this RSF Annex is essential to implementation of the community planning and capacity building function. To ensure preparedness activities are undertaken and sustained, the Coordinating Agency will:

- Assign work groups, as needed, to undertake ownership of their respective RSFs;
- Create a work plan that describes how the RSF will be maintained and implemented;
- Implement preparedness efforts, including recovery planning, review of existing response and mitigation plans, training and exercises, community outreach, partnership building, capacity building, and protocol development that will be undertaken with timelines and assignments of responsibility for implementation; and
- Encourage ownership by agency staff through education on the RSF and create a mechanism to obtain feedback for its improvement.

APPENDIX A - SUPPORTING PLANS AND PROCEDURES

Other important documents that provide guidance on community planning and capacity building include:

Regional

- Regional Emergency Operations Plan, 2016
- Washoe County Regional Hazard Mitigation Plan, 2015

State of Nevada

- Nevada State Comprehensive Emergency Management Plan, January 2014
 - ESF 5 - Emergency Management
 - ESF 7 - Purchasing
 - ESF 14 - Community Recovery, Mitigation, and Economic Stabilization
 - ESF 15 - Emergency Public Information
- State of Nevada Response and Recovery Guide to Emergencies and Disasters for State, Local, and Tribal Governments, Published by the Department of Public Safety, Division of Emergency Management, February 2011

Federal

- Federal Emergency Management Agency, National Disaster Recovery Framework, September 2011
- Federal Emergency Management Agency, Recovery Federal Interagency Operational Plan, Annex A: Community Planning and Capacity Building Recovery Support Function, July 2014
- FEMA Long-Term Community Recovery ToolBox
- State Disaster Relief Account (SDRA)
- Individual Assistance Procedures
- Public Assistance Procedures

RSF 2 - ECONOMIC RECOVERY

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RSF 2 Tasked Agencies	
Coordinating Agency	Community Services Department
Primary Agency	Community Services Department
Supporting Agencies	Comptroller Department Building and Safety Technology Services
State Coordinating Agency	Division of Emergency Management (DEM)
Federal Coordinating Agency	U.S. Department of Commerce
Response Coordination	Services Branch (Logistics) Support Branch (Logistics) Recovery Unit (Planning)

1 PURPOSE AND SCOPE

1.1 Purpose

Recovery Support Function (RSF) 2, Economic Recovery, and the five other RSFs, are essential parts of the *Washoe County Regional Disaster Recovery Framework*. This document presents the mission of RSF 2; its objectives, key activities, and areas of support; and the roles and capabilities of partners. Detailed operational and tactical guidance for regional personnel is provided in agency-specific guidance and planning documents.

The mission of RSF 2 is to integrate the expertise of Regional Partner agencies to facilitate the efforts of local governments, tribal governments, and impacted communities to sustain and rebuild businesses and employment, and to develop economic opportunities that result in sustainable and economically resilient communities after significant natural and human-caused disasters.

1.2 Scope

RSF 2 is designed to provide guidance to Regional Partner departments in aiding local and tribal partners in re-establishing financial conditions for continued function of the whole community for immediate, short-term, and long-term recovery. The following activities are encompassed within the scope of RSF 2:

- Support development of local, tribal, and private sector economic recovery plans;
- Provide financial and technical assistance to businesses impacted by the disaster to facilitate economic recovery;
- Assist in economic damage assessment; and
- Support individual economic recovery through workforce development activities.

Economic recovery in the region hinges upon reopening and re-establishing the leading business industries in the region (tourism and gaming, mining, gas and oil, and small, rural businesses), and further diversifying the region's economy (technology and mass-job providers).

2 ASSUMPTIONS

The following assumptions guide RSF 2 activities in pursuit of its mission:

- Local and tribal governments are the primary decision makers driving community recovery;
- A systematic approach to recovery increases the likelihood of successful recovery, project implementation, and fiscal support; and
- Intermediate and long-term economic vitality and resilience are primary objectives of the recovery process and are essential in ensuring the success of other dimensions of recovery.

3 CONCEPT OF OPERATIONS

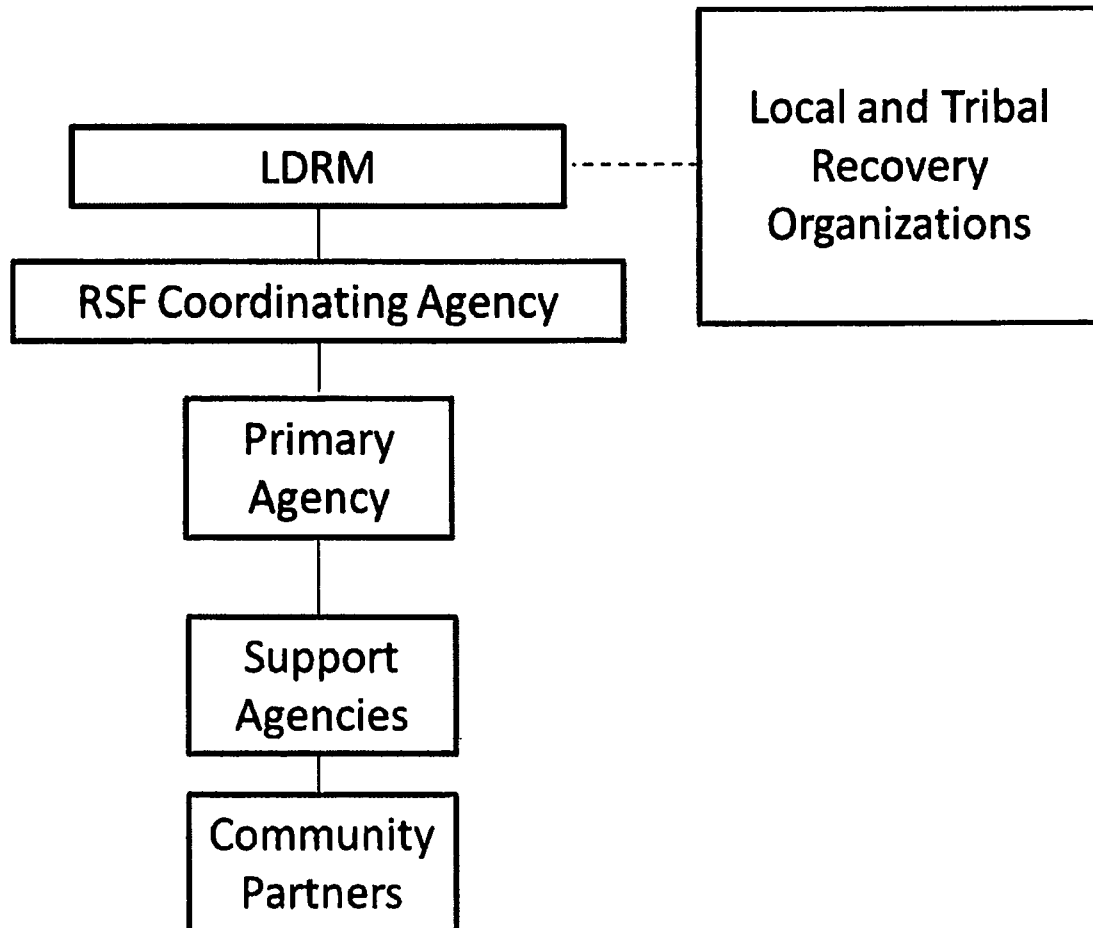
3.1 Organization

Regional recovery efforts are directed through the Regional Disaster Recovery Framework Basic Plan, which outlines roles and responsibilities and establishes a regional recovery organization, among other things.

RSFs are the organizing principle behind the region's support of local and tribal recovery organizations.

RSFs mobilize the authorities and expertise of multiple regional agencies under a Coordinating Agency that ensures delivery of regional support. Each RSF includes Primary and Supporting Agencies, designated as such based on their frequency and degree of involvement in the RSF's scope of operations. The RSF 2 Coordinating Agency reports to the Local Disaster Recovery Manager (LDRM) and channels requests for other RSFs and/or external support through the LDRM. Figure 1 illustrates the organizational structure of RSF 2.

Figure 1 RSF Organizational Structure



3.1.1 Coordinating Agency

The Coordinating Agency is responsible for the following:

- Represent RSF 2 at MAC Group meetings;
- Facilitate communication with and between Primary and Supporting Agencies for RSF 2;
- Coordinate efforts to implement economic recovery activities;
- Designate a lead Public Information Officer (PIO) to represent RSF 2 in the Joint Information Center (JIC);
- Coordinate development and regular update of an Economic Recovery Action Plan to inform the overall Recovery Action Plan; and
- Designate regional field coordinators as necessary to support local and tribal recovery activities.

3.2 Preparedness

RSF 2 exists in a state of preparedness at all times. In the preparedness state:

- The Coordinating Agency regularly convenes representatives from Primary and Supporting Agencies to ensure that necessary plans and procedures are in place to ensure prompt action upon activation;
- The Primary Agencies prepare plans and procedures and maintain the capabilities to deploy in the roles specified in this document; and
- Supporting Agencies are engaged by the Coordinating Agency to ensure their preparedness to efficiently and effectively assist when needed.

3.3 Activation

Following a disaster, regional support of an emergency response will be managed by the LDRM who will assess the situation and determine whether to activate RSFs.

3.3.1 *Transition from Response*

Upon activation, each RSF will gradually take on roles associated with one or more REOC ICS Position activated during the response phase:

- The LDRM is responsible for agreeing on the timing of transition from response to recovery;
- When the LDRM activates RSF 2, the Recovery Unit is responsible for ensuring the smooth transition of regional disaster management activities from the following response units:
 - Services Branch (Logistics)
 - Support Branch (Logistics)
- Primary Agencies for each unit will be responsible for informing the Coordinating Agency of ongoing efforts that need to continue in the recovery phase and providing all relevant materials and contact information.

3.4 Activated State

In the activated state:

- The LDRM receives requests from the Regional Emergency Operations Center (REOC), local governments, tribal governments, and impacted communities requiring regional support for economic recovery;
- The LDRM develops a Regional Recovery Action Plan to guide actions throughout the recovery phase, activating RSF 2 as appropriate;
- The LDRM and Coordinating Agency define short-term, intermediate, and long-term recovery goals and objectives for economic recovery. These goals and

objectives will become part of the function's recovery strategy and will take into account the type and impacts of the disaster, as well as the actions taken during emergency response;

- The Coordinating Agency coordinates assignments to the Primary and Supporting Agencies as appropriate; checks regularly on the status of requests and provided assistance; and reports progress and issues to the LDRM;
- DEM may be called upon to provide RSF status reports and briefings to the Policy Group; and
- Supporting Agencies provide complementary resources and capabilities, responding as needed to requests from DEM.

3.3.3 Return to Preparedness

As recovery proceeds, Regional Partner agency activities will gradually shift from special recovery support to normal business. The LDRM, with the support of DEM, will regularly assess whether current economic recovery support continues to require special coordination under RSF 2. When the LDRM determines that special coordination is no longer required, RSF 2 will revert to the preparedness state.

4 RSF ACTION PLAN

The LDRM may request RSF 2, via DEM, to prepare an Economic Recovery Action Plan to inform the overarching Regional Recovery Action Plan. This strategy will provide information to guide regional economic recovery activities and should include the following information:

- Existing data on local and tribal needs for economic recovery;
- Initial priorities for economic recovery; and
- Recommendations for RSF 2 support.

Activities and tasks that may support development of the Economic Recovery Action Plan include the following:

- Coordinate with Public Works and Building Services to gather and aggregate information regarding effects to businesses and tourism sites.
- Assess effects to tourism programs, based on timing or areas or facilities that have been affected by the disaster.
- Identify critical recovery needs, such as debris collection, based on the nature and scope of the disaster.
- Identify potential economic recovery partners and resources available, including any relevant federal programs.

5 ACTIVITIES BY RECOVERY PHASE

5.1 Preparedness

RSF 2 remains in a state of preparedness at all times through preparedness activities such as maintaining and enhancing the economic vitality of communities through development and implementation of economic strategies, and facilitating delivery of response and recovery funds. The following activities should be facilitated by the Coordinating Agency to ensure that the region is prepared to implement recovery operations effectively and efficiently:

- Identify and facilitate delivery of state and federal funding sources that can be accessed for each phase of recovery;
- Perform pre-disaster recovery planning, including regular review and updating of Coordinating, Primary, and Supporting Agency plans and procedures related to economic support of local and tribal governments and impacted communities during disaster recovery:
 - Maintain an inventory of public, private, and individual assistance funding programs, including grants and loans;
 - Engage communities to ensure awareness of disaster funding resources;
 - Develop and implement homeownership and business incentives to stabilize the tax base of local communities;
 - Implement workforce development programs to address unemployment in prioritized communities;
 - Foster partnerships with local business organizations to ensure awareness of resources and strengths and to address economic vulnerabilities:
 - Provide technical expertise to businesses for development of business continuity plans; and
 - Create or enhance business retention and expansion programs.
- Ensure that the resources and authorities required to implement economic recovery plans and procedures are available and coordinated within each Primary and Supporting Agency:
 - Ensure work force capacity to assist with requests for government, private, and individual financial assistance during and after disasters; and
 - Provide technical expertise to business' development of continuity of business plans.
- Ensure that mechanisms for public communication are interoperable, redundant, and appropriate for diverse communities to empower individuals and families:

- Identify volunteer organizations to support businesses in the following areas:
 - Rebuilding; and
 - Understanding of insurance policies and litigation.
- Identify and maintain relevant contact information for RSF 2 representatives in each Primary and Supporting Agency.

5.2 Short-Term Recovery

Short-term recovery for communities will be coordinated through the REOC and response units. As the situation is stabilized, an LDRM may be appointed and may activate RSF 2 to support ongoing economic recovery activities.

RSF 2 short-term recovery activities may include the following:

- Expedite the electricity and power restoration to support the reopening of businesses;
- Work with local governments, tribal governments, and impacted communities to perform an economic impact assessment;
- Work with local governments, tribal governments, and impacted communities to assess and address economic capacity gaps:
 - Prioritize economic support of low and low/moderate income communities, and functional needs populations;
 - Provide resources to governments and business with short-term cash flow issues; and
 - Provide logistical support to local supply chains for maintenance of commerce.
- Facilitate the extension of expertise to communities so that government, businesses, and residents are provided with short-term monetary support to maintain vital procurements and operations:
 - Provide immediate funding sources for prioritized businesses that support the daily operations of communities to continue operations;
 - Provide immediate funding sources for identified residents and communities to purchase food, medical and pharmaceutical supplies, and transportation support;
 - Provide immediate technical assistance to businesses critical to community recovery operations; and
 - Provide technical support to businesses implementing business continuity plans.
- Develop an approach for evaluating and prioritizing the recovery of economically important community assets;
- Support businesses in understanding their insurance policies and litigating claims;

- Provide a security presence for businesses recovering from the disaster; and
- Support RSF 5 - Infrastructure Systems through the identification of infrastructure critical to immediate economic stabilization.

5.3 Intermediate Recovery

After the situation has been stabilized, recovery support will be fully transitioned from activated response units to the RSF organizational structure.

RSF 2 intermediate recovery activities may include the following:

- Develop an RSF-specific Recovery Action Plan to establish priorities for RSF activities, updating as required;
- Facilitate an expedited permitting and inspection process;
- Support efforts to engage unions in economic recovery needs identification;
- Provide public information identifying the establishment of Disaster Recovery Centers;
- Support efforts to rebuild impacted tourism sectors that bring money and resources from outside sources;
- Conduct intermediate recovery support activities, including:
 - Continuous re-evaluation of unmet financial needs;
 - Determine unemployment assistance needs and develop Recovery Action Plan;
 - Determine opportunities for tax and regulatory relief for governments, businesses, and individuals;
 - Provide technical and financial support for temporary relocation of government operations, businesses, individuals, and families;
 - Provide technical support and financial incentives for community occupation or re-occupation by businesses, individuals, and families;
 - Develop and implement strategies to re-establish self-maintaining supply chains;
 - Restore private sector capacity through permanent repairs and improvements to buildings, as well as transportation and utility infrastructure;
 - Promote and facilitate outside investment; and
 - Facilitate timely distribution of direct financial assistance.

5.4 Long-Term Recovery

Community recovery activities can potentially extend for more than 18 months, and RSF 2 agencies should be prepared to maintain support of local and tribal recovery efforts for an extended period. These activities may take place in the context of an

activated RSF or be managed through routine department operations as the need for a more structured recovery diminishes.

RSF 2 long-term recovery activities may include the following:

- Revitalize struggling business sectors and support tourism outreach;
- Lead and facilitate a media blitz to highlight the recovery of regional businesses, with an emphasis on small and disadvantaged businesses;
- Continue to update the RSF Recovery Action Plan as the recovery progresses;
- Continually reassess intermediate recovery activities;
- Support local businesses through incentive programs and market the importance of the public' these businesses;
- Develop national recruitment campaign to entice re-entry into the impacted communities;
- Deliver unemployment assistance support;
- Transition RSF activities back to responsible departments to manage through their routine operations;
- Continue to monitor local and tribal recovery activities and provide technical assistance as needed;
- Conduct public outreach activities to educate the public on recovery success stories; and
- Document lessons learned and update mitigation, response, and recovery plans and procedures.

6 COMMUNITY PARTNERS

The following organizations have been identified as a partial, non-exclusive list of partners supporting regional recovery efforts in the field of economic recovery:

- Local Chambers of Commerce
- Nevada Association of Counties
- Nevada League of Cities and Municipalities
- Team Rubicon

Primary and Supporting Agencies for RSF 2 are responsible for identifying relevant partner organizations in the plans and procedures developed during the preparedness phase and for having the tools necessary to activate these partnerships upon RSF activation.

7 RSF DEVELOPMENT AND MAINTENANCE

Ongoing development and maintenance of this RSF annex is essential to implementation of the economic recovery function. To ensure that preparedness activities are undertaken and sustained, the Coordinating Agency will:

- Assign work groups, as needed, to undertake ownership of their respective RSF;
- Create a work plan which describes how the RSF will be maintained and implemented;
- Implement preparedness efforts including: recovery planning, review of existing response and mitigation plans, training and exercises, community outreach, partnership building, capacity building, and protocol development that will be undertaken with timelines and assignments of responsibility for implementation; and
- Encourage ownership by agency staff through education on the RSF and creating a mechanism to obtain feedback for its improvement.

APPENDIX A - SUPPORTING PLANS AND PROCEDURES

Other important documents that provide guidance on economic recovery include:

Regional

- Regional Emergency Operations Plan, 2016

State of Nevada

- Nevada State Comprehensive Emergency Management Plan, January 2014
 - ESF 7 - Purchasing and Resource Support
 - ESF 14 - Community Recovery, Mitigation, and Economic Stabilization
- State of Nevada Response and Recovery Guide to Emergencies and Disasters for State, Local, and Tribal Governments, Published by the Department of Public Safety, Division of Emergency Management, February 2011

Federal

- Federal Emergency Management Agency, National Disaster Recovery Framework, September 2011
- Federal Emergency Management Agency, Recovery Federal Interagency Operational Plan, Annex B: Economic Recovery Support Function, July 2014

RSF 3 - HEALTH AND SOCIAL SERVICES

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RSF 3 Tasked Agencies	
Coordinating Agency	Washoe County Health District (WCHD)
Primary Agency	WCHD Social Services
Supporting Agencies	Senior Services Juvenile Services Coroner's Office
State Coordinating Agency	Division of Emergency Management (DEM)
Federal Coordinating Agency	U.S. Department of Health and Human Services
Response Coordination	Medical Unit Coroner Unit Recovery Unit

1 PURPOSE AND SCOPE

1.1 Purpose

Recovery Support Function (RSF) 3, Health and Social Services, and the five other RSFs, are essential parts of the *Washoe County Regional Disaster Recovery Plan*. This document presents the mission of RSF 3; its objectives, key activities and areas of support; and the roles and capabilities of partners. Detailed operational and tactical guidance for regional personnel is provided in agency-specific guidance and planning documents.

The mission of RSF 3 is to assess public health, healthcare, and social services needs following a disaster, restore basic health and social services, identify key partners, and promote the independence and well-being of community members in accordance with the specified recovery timeline.

1.2 Scope

RSF 3 is designed to provide guidance to Regional Partner departments in aiding local and tribal partners in restoring the health and well-being of communities through restoration of healthcare, behavioral health, and public health services. Activities encompassed within the scope of RSF 3 include:

- Conduct ongoing public health activities, including epidemiologic surveillance;
- Conduct assessments of a disaster's impacts on public health and on local and tribal healthcare delivery systems;
- Support continuity and restoration of healthcare and social systems and services;
- Promote self-sufficiency of health and social services to impacted individuals and communities; and
- Provide clear and accessible recovery communications regarding access to social services to the whole community.

2 ASSUMPTIONS

The following assumptions guide RSF 3 activities in pursuit of its mission:

- Local and tribal governments are the primary decision makers driving community recovery;
- A systematic approach to recovery increases the likelihood of successful recovery, project implementation, and fiscal support; and
- Natural and human-caused disasters have the potential to cause a wide range of individual and public health impacts, including, but not limited to, creating or exacerbating medical conditions, damage to health facilities, interruptions in medical product supply chains, damage to water distribution networks and treatment plants, and many others.

3 CONCEPT OF OPERATIONS

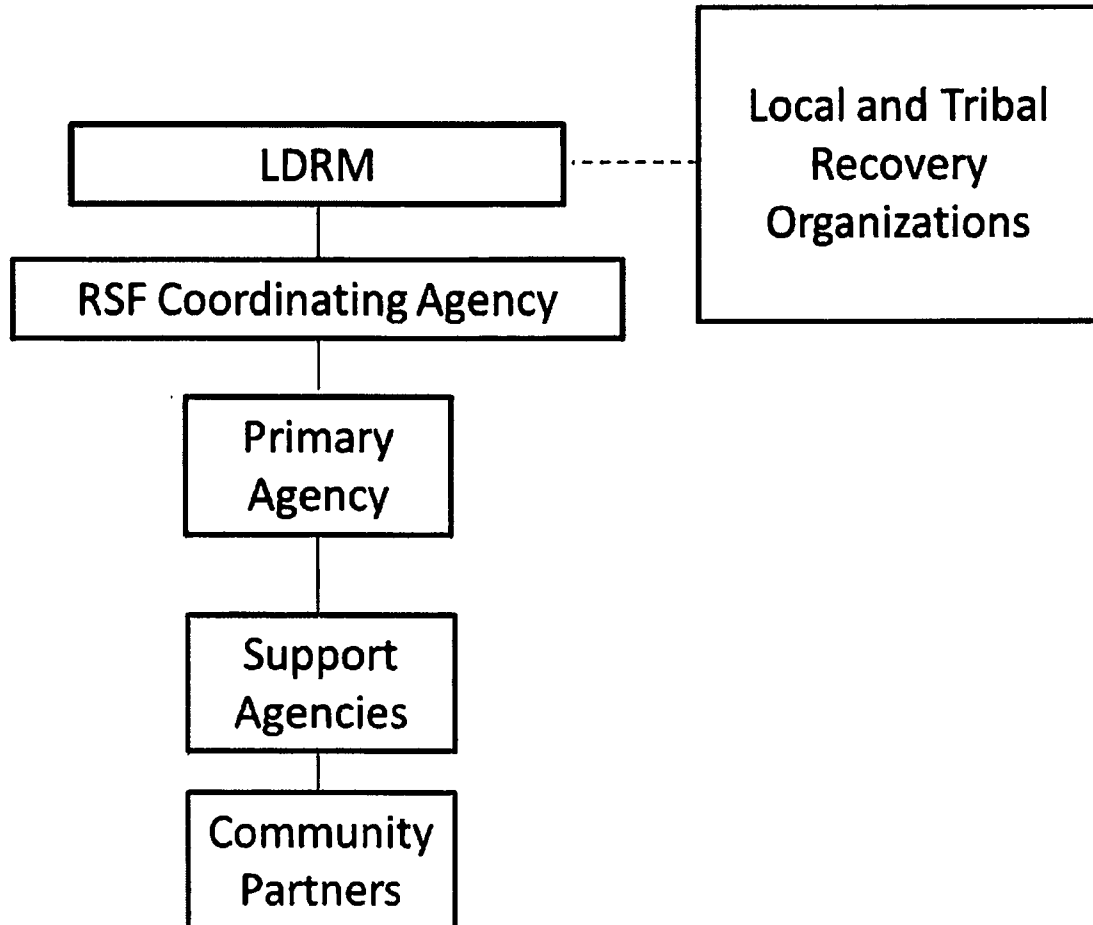
3.1 Organization

Regional recovery efforts are directed through the Regional Disaster Recovery Framework Basic Plan, which outlines roles and responsibilities and establishes a regional recovery organization, among other things.

RSFs are the organizing principle behind the region's support of local and tribal recovery organizations.

RSFs mobilize the authorities and expertise of multiple Regional Partner agencies under a Coordinating Agency that ensures delivery of regional support. Each RSF includes Primary and Supporting Agencies, designated as such based on their frequency and degree of involvement in the RSF's scope of operations. Each RSF Coordinating Agency reports to the Local Disaster Recovery Manager (LDRM) and channels requests for other RSFs and/or external support through the LDRM. Figure 1 illustrates the organizational structure of RSF 3.

Figure 1 RSF Organizational Structure



3.1.1 Coordinating Agency

The Coordinating Agency is responsible for the following:

- Facilitate communication with and between Primary and Supporting Agencies for RSF 3;
- Coordinate efforts to implement health and social services recovery activities;
- Coordinate development and regular update of a Health and Social Services Action Plan to inform the overall Regional Recovery Action Plan;
- Designate regional field coordinators as necessary to support local and tribal recovery activities; and
- Coordinate the transition of response units.

3.2 Preparedness

RSF 3 exists in a state of preparedness at all times. In the preparedness state:

- The Coordinating Agency regularly convenes representatives from Primary and Supporting Agencies to ensure that necessary plans and procedures are in place to ensure prompt action upon activation;
- Primary Agencies prepares function-specific plans and procedures and maintain the capabilities to deploy in the roles specified in this document; and
- Supporting Agencies are engaged by Primary Agencies to ensure their preparedness to efficiently and effectively assist when needed.

3.3 Activation

Following a disaster, regional support of emergency response will be managed by the LDRM who will assess the situation and determine whether to activate RSFs.

3.3.1 *Transition from Response*

Upon activation, each RSF will gradually take on roles associated with one or more response units activated during the response phase:

- The LDRM is responsible for agreeing on the timing of transition from response to recovery;
- When the LDRM activates RSF 3, the Recovery Unit is responsible for ensuring the smooth transition of regional disaster management activities from the following response units:
 - Medical Unit
 - Coroner Unit
- Primary agencies for each response unit will be responsible for informing the Coordinating Agency of ongoing efforts that need to continue in the recovery phase and providing all relevant materials and contact information.

3.4 Activated State

In the activated state:

- The LDRM receives requests from local governments, tribal governments, and impacted communities requiring regional support for health and social services;
- The LDRM develops a Regional Recovery Action Plan to guide actions throughout the recovery phase, activating RSF 3 as appropriate;
- The LDRM and Coordinating Agency define short-term, intermediate, and long-term recovery goals and objectives for health services. These goals and objectives will become part of the function's recovery strategy and will take

into account the type and impacts of the disaster, as well as the actions taken during emergency response;

- The Coordinating Agency coordinates identified assignments for Primary and Supporting Agencies as appropriate, checks regularly on the status of requests and provided assistance, and reports progress and issues to the LDRM;
- The Coordinating Agency may be called upon to provide RSF status reports and briefings to the MAC Group as needed;
- Primary Agencies deploy capabilities according to identified needs. Deployed teams request additional support as needed; and
- Supporting Agencies provide complementary resources and capabilities, responding as needed to requests from the Coordinating Agency.

3.5 Return to Preparedness

As recovery proceeds, regional agency activities will gradually shift from special recovery support to normal business. The LDRM, with the support of the Coordinating Agency, will regularly assess whether current health services support continues to require special coordination under RSF 3. When the LDRM determines that special coordination is no longer required, RSF 3 will revert to the preparedness state.

4 RSF ACTION PLAN

The LDRM may request RSF 3, via the Coordinating Agency, to prepare a Health and Human Services Recovery Action Plan to inform the overarching Regional Recovery Action Plan. This strategy will provide information to guide regional health services recovery activities and should include the following information:

- Existing data on local and tribal needs for health and social services support;
- Priorities for health services recovery; and
- Recommendations for RSF 3 support.

Activities and tasks that may support development of the Health and Human Services Recovery Action Plan include the following:

- Meet with agency leads and local health service providers to identify impacts to critical services, recovery priorities, points of contact, and procedures for coordination.
- Identify initial disaster assistance priorities.
- Assess any specific employee health and safety priorities, based on the nature and scope of the disaster.
- Identify potential recovery partners and resources available, including any relevant federal programs.

5 ACTIVITIES BY RECOVERY PHASE

5.1 Preparedness

RSF 3 remains in a state of preparedness at all times through preparedness activities such as identifying strengths and vulnerabilities within health systems, ensuring capacity and redundancy of health services, and ensuring ongoing access to facilities and services. The following activities should be facilitated by the Coordinating Agency to ensure that the region is prepared to implement recovery operations effectively and efficiently:

- Pre-disaster recovery planning, including regular review and updating of Coordinating, Primary, and Supporting Agency plans and procedures related to health services support of local and tribal governments and impacted communities during disaster recovery:
 - Ensure that recovery plans clearly define the transition from response to recovery and from recovery to steady state;
 - Ensure that recovery plans address the long-term healthcare and behavioral health needs of response and recovery workers;
 - Ensure that emergency response plans describe transitions from response to recovery;
 - Provide technical support for the performance of hazard vulnerability assessments of public health, healthcare, and behavioral health facilities and systems;
 - Foster partnerships between coordinating and Supporting Agencies and private health providers;
 - Develop plans to ensure continuity of operations for public health, healthcare, and behavioral health facilities during relocation, structural repairs or replacements, or facility closure; and
 - Develop strategies to ensure access to health facilities for the whole community during recovery through evaluation of transportation, including para-transit systems.
- Ensure that the resources and authorities required to implement health services recovery plans and procedures are available and coordinated within each Primary and Supporting Agency:
 - Provide training for public health officials on post-disaster hazards;
 - Develop strategies for long-term augmentation of local healthcare, behavioral health, and public health workforces; and
 - Promote establishment of mutual aid agreements and stand by contracts to augment system capacity and redundancy.

- Ensure that the resources and authorities required to implement social services recovery plans and procedures are available and coordinated within each Primary and Supporting Agency:
 - Provide technical support for the performance of hazard vulnerability assessments of social service facilities and systems;
 - Develop plans to ensure continuity of operations for social service facilities during relocation, structural repairs or replacements, or facility closure;
 - Develop strategies to ensure access to social services for the whole community during recovery through evaluation of transportation, including para-transit systems;
 - Proactively engage the community to ensure awareness of disaster social services resources; and
 - Develop strategies for long-term augmentation of local social services workforces.
- Coordinate with RSF 5 - Infrastructure Services to plan for the provision of utilities and public works resources to support health services during all phases of recovery;
- Ensure that mechanisms for public communication are interoperable, redundant, and appropriate for diverse communities to empower individuals and families:
 - Provide education, training, and resources across the whole community for personal health preparedness; and
 - Establish, and ensure the capacity of, crisis hotlines throughout all phases of recovery.
- Identify and maintain relevant contact information for RSF 3 representatives in each Primary and Supporting Agency.

5.2 Short-Term Recovery

Short-term recovery for communities will be coordinated through the Regional Emergency Operations Center and response units. As the situation is stabilized, an LDRM may be appointed and may activate RSF 3 to support ongoing health services activities.

RSF 3 short-term recovery activities may include the following:

- Provide daily public notification briefings detailing ongoing public health concerns including:
 - Contamination and boiled water notices;
 - Presence of disease;
 - Health and social services outages; and

- Waste disposal messaging.
- Provide psychological support to impacted communities;
- Develop an approach for evaluating and prioritizing the recovery of social services assets;
- Establish a timeline for elements of social services recovery;
- Evaluate flexibilities and waivers that may be applicable to disaster-impacted individuals receiving federal program assistance;
- Facilitate the extension of expertise to communities to facilitate return of individuals to pre-disaster work, school, and leisure activities;
- Work with local governments, tribal governments, and impacted communities to assess and address health services capacity gaps:
 - Communicate with health organizations and practitioners to identify resource needs; and
 - Augment local health services workforces, laboratory capacity, and technical expertise.
- Coordinate with RSF 6 - Infrastructure Services to provide utilities and public works resources to support health services;
- Develop an approach for evaluating and prioritizing the recovery of health services assets;
- Facilitate access to federal caches of medical materiel;
- Facilitate expedited credentialing of health workers;
- For the protection of public health, facilitate expedited repair, permitting, and inspection of:
 - Potable water and waste treatment systems;
 - Food establishments;
 - Laboratories; and
 - Health facility building repairs, renovations, and replacement.

5.3 Intermediate Recovery

After the situation has been stabilized, recovery support will be fully transitioned from activated response units to the RSF organizational structure.

RSF 3 intermediate recovery activities may include the following:

- Develop an RSF Recovery Action Plan to establish priorities for RSF activities, updating as required. This strategy will include:
 - Reassessment of health and social system status; and
 - Identification of long-term recovery needs.
- Coordinate health care facility coalitions to provide essential health and social services;
- Conduct intermediate recovery support activities, including:

- Work force augmentation through employment incentives;
- Prioritized repair of non-critical health facilities;
- Support maintenance of preventative care services and chronic disease prevention programs;
- Promoting government social services work force augmentation (i.e., case management and volunteer management); and
- Promoting social services work force augmentation through outside nongovernmental (volunteer) organizations.

5.4 Long-Term Recovery

Community recovery activities can potentially extend for more than 18 months, and RSF 3 agencies should be prepared to maintain support of local and tribal recovery efforts for an extended period. These activities may take place in the context of an activated RSF or be managed through routine department operations as the need for a more structured recovery diminishes.

RSF 3 long-term recovery activities may include the following:

- Continue to update the RSF Recovery Action Plan as the recovery progresses;
- Continually reassess intermediate recovery activities;
- Support RSF 2 in identifying employee assistance programs for those whose health was severely impacted by the disaster;
- Provide ongoing public information regarding lessons learned and ongoing support centers;
- Ensure vulnerable populations have received needed services;
- Develop “Train the Trainer” public education programs;
- Transition RSF activities back to responsible departments to manage through their routine operations;
- Continue to monitor local and tribal recovery activities and provide technical assistance as needed;
- Conduct public outreach activities to educate the public on recovery success stories; and
- Document lessons learned and update mitigation, response, and recovery plans and procedures.

6 COMMUNITY PARTNERS

The following list of organizations has been identified as a partial, non-exclusive list of partners supporting regional recovery efforts in the field of health services:

- American Red Cross
- Nevada food banks

- Nevada 1 Disaster Medical Assistance Team (DMAT)
- Local Public Health Authorities
- Hospitals and Healthcare Systems
- Nevada Voluntary Organizations Active in Disaster
- Coordinated Care Organizations
- Community Action Agencies
- Public schools and colleges
- Team Rubicon

Primary and Supporting Agencies for RSF 3 are responsible for identifying relevant partner organizations in the plans and procedures developed during the preparedness phase and for having the necessary tools to activate these partnerships upon RSF activation.

7 RSF DEVELOPMENT AND MAINTENANCE

Ongoing development and maintenance of this RSF annex is essential to implementation of the health services function. To ensure that preparedness activities are undertaken and sustained, the Coordinating Agency will:

- Assign work groups, as needed, to undertake ownership of their respective RSFs;
- Create a work plan that describes how the RSF will be maintained and implemented;
- Implement preparedness efforts, including recovery planning, review of existing response and mitigation plans, training and exercises, community outreach, partnership building, capacity building, and protocol development that will be undertaken with timelines and assignments of responsibility for implementation; and
- Encourage ownership by agency staff through education on the RSF and creating a mechanism to obtain feedback for its improvement.

APPENDIX A - SUPPORTING PLANS AND PROCEDURES

Other important documents that provide guidance on health services recovery include:

Regional

- Regional Emergency Operations Plan, 2016
- Washoe County Health District Plans

State of Nevada

- Nevada State Comprehensive Emergency Management Plan, January 2014
 - ESF 8 - Public Health and Medical Services
 - ESF 8-1 - Mental health
 - ESF 14 - Community Recovery, Mitigation, and Economic Stabilization
- State of Nevada Response and Recovery Guide to Emergencies and Disasters for State, Local, and Tribal Governments, Published by the Department of Public Safety, Division of Emergency Management, February 2011

Federal

- Federal Emergency Management Agency, National Disaster Recovery Framework, September 2011
- Federal Emergency Management Agency, Recovery Federal Interagency Operational Plan, Annex C: Health and Social Services Recovery Support Function, July 2014

RSF 4 - DISASTER HOUSING

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RSF 4 Tasked Agencies	
Coordinating Agency	Emergency Management and Homeland Security Program Community Services Department
Primary Agency	Emergency Management and Homeland Security Program Community Services Department
Supporting Agencies	Animal Services Building and Safety Juvenile Services Senior Services WCHD Social Services CERT Team
State Coordinating Agency	Division of Emergency Management (DEM)
Federal Coordinating Agency	U.S. Department of Housing and Urban Development
Response Coordination	REOC Management Section Care and Shelter Unit Cert Team Medical Unit

1 PURPOSE AND SCOPE

1.1 Purpose

Recovery Support Function (RSF) 4, Disaster Housing, and the five other RSFs are essential parts of the *Washoe County Regional Disaster Recovery Framework*. This document presents the mission of RSF 4; its objectives, key activities and areas of support; and the roles and capabilities of partners. Detailed operational and tactical guidance for regional personnel is provided in agency-specific guidance and planning documents.

The mission of RSF 4 is to address pre- and post-disaster housing issues and coordinate the delivery of regional resources and activities to assist local and tribal governments as they rehabilitate and reconstruct destroyed and damaged housing, when feasible, and develop new accessible, permanent housing options.

1.2 Scope

As indicated in the chart below, following a disaster, individuals and households typically require four types of housing. It is the responsibility of RSF 4 to locate and coordinate the use of facilities and resources for the phases of disaster housing.



- **Emergency shelter:** spontaneously established locations to protect individuals from the incident and elements (e.g., open fields, vehicles, unused facilities).
- **Temporary shelter:** mass-care facilities used to provide food, water, and needed health services (e.g., school facilities, churches).
- **Temporary housing:** facilities that allow households to re-establish their daily lives by attending school and work (e.g., hotels, rental properties).
- **Permanent housing:** housing that allows households to re-establish their daily lives in preferred locations and structures (e.g., single- and multi-family homes, apartments).

RSF 4 is designed to provide guidance to Regional Partner departments in aiding local and tribal partners in providing temporary, short-term, and long-term disaster housing for individuals and families, with a goal of long-term housing solutions wherever feasible. The following activities are encompassed within the scope of RSF 4:

- Ensuring that immediate sheltering needs are met and maintained for an extended timeframe;
- Ensuring that intermediate housing solutions are available for evacuees and temporarily displaced families and individuals that facilitate continuance of their regular activities of work, school, and leisure;
- Providing resources to promote long-term housing solutions, including home ownership; and
- Addressing pets and service animals in regional housing strategies.

2 ASSUMPTIONS

The following assumptions guide RSF 4 activities in pursuit of its mission:

- Local and tribal governments are the primary decision makers driving community recovery;
- A systematic approach to recovery increases the likelihood of successful recovery, project implementation, and fiscal support;

- A number of factors or obstacles may affect the ability of renters, homeowners, or landlords to retain, obtain, or create permanent housing, including:
 - Financial ability to secure, repair, and/or rebuild permanent housing. For renters, this includes the ability to find and afford post-disaster rental housing; for homeowners and landlords, this includes whether they had adequate insurance and/or the ability to finance the cost of repairs or rebuilding;
 - Timeliness and effect of local land use decisions, environmental and historic preservation laws, including the implications for where, how, and whether homes can be rebuilt;
 - Timeliness and expense of building codes plan review, permitting, and inspections to support resilient communities;
 - Availability and cost of labor and building materials;
 - Ability to obtain and afford adequate hazard and flood insurance in the future; and
 - Decisions by neighboring property owners to rebuild or abandon damaged structures—a large number of owners deciding not to rebuild can create substantial problems for the neighbors that do rebuild.

3 CONCEPT OF OPERATIONS

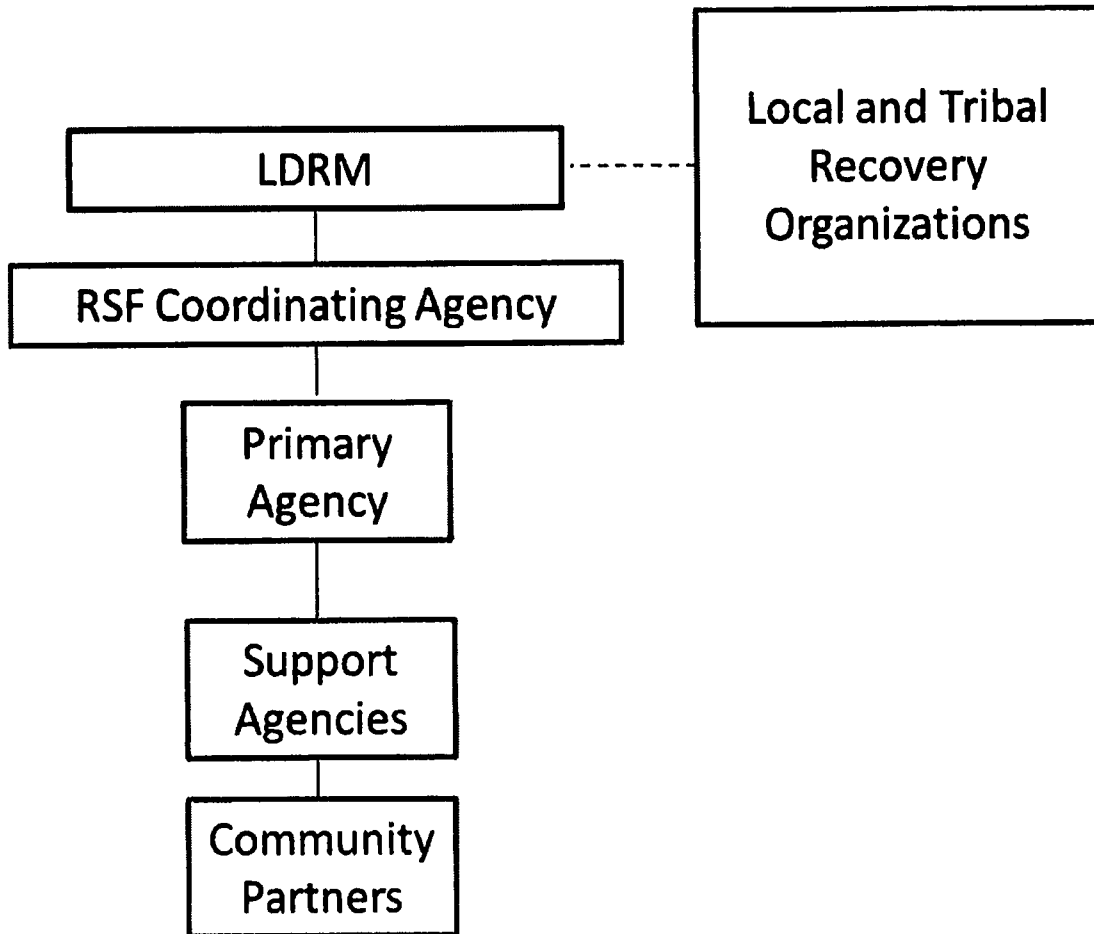
3.1 Organization

Regional recovery efforts are directed through the Regional Disaster Recovery Framework Basic Plan, which outlines roles and responsibilities and establishes a regional recovery organization, among other things.

RSFs are the organizing principle behind the region's support to the community.

RSFs mobilize the authorities and expertise of multiple Regional Partner departments under a Coordinating Agency that ensures delivery of regional support. Each RSF includes Primary and Supporting Agencies, designated as such based on their frequency and degree of involvement in the RSF's scope of operations. Each RSF's Coordinating Agency reports to the Local Disaster Recovery Manager (LDRM) and channels requests for other RSFs and/or external support through the LDRM. Figure 1 below illustrates the organizational structure of RSF 4.

Figure 1 RSF Organizational Structure



3.1.1 Coordinating Agency

The Coordinating Agency is responsible for ensuring that the RSF serves its purpose during the preparedness and activated states. In the preparedness state, the Coordinating Agency ensures the continuity of the RSF by convening representatives from Primary and Supporting Agencies and ensuring that plans and procedures are in place, key staff are trained, and expected resources are available if needed. In the activated state, the Coordinating Agency takes a lead role in defining and directing actions to be taken by the deployed Primary and Supporting Agencies in support of recovery.

The Coordinating Agency is responsible for the following:

- Represent the Disaster Housing RSF at the MAC Group;
- Facilitate communication and collaboration between RSF 4 Primary and Supporting Agencies, as well as other RSFs;
- Coordinate efforts to implement disaster housing activities;
- Coordinate development and regular update of a Disaster Housing Recovery Action Plan to inform the overall Regional Recovery Action Plan;
- Designate regional field coordinators as necessary to support local and tribal recovery activities; and
- Coordinate the transition from response units to RSF 4.

3.2 Preparedness

RSF 4 exists in a state of preparedness at all times. In the preparedness state:

- The Coordinating Agency regularly convenes representatives from Primary and Supporting Agencies to ensure that necessary plans and procedures are in place to ensure prompt action upon activation;
- The Primary Agencies prepare agency-specific plans and procedures and maintain the capabilities to deploy in the roles specified in this document; and
- Supporting Agencies are engaged by the Primary Agencies to ensure their preparedness to efficiently and effectively assist when needed.

3.3 Activation

Following a disaster, regional support of emergency response will be managed by the LDRM who will assess the situation and determine whether to activate RSFs.

3.3.1 Transition from Response

Upon activation, each RSF will gradually take on roles associated with one or more REOC response units activated during the response phase:

- The LDRM and Recovery Unit Leader are responsible for agreeing on the timing of transition from response to recovery;
- When the LDRM activates RSF 4, the Coordinating Agency is responsible for ensuring the smooth transition of regional disaster management activities from the following response units:
 - Care and Shelter Unit
 - CERT Team
 - Medical Unit

The Care and Shelter Unit Leader will be responsible for informing the Coordinating Agency of ongoing efforts that need to continue in the recovery phase and for providing all relevant materials and contact information.

3.4 Activated State

In the activated state:

- The LDRM receives requests from local governments, tribal governments, and impacted communities requiring regional support for disaster housing;
- The LDRM and the Coordinating Agency define short-term, intermediate, and long-term recovery goals and objectives for disaster housing. These goals and objectives will become part of the function's recovery strategy and will take into account the type and impacts of the disaster, as well as the actions taken during emergency response;
- The Coordinating Agency coordinates assignments for Supporting Agencies as appropriate, checks regularly on the status of requests and provided assistance, and reports progress and issues to the LDRM;
- The Coordinating Agency may be called upon to provide RSF status reports and briefings to the MAC Group as needed;
- The Coordinating Agency deploys capabilities according to identified needs. Deployed teams request additional support as needed; and
- Supporting Agencies provide complementary resources and capabilities, responding as needed to requests from the Coordinating Agency.

3.5 Return to Preparedness

As recovery proceeds, Regional Partner agency activities will gradually shift from special recovery support back to the preparedness state and normal business. The LDRM, with the support of the Coordinating Agency, will regularly assess whether current disaster housing support continues to require special coordination under RSF 4. When the LDRM determines that special coordination is no longer required, RSF 4 will revert to the preparedness state.

4 RSF ACTION PLAN

The LDRM may request RSF 4, via the Coordinating Agency, to prepare a Disaster Housing Recovery Action Plan to inform the overarching Regional Recovery Action Plan. This strategy will provide information to guide regional disaster housing recovery activities and should include the following information:

- Existing data on housing impacts;
- Priorities for disaster housing recovery; and

- Recommendations for RSF 4 support.

5 ACTIVITIES BY RECOVERY PHASE

5.1 Preparedness

RSF 4 remains in a state of preparedness at all times through preparedness activities, including plan and policy development to mitigate housing damage, and technical and financial resources to aid in all phases of housing recovery for individuals and families. The following activities should be facilitated by the Coordinating Agency to ensure that the region is prepared to implement disaster housing operations effectively and efficiently:

- Pre-disaster recovery planning, including regular review and updating of Coordinating, Primary, and Supporting Agency plans and procedures related to disaster housing for local and tribal governments and impacted communities during disaster recovery:
 - Assess the potential risks of hazards on community housing resources.
 - Identify post-disaster housing resources and programs for:
 - Affordable housing;
 - Unmet housing needs;
 - Mortgage relief;
 - Mortgage insurance;
 - Re-allocation of funding for disaster relief;
 - Fair housing; and
 - Grants and loans, including “gap” funding for home repairs and renovations.
 - In coordination with RSF 6 - Natural and Cultural Resources, identify historic housing structures and identify strategies for protecting them;
 - Perform or collect and analyze housing assessments to identify vulnerabilities to damage, strengths, and potential challenges to disaster housing of communities;
 - Identify housing facilities for short-term, intermediate, and long-term needs;
 - Coordinate with RSF 3 - Health and Social Services to identify food and hygiene resources for shelters and transitional housing;
 - Promote development of land use regulations, zoning laws as components of hazard mitigation planning;
 - Promote implementation of building codes as components of hazard mitigation planning; and

- Promote planning that incorporates concepts of smart growth and low impact development.
- Ensure that the resources and authorities required to implement disaster housing recovery plans and procedures are available and coordinated within each Primary and Supporting Agency:
 - Provide resources and support to access housing assistance funding, ensuring:
 - Administrative capacity to process large numbers of requests for individual housing funds; and
 - Field workforce capacity to assist communities in all phases of housing recovery.
 - Evaluate the availability of building materials and labor for post-disaster home repair, addressing provisions for:
 - Storage and staging of donated building materials; and
 - Housing and living resources for construction labor.
- Ensure procedures and resources are in place to provide ongoing temporary sheltering of community members temporarily unable to return to their homes;
- Ensure that mechanisms for public communication are interoperable, redundant, and appropriate for diverse communities to empower individuals and families;
- Promote generation and distribution of home disaster preparedness and recovery resources;
- Identify private and non-governmental partners that can support shelter and transitional housing needs; and
- Identify and maintain relevant contact information for RSF 4 representatives in each Primary and Supporting Agency.

5.2 Short-Term Recovery

Short-term recovery for disaster housing will be coordinated through the Regional Emergency Operations Center and response units. As the incident is stabilized, an LDRM may be appointed and may activate RSF 4 to support ongoing disaster housing activities.

RSF 4 short-term recovery activities may include the following:

- Work with local governments, tribal governments, and impacted communities, and RSF 3 - Health and Social Services, RSF 5 - Infrastructure Systems, and RSF 6 - Natural and Cultural Resources, to assess and address capacity gaps:
 - Support or perform post-disaster housing damage assessments;
 - Repeat unmet needs assessment to determine unmet housing needs; and

- Identify impacted populations with specialized post-disaster housing needs, including children, seniors, and persons with disabilities and functional needs.
- Coordinate with RSF 3 - Health and Social Services for the deployment of food and hygiene resources to shelters;
- Facilitate family reunification and temporary relocation efforts;
- Develop an approach for evaluating and prioritizing the recovery of disaster housing assets:
 - Support or conduct Market-at-a-Glance Reports to determine the economic, demographic, and housing conditions in the affected area;
 - Support or conduct comprehensive housing market analyses to track employment, population, households, and housing inventory trends; and
 - Develop a timeline for temporary and permanent disaster housing recovery.
- Facilitate expedited permitting for housing renovations and new construction.
- Transition shelter activities out of schools and other needed facilities, and into longer-term, transitional facilities.
 - This activity will help to ensure RSF 4 activities are not negatively impacting recovery efforts in the other five RSFs.
- Facilitate the extension of expertise to communities so that temporary housing solutions can be implemented:
 - Facilitate access of individuals and families to housing resources and programs;
 - Facilitate the extension of expertise to communities so that temporary disaster housing solutions can be implemented:
 - Manage construction and supporting volunteers; and
 - Manage building material donations.

5.3 Intermediate Recovery

After the incident has been stabilized, recovery support will be fully transitioned from activated response units to the RSF organizational structure.

RSF 4 intermediate recovery activities may include the following:

- Transition remaining impacted community members into transitional housing (i.e., hotels);
- Work with community organizations including the American Red Cross, Habitat for Humanity, Salvation Army, local housing authorities, faith-based organizations, and others to identify community housing resources including:
 - Hotels;
 - Rental properties;

- Manufactured homes;
- Buildable and portable shelters; and
- Rentable recreational vehicles.
- If needed, request support from state and federal RSF 4 Coordinating Agencies, DEM and Housing and Urban Development (HUD) respectively;
- Develop an RSF Recovery Action Plan to establish priorities for RSF activities, update as required:
 - Reassess housing damage and repair status and adjust priorities and resources accordingly;
 - Repeat unmet needs assessment to determine unmet housing needs;
 - Repeat comprehensive housing market analyses to track employment, population, households, and housing inventory trends; and
 - Reassess the timeline for temporary and permanent disaster housing recovery.
- Conduct intermediate recovery support activities, including the following activities;
- Facilitate the extension of expertise to communities so that permanent housing solutions can be implemented:
 - Manage construction and supporting volunteers; and
 - Manage building material donations.
- Provide incentives for displaced or relocated residents to return to the community;
- Provide support for home repairs that creates resilient housing in preparation for future disasters;
- Provide technical and human support for remediation of hazardous materials (biological, chemical, etc.) contamination in housing units;
- Develop strategies for long-term affordable housing; and
- Employ technical and monetary resources, and provide incentives, to encourage home ownership.

5.4 Long-Term Recovery

Community recovery activities can potentially extend for years, and RSF 4 agencies should be prepared to maintain support of local and tribal recovery efforts for an extended period. These activities may take place in the context of an activated RSF or be managed through routine department operations as the need for a more structured recovery diminishes.

RSF 4 long-term recovery activities may include the following:

- Continue to update the RSF Recovery Action Plan as the recovery progresses;

- Facilitate expedited rebuilding efforts through relaxation of permitting requirements (work with RSF 1, 5, and 6);
- Support economic recovery efforts (RSF 2) to ensure impacted individuals have the financial means to afford permanent housing;
- Continuous reassessment of intermediate recovery activities;
- Identify partners to assist with locating permanent housing options for remaining impacted community members;
- Transition RSF activities back to responsible departments to manage through their routine operations;
- Reconsider zoning laws and regulations to incentivize smart redevelopment:
 - Simplify building codes;
 - Purchase private lands within hazard zones and transition into parks and other public lands functions; and
 - Provide tax incentives for smart growth.
- Continue to monitor local and tribal recovery activities and provide technical assistance as needed;
- Conduct public outreach activities to educate the public on recovery success stories;
- Reassess land use and master plans to align with identified hazard zones (i.e. Federal Emergency Management Agency [FEMA] floodplain maps); and
- Document lessons learned and update mitigation, response, and recovery plans and procedures.

6 COMMUNITY PARTNERS

The following list of organizations has been identified as a partial, non-exclusive list of partners supporting regional recovery efforts in the field of disaster housing:

- American Red Cross
- Community Action Agencies
- Community and Faith-Based Organizations
- Habitat for Humanity
- Local Housing Authorities
- Nevada Contractors Association
- Voluntary Organizations Active in Disaster
- Team Rubicon

Primary and Supporting Agencies for RSF 4 are responsible for identifying relevant partner organizations in the plans and procedures developed during the preparedness phase, and for having the necessary tools for activating these partnerships upon RSF activation.

7 RSF DEVELOPMENT AND MAINTENANCE

Ongoing development and maintenance of this RSF annex is essential to implementation of the disaster housing function. To ensure that preparedness activities are undertaken and sustained, the Coordinating Agency will:

- Assign work groups, as needed, to undertake ownership of their respective RSFs;
- Create a work plan that describes how the RSF will be maintained and implemented;
- Implement preparedness efforts, including recovery planning; review of existing response and mitigation plans; training and exercises; community outreach; partnership building; capacity building; and protocol development that will be undertaken with timelines and assignments of responsibility for implementation; and
- Encourage ownership by agency staff through education on the RSF and creating a mechanism to obtain feedback for its improvement.

APPENDIX A - SUPPORTING PLANS AND PROCEDURES

Other important documents that provide guidance on disaster housing include:

Regional

- Regional Emergency Operations Plan, 2016

State of Nevada

- Nevada State Comprehensive Emergency Management Plan
 - ESF 6 - Mass Care, Housing, and Human Services
- State of Nevada Response and Recovery Guide to Emergencies and Disasters for State, Local, and Tribal Governments, Published by the Department of Public Safety, Division of Emergency Management, February 2011

Federal

- FEMA, National Disaster Recovery Framework, September 2011
- FEMA, Recovery Federal Interagency Operational Plan, Annex D: Housing Recovery Support Function, July 2014
- FEMA National Disaster Housing Strategy, July 2009
- FEMA Catastrophic Housing Annex to the 2012 Federal Interagency Operations Plan - Hurricane, August 2012
- HUD Handbook 4350.1, Chapter 38, Multifamily Emergency/Disaster Guidance

RSF 5 - INFRASTRUCTURE SYSTEMS

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RSF 5 Tasked Agencies	
Coordinating Agency	Community Services Department
Primary Agency	Community Services Department Roads
Supporting Agencies	Regional Parks and Open Spaces Technology Services Building and Safety Northern Nevada Regional Intelligence Center (NINRIC)
State Coordinating Agency	Division of Emergency Management (DEM)
Federal Coordinating Agency	U.S. Army Corps of Engineers
Response Coordination	Public Works Unit Damage Assessment Unit Debris Management Unit Transportation Unit

1 PURPOSE AND SCOPE

1.1 Purpose

Recovery Support Function (RSF) 5, Infrastructure Systems, and the five other RSFs are essential parts of the *Washoe County Regional Disaster Recovery Framework*. This document presents the mission of RSF 5; its objectives, key activities and areas of support; and the roles and capabilities of partners. Detailed operational and tactical guidance for regional personnel is provided in agency-specific guidance and planning documents.

The mission of RSF 5 is to match the capacity of all infrastructure systems, including, but not limited to, critical facilities, transportation, energy, water, wastewater, and telecommunications to a community’s current and projected demand based on its built and virtual environment.

1.2 Scope

RSF 5 is designed to provide guidance to Regional Partner departments in aiding local and tribal partners in recovery of the built environment. The following activities are encompassed within the scope of RSF 5:

- Coordinate with public and private owners and managers of infrastructure sectors and subsectors to recover essential community services, resources, and operations related to:
 - Energy;
 - Water;
 - Dams;
 - Telecommunications;
 - Transportation systems (air, land, and water);
 - Food and water;
 - Critical facilities (government, healthcare, education, etc.);
 - Sanitation; and
 - Flood control.

2 ASSUMPTIONS

The following assumptions guide RSF 5 activities in pursuit of its mission:

- Local and tribal governments are the primary decision makers driving community recovery;
- A systematic approach to recovery increases the likelihood of successful recovery, project implementation, and fiscal support;
- Technical assistance is provided to help local government, tribal government, and impacted communities to identify and prioritize critical infrastructure systems and assets; and
- Local needs and expectations contribute to a redefined state of normalcy.

3 CONCEPT OF OPERATIONS

3.1 Organization

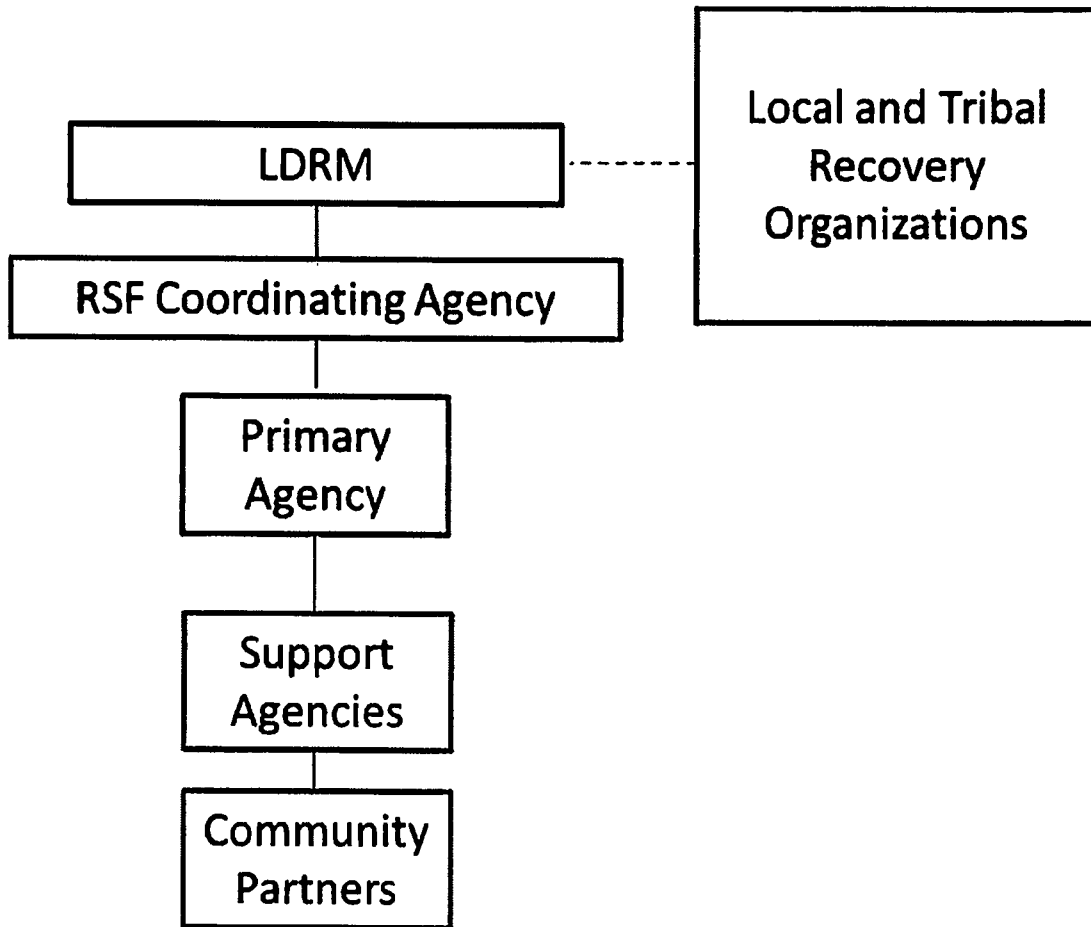
Regional recovery efforts are directed through the Regional Disaster Recovery Framework Basic Plan, which outlines roles and responsibilities and establishes a regional recovery organization, among other things.

RSFs are the organizing principle behind the region's support of local and tribal recovery organizations.

RSFs mobilize the authorities and expertise of multiple Regional Partner agencies under a Coordinating Agency that ensures delivery of regional support. Each RSF includes Primary and Supporting Agencies, designated as such based on their frequency and degree of involvement in the RSF's scope of operations. Each RSF's Coordinating Agency, reports to the Local Disaster Recovery Manager (LDRM) and

channels requests for other RSFs and/or external support through the LDRM. Figure 1 below illustrates the organizational structure of RSF 5.

Figure 1 RSF Organizational Structure



3.1.1 Coordinating Agency

The Coordinating Agency is responsible for ensuring that the RSF serves its purpose during the preparedness and activated states. In the preparedness state, the Coordinating Agency ensures the continuity of the RSF by convening representatives from Primary and Supporting Agencies and ensuring that plans and procedures are in place, key staff are trained, and expected resources are available if needed. In the activated state, the Coordinating Agency takes a lead role in defining and directing actions to be taken by the deployed Primary and Supporting Agencies in support of recovery.

The Coordinating Agency is responsible for the following:

- Facilitate communication and collaboration between RSF 5 Primary and Supporting Agencies, as well as other RSFs;
- Coordinate efforts to implement infrastructure systems recovery activities;
- Coordinate development and regular update of an Infrastructure Systems Action Plan to inform the overall Regional Recovery Action Plan;
- Designate regional field coordinators as necessary to support local and tribal recovery activities; and
- Coordinate the transition from REOC response units to RSF 5.

3.2 Preparedness

RSF 5 exists in a state of preparedness at all times. In the preparedness state:

- The Primary Agencies regularly convene to ensure that necessary plans and procedures are in place to ensure prompt action upon activation;
- The Primary Agencies prepare agency-specific plans and procedures and maintain the capabilities to deploy in the roles specified in this document; and
- The Supporting Agencies are engaged by the Coordinating Agency to ensure their preparedness to efficiently and effectively assist when needed.

3.3 Activation

Following a disaster, regional support to emergency response will be managed by the LDRM who will assess the situation and determine whether to activate RSFs.

3.3.1 *Transition from Response*

Upon activation, each RSF will gradually take on roles associated with one or more REOC response unit activated during the response phase:

- The LDRM and Recovery Unit Leader are responsible for agreeing on the timing of transition from response to recovery;
- When the LDRM activates RSF 5, the Coordinating Agency is responsible for ensuring the smooth transition of regional disaster management activities from the following response units:
 - Public Works Unit
 - Damage Assessment Unit
 - Debris Management Unit
 - Transportation Unit
- Primary and Supporting Agencies for each response unit will be responsible for informing the Coordinating Agency of ongoing efforts that need to continue in

the recovery phase and for providing all relevant materials and contact information.

3.4 Activated State

In the activated state:

- The LDRM receives requests from local governments, tribal governments, and impacted communities requiring regional support for Infrastructure Systems;
- The LDRM and the Coordinating Agency will define short-term, intermediate, and long-term recovery goals and objectives for Infrastructure Systems. These goals and objectives will become part of the function's recovery strategy and will take into account the type and impacts of the disaster, as well as the actions taken during emergency response;
- The Coordinating Agency coordinates assignments for Primary and Supporting Agencies as appropriate, checks regularly on the status of requests and provided assistance, and reports progress and issues to the LDRM;
- The Coordinating Agency may be called upon to provide RSF status reports and briefings to the MAC Group as needed;
- Primary and Supporting Agencies deploy capabilities according to identified needs. Deployed teams request additional support as needed; and
- Supporting Agencies provide complementary resources and capabilities, responding as needed to requests from the Coordinating Agency.

3.5 Return to Preparedness

As recovery proceeds, Regional Partner agency activities will gradually shift from special recovery support to normal business. The LDRM, with the support from the Coordinating Agency, will regularly assess whether current Infrastructure Systems support continues to require special coordination under RSF 5. When the LDRM determines that special coordination is no longer required, RSF 5 will revert to the preparedness state.

4 INFRASTRUCTURE SERVICES RECOVERY ACTION PLAN

The LDRM may request that the Coordinating Agency prepare an Infrastructure Services Recovery Action Plan to inform the overarching Regional Recovery Action Plan. This strategy will provide information to guide regional infrastructure services recovery activities and should include the following information:

- Existing data on local and tribal needs for infrastructure services support;
- Priorities for infrastructure services recovery; and
- Recommendations for RSF 5 support.

5 ACTIVITIES BY RECOVERY PHASE

5.1 Preparedness

RSF 5 remains in a state of preparedness at all times through preparedness activities, including disaster planning, engineering, and operations and maintenance of community infrastructure. The following activities should be facilitated by the Coordinating Agency to ensure that the region is prepared to implement infrastructure systems operations effectively and efficiently:

- Pre-disaster recovery planning, including regular review and updating of Coordinating, Primary, and Supporting Agency plans and procedures related to infrastructure systems support to local and tribal governments and impacted communities during disaster recovery:
 - Incentivize development of local recovery plans that describe a transition from response in the following areas:
 - Debris removal;
 - Critical infrastructure protection;
 - Dam safety;
 - Continuity of government;
 - Potable water source protection;
 - Redundant communications;
 - Transportation emergencies;
 - Food supply emergencies;
 - Electrical, natural gas, and telecommunication system outages
 - Wastewater management; and
 - Stormwater management.
 - Facilitate coordination with RSF 1 - Community Planning and Capacity Building to plan for recovery of government operations, emergency services, and other community resources;
 - Facilitate coordination with RSF 2 - Economic Recovery to plan for recovery of impacted businesses;
 - Facilitate coordination with RSF 3 - Health and Social Services to plan for recovery from impacts to healthcare, and behavioral, environmental and public health facilities;
 - Facilitate coordination with RSF 6 - Natural and Cultural Resources to ensure that recovery activities for the natural and built environment are synchronized;
 - Facilitate inter-jurisdictional infrastructure recovery;

- Foster public-private partnerships with infrastructure owners and managers to identify system strengths and vulnerabilities to address recovery challenges;
- Incentivize creative and green technologies for infrastructure resiliency; and
- Identify financing strategies for infrastructure recovery.
- Ensure that the resources and authorities required to implement infrastructure system recovery plans and procedures are available and coordinated within each Primary and Supporting Agency:
 - Facilitate sharing of public and private infrastructure resources and technical expertise;
 - Maintain a list of funding sources, including grant and loan programs to support recovery of infrastructure systems through financing of capital and/or operations costs; and
 - Identify legal authorities for prioritization of critical infrastructure recovery.
- Ensure that mechanisms for public communication are interoperable, redundant, and appropriate for diverse communities to empower individuals and families;
- Provide education on personal recovery from short- to long-term power outages, transportation interruptions, evacuations, potable water contamination, storm water damage, and other infrastructure emergencies; and
- Identify and maintain relevant contact information for RSF 5 representatives in each Primary and Supporting Agency.

5.2 Short-Term Recovery

Short-term recovery for restoration of infrastructure systems will be coordinated through the Regional Emergency Operations Center and response units. As the incident is stabilized, an LDRM may be appointed and may activate RSF 5 to support ongoing infrastructure systems activities.

RSF 5 short-term recovery activities may include the following:

- Work with local governments, tribal governments, and impacted communities to address capacity gaps;
- Develop and distribute infrastructure recovery guidance and procedures;
- Determine critical needs of traffic concerns;
- Determine detour and alternate routes;

- Perform or collect infrastructure damage assessments and develop an approach for evaluating and prioritizing the recovery of infrastructure systems:
 - Facilitate recovery coordination for infrastructure that crosses multiple jurisdictions; and
 - Generate a timeline for infrastructure recovery.
- Facilitate the extension of technical expertise and human resources to communities and private sector owner/operators so that infrastructure systems solutions can be implemented;
- Facilitate requests for, and distribution of, federal funds and other resources for infrastructure recovery; and
- Implement short-term recovery solutions and repairs to maintain community function and identify intermediate solutions.

5.3 Intermediate Recovery

After the incident has been stabilized, recovery support will be fully transitioned from activated response units to the RSF organizational structure.

RSF 5 intermediate recovery activities may include:

- Develop an RSF Recovery Action Plan to establish priorities for RSF activities, updating as required;
- Conduct intermediate recovery support activities, including the following:
 - Re-assess impacts and prioritize recovery efforts;
 - Re-assess infrastructure needs and adapt strategies as changes arise;
 - Identify long-term infrastructure recovery needs and challenges;
 - Identify long-term goals for infrastructure reliance;
 - Provide technological, human, and financial support to initiate long-term infrastructure recovery repairs and solutions;
 - Initiate implementation of infrastructure system improvements to enhance resilience for future disasters;
 - Determine permits and contractors selected for repair of damaged infrastructure;
 - Provide contract referrals for debris removal; and
 - Initiate EMAC and Nevada Intrastate Mutual Aid System.

5.4 Long-Term Recovery

Community recovery activities can potentially extend for more than 18 months, and RSF 5 agencies should be prepared to maintain support of local and tribal recovery efforts for an extended period. These activities may take place in the context of an

activated RSF or be managed through routine department operations as the need for a more structured recovery diminishes.

RSF 5 long-term recovery activities may include the following:

- Continue to update the RSF Recovery Action Plan as the recovery progresses;
- Identify funding sources for long-term infrastructure improvements;
- Identify the development of needed redundant infrastructure systems;
- Develop hazard-specific solutions to infrastructure impacts;
- Continually reassess intermediate recovery activities;
- Transition RSF activities back to responsible departments to manage through their routine operations;
- Continue to monitor local and tribal recovery activities and provide technical assistance as needed; and
- Conduct public outreach activities to educate the public on recovery success stories.

6 COMMUNITY PARTNERS

The following list of organizations has been identified as a partial, non-exclusive list of partners supporting regional recovery efforts in the field of infrastructure systems:

- Nevada Water/Wastewater Agency Response Network (NvWARN)
- American Water Works Association
- Railroads (BNSF, Union Pacific, Amtrak, short lines)
- Airports, ports, and waterway managers
- Pipeline and Hazardous Materials Safety Administration (PHMSA)
- Telecommunication Network Operators' Associations:
- Emergency medical services, hospitals and healthcare coalitions
- American Public Works Association
- League of Nevada Cities
- Nevada Association of Counties
- Public schools and colleges
- Team Rubicon
- Incumbent Utility Operators (investor-owned and consumer-owned)
 - Telecommunications,
 - Energy, and
 - Water/wastewater.

Primary and Supporting Agencies for RSF 5 are responsible for identifying relevant partner organizations in the plans and procedures developed during the preparedness

phase and for having the necessary tools for activating these partnerships upon RSF activation.

7 RSF DEVELOPMENT AND MAINTENANCE

Ongoing development and maintenance of this RSF annex is essential to implementation of the infrastructure systems function. To ensure that preparedness activities are undertaken and sustained, the Coordinating Agency will:

- Assign work groups, as needed, to undertake ownership of their respective RSFs;
- Create a work plan that describes how the RSF will be maintained and implemented;
- Implement preparedness efforts, including recovery planning, review of existing response and mitigation plans, training and exercises, community outreach, partnership building, capacity building, and protocol development that will be undertaken with timelines and assignments of responsibility for implementation; and
- Encourage ownership by agency staff through education on the RSF and creating a mechanism to obtain feedback for its improvement.

APPENDIX A - SUPPORTING PLANS AND PROCEDURES

Other important documents that provide guidance on infrastructure services include:

Regional

- Regional Emergency Operations Plan, 2016
- Washoe County Regional Hazard Mitigation Plan, 2015
- Regional Debris Management Plan, in progress

State of Nevada

- Nevada State Comprehensive Emergency Management Plan, January 2014
 - ESF 1 - Transportation
 - ESF 2 - Telecommunications and Information Technology
 - ESF 3 - Public Works and Engineering
 - ESF 12 - Energy
- State of Nevada Disaster Debris Management Plan, Revised 2009
- State of Nevada Response and Recovery Guide to Emergencies and Disasters for State, Local, and Tribal Governments, Published by the Department of Public Safety, Division of Emergency Management, February 2011

Federal

- Federal Emergency Management Agency, National Disaster Recovery Framework, September 2011
- Federal Emergency Management Agency, Recovery Federal Interagency Operational Plan, Annex E: Infrastructure Systems Recovery Support Function, July 2014.

RSF 6 - NATURAL AND CULTURAL RESOURCES

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RSF 6 Tasked Agencies	
Coordinating Agency	Parks and Open Spaces Department Library System
Primary Agency	Parks and Open Spaces Department Library System Truckee Meadows Flood Project
Supporting Agencies	Community Services Department Roads
State Coordinating Agency	Division of Emergency Management (DEM)
Federal Coordinating Agency	U.S. Department of the Interior
Response Coordination	Public Works Unit Damage Assessment Unit Debris Management Unit Fire/Rescue Unit

1 PURPOSE AND SCOPE

1.1 Purpose

Recovery Support Function (RSF) 6, Natural and Cultural Resources, and the five other RSFs are essential parts of the *Washoe County Regional Disaster Recovery Framework*. This document presents the mission of RSF 6; its objectives, key activities and areas of support; and the roles and capabilities of partners. Detailed operational and tactical guidance for Regional Partner personnel is provided in agency-specific guidance and planning documents.

The mission of RSF 6 is to integrate Regional Partner assets and capabilities to help local governments, tribal governments, and impacted communities address long-term environmental and cultural resource recovery needs after large-scale and catastrophic incidents.

1.2 Scope

RSF 6 is designed to provide guidance to Regional Partner departments in aiding local and tribal partners in preserving, protecting, conserving, rehabilitating, and restoring natural and cultural resources. The following activities were encompassed within the scope of RSF 6:

- Assist in the identification of natural and cultural resources through development of inventories;
- Assess natural and cultural resources for vulnerability to hazards and potential impacts to the community that their damage or loss would cause;
- Implement recovery and restoration support for natural and cultural resources; and
- Facilitate ongoing management of natural and cultural resources, including maintenance of natural systems in a state of health and resilience, and establishment of protocols and resources for maintaining temporary and permanent safekeeping of cultural resources before, during, and after emergencies.

2 ASSUMPTIONS

The following assumptions guide RSF 6 activities in pursuit of its mission:

- Local and tribal governments are the primary decision makers driving community recovery;
- A systematic approach to recovery increases the likelihood of successful recovery, project implementation, and fiscal support;
- Considerations related to the management and protection of natural and cultural resources, community sustainability, and compliance with environmental planning and historic preservation requirements can be incorporated into long-term recovery efforts;
- Staff should be familiar with state and federal environmental regulations, including the National Environmental Policy Act (NEPA) and how the Federal Emergency Management Agency region implements these requirements. Early coordination by NEPA experts will enable an efficient documentation process and avoid unanticipated delays in agency coordination or project design changes, to minimize environmental effects;
- NEPA and Endangered Species Act (ESA) compliance can occur on parallel tracks, but ESA consultation must be executed prior to completion of the NEPA process. It essential to identify early on any ESA issues that may result from recovery-related actions and to coordinate with the appropriate federal agencies. ESA issues will vary greatly among regions and states;
- Staff should also understand best management practices as they relate to recovery projects that could have environmental impacts. More importantly, they must convey to local stakeholders the importance of incorporating these practices as projects are developed;
- Specialists who understand NEPA compliance for cultural/historical resources do not necessarily know the Secretary of the Interior Standards (e.g., for

rehabilitation), nor do they always know about preservation programs and funding sources. This is because NEPA is focused on environmental compliance. Bringing in specialists with specific preservation expertise will help ensure preservation standards are met;

- Collections of cultural and historic significance may be damaged in disasters. These holdings—including irreplaceable books, documents, photographs, audio-visual records, art, and artifacts—may represent a community's heritage and provide a focus for tourism. Their preservation is critical to both economic recovery and community resilience; and
- Museum, library, and other cultural institution collections are often dependent on grants and other funding and are not always well prepared for disaster (i.e., although they should, they do not always have emergency plans in place).

3 CONCEPT OF OPERATIONS

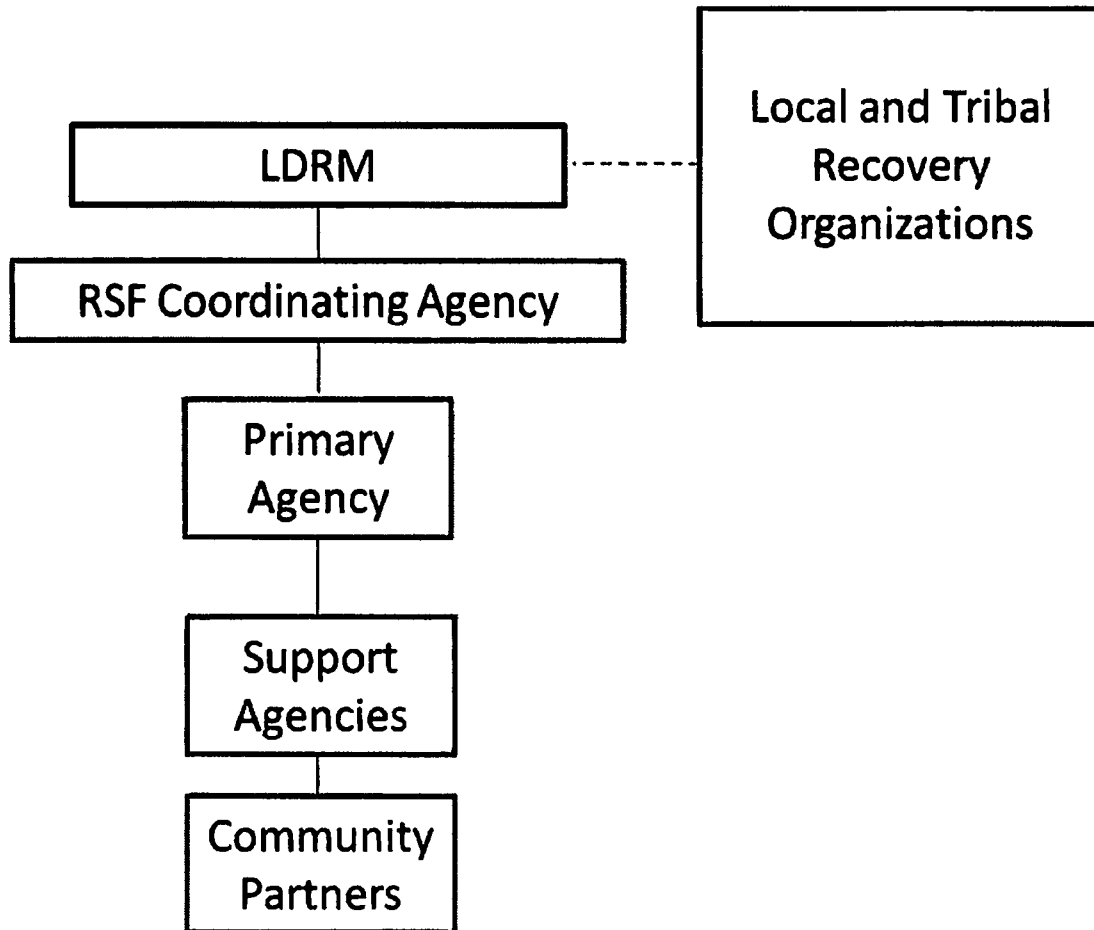
3.1 Organization

Regional recovery efforts are directed through the Regional Disaster Recovery Framework Basic Plan, which outlines roles and responsibilities and establishes a regional recovery organization, among other things.

RSFs are the organizing principle behind the region's support of local and tribal recovery organizations.

RSFs mobilize the authorities and expertise of multiple Regional Partner agencies under a Coordinating Agency that ensures delivery of regional support. Each RSF includes Primary and Supporting Agencies, designated as such based on their frequency and degree of involvement in the RSF's scope of operations. Each RSF's Coordinating Agency reports to the Local Disaster Recover Manager (LDRM) and channels requests for other RSFs and/or external support through the LDRM. Figure 1 below illustrates the organizational structure of RSF 6.

Figure 1 RSF Organizational Structure



3.1.1 Coordinating Agency

The Coordinating Agency is responsible for the following:

- Facilitate communication and collaboration between RSF 6 Primary and Supporting Agencies, as well as other RSFs;
- Coordinate efforts to implement natural and cultural resources recovery activities;
- Coordinate development and regular update of a Natural and Cultural Resources Recovery Action Plan to inform the overall Regional Recovery Action Plan;
- Designate regional field coordinators as necessary to support local and tribal recovery activities; and
- Coordinate the transition from REOC response units to RSF 6.

3.2 Preparedness

RSF 6 exists in a state of preparedness at all times. In the preparedness state:

- The Coordinating Agency regularly convenes representatives from Primary and Supporting Agencies to ensure that necessary plans and procedures are in place to ensure prompt action upon activation;
- Primary Agencies prepare agency-specific plans and procedures and maintain the capabilities to deploy in the roles specified in this document; and
- Supporting Agencies are engaged by the Coordinating and Primary Agencies to ensure their preparedness to efficiently and effectively assist when needed.

3.3 Activation

Following a disaster, regional support of emergency response will be managed by the LDRM who will assess the situation and determine whether to activate RSFs.

3.3.1 Transition from Response

Upon activation, each RSF will gradually take on roles associated with one or more REOC response units activated during the response phase:

- The LDRM and Recovery Unit Leader are responsible for agreeing on the timing of transition from response to recovery;
- When the LDRM activates RSF 6, the Coordinating Agency is responsible for ensuring the smooth transition of regional disaster management activities from the following response units:
 - Public Works Unit
 - Damage Assessment Unit
 - Debris Management Unit
 - Fire/Rescue Unit (Hazardous Materials)
- Primary Agencies for each response unit will be responsible for informing the Coordinating Agency of ongoing efforts that need to continue in the recovery phase and for providing all relevant materials and contact information.

3.4 Activated State

In the activated state:

- The LDRM receives requests from local governments, tribal governments, and impacted communities requiring regional support for natural and cultural resources;
- The LDRM and Coordinating Agency define short-term, intermediate, and long-term recovery goals and objectives for natural and cultural resources. These

- goals and objectives will become part of the function's recovery strategy and will take into account the type and impacts of the disaster, as well as the actions taken during emergency response;
- The Coordinating Agency coordinates assignments for Primary and Supporting Agencies as appropriate, checks regularly on the status of requests and provided assistance, and reports progress and issues to the LDRM;
 - The Coordinating Agency may be called upon to provide RSF status reports and briefings to the MAC Group as needed;
 - Primary Agencies deploy capabilities according to identified needs. Deployed teams request additional support as needed; and
 - Supporting Agencies provide complementary resources and capabilities, responding as needed to requests from Coordinating and Primary Agencies.

3.5 Return to Preparedness

As recovery proceeds, Regional Partner agency activities will gradually shift from special recovery support to normal business. The LDRM, with the support of the Coordinating Agency, will regularly assess whether current natural and cultural resources support continues to require special coordination under RSF 6. When the LDRM determines that special coordination is no longer required, RSF 6 will revert to the preparedness state.

4 RSF ACTION PLAN

The LDRM may request RSF 6, via the Coordinating Agency to prepare a Natural and Cultural Resources Recovery Action Plan to inform the overarching Regional Recovery Action Plan. This strategy will provide information to guide regional natural and cultural resources recovery activities and should include the following information:

- Existing data on natural and cultural resources impacts;
- Priorities for natural and cultural resources recovery; and
- Recommendations for RSF 6 support.

Objectives of the Natural and Cultural Resources Recovery Action Plan may include the following:

Natural Resources

- Integrate environmental staff knowledgeable in natural resources and environmental regulatory requirements early in a disaster recovery planning process to address potential environmental or regulatory issues;
- Develop pre-existing (pre-disaster) agreements between natural and cultural response agencies to facilitate post-disaster recovery actions;

- Provide assistance to local and tribal jurisdictions regarding the applicability of environmentally friendly design to guide recovery projects; and
- Integrate sustainable planning elements to provide a multi-disciplined effort that includes consideration of long-term environmental effects on natural resources, integration of open space, sensitive resources, and community well-being.

Cultural Resources

- Pre-identify funding sources for cultural resource needs (e.g., artifact conservation, building rehabilitation, document recovery, archaeological site preservation);
- Provide post-disaster assistance in completing surveys and historic designations to prevent inappropriate repairs affecting integrity of place or district;
- Coordinate with other RSFs to provide information on cultural resources; and
- Protect cultural resources to the highest level, as the value of many cannot be replaced and is intangible.

5 ACTIVITIES BY RECOVERY PHASE

5.1 Preparedness

RSF 6 remains in a state of preparedness at all times through preparedness activities, including (1) revisions and updates to plans that support or direct response and mitigation efforts; (2) community outreach and education; and (3) coordination of the whole community, including local, tribal, and territorial partners; non-governmental organizations such as faith-based and nonprofit groups and private sector industry; and individuals, families, and communities. The following activities should be facilitated by the Coordinating Agency to ensure that the region is prepared to implement recovery operations effectively and efficiently:

- Ensure continuing support for the maintenance of natural resources in a state of health, and cultural resources in a state of protection, with plans and resources for temporary or permanent relocation:
 - Identify critical natural resources (i.e., floodplains, coastal barriers, potable water sources) that help reduce hazard risks; and
 - Establish measures for protection of cultural resources that can be implemented immediately and indefinitely.
- Pre-disaster recovery planning, including regular review and updating of Coordinating, Primary, and Supporting Agency plans and procedures related to natural and cultural resources support to local and tribal governments and impacted communities during disaster recovery:

- Ensure that proposed response and recovery activities are consistent with environmental management and historic preservation regulations; and
- Provide resources to help guardians of natural and cultural resources develop emergency management plans.
- Ensure that the resources and authorities required to implement natural and cultural resources plans and procedures are available and coordinated within each Primary and Supporting Agency:
 - Develop inventories of incentives and programs that support the preservation, protection, conservation, rehabilitation, recovery, and restoration of natural and cultural resources during recovery;
 - Establish priority actions for response and recovery of natural resources that contribute to hazard mitigation;
 - Establish priority actions for response and recovery of natural and cultural resources based on community value; and
 - Support training of response and recovery workers on techniques for managing cultural resources.
- Ensure that mechanisms for public communication are interoperable, redundant, and appropriate for diverse communities to empower individuals and families; and
- Identify and maintain relevant contact information for RSF 6 representatives in each Primary and Supporting Agency.

5.2 Short-Term Recovery

Short-term recovery for natural and cultural resources will be coordinated through the Regional Emergency Operations Center and response units. As the incident is stabilized, an LDRM may be appointed and may activate RSF 6 to support ongoing natural and cultural resources activities.

RSF 6 short-term recovery activities may include:

- Work with local governments, tribal governments, impacted communities, and RSF 1 to assess and address capacity gaps for the protection and recovery of natural and cultural resources;
- Protect waterways from contamination and erosion;
- Facilitate coordination with RSF 5 - Infrastructure Systems to help ensure that natural resource recovery activities are synchronized;
- Work with local governments, tribal governments, and impacted communities and RSF 1 to assess and address capacity gaps for the protection and recovery of cultural resources;

- Assist with identification of, and provide, technical expertise required for the recovery and restoration of cultural resources;
- Facilitate the extension of expertise to communities so that considerations related to the management and protection of natural and cultural resources, as well as compliance with environmental planning and historic preservation requirements, are incorporated into intermediate and long-term community recovery efforts;
- Engage and support the community in forming a task force to address hazardous material issues with a whole-community approach; and
- Develop an approach and timeline for evaluating and prioritizing the recovery of cultural and/or historic properties and assets.

5.3 Intermediate Recovery

After the incident has been stabilized, recovery support will be fully transitioned from activated response units to the RSF organizational structure.

RSF 6 intermediate recovery activities may include the following:

- Develop an RSF-specific Recovery Action Plan to establish priorities for RSF activities, updating as required;
- Conduct intermediate recovery support activities, including the following:
 - Assist local and tribal partners in developing environmental rehabilitation plans;
 - Conduct post-disaster environmental monitoring activities;
 - Develop and implement strategies for remediation of disaster-related contamination by hazardous materials;
 - Monitor compliance with state and federal environmental regulations;
 - Conduct education and outreach efforts related to natural and cultural resource recovery activities; and
 - Identify locations for long-term protection of cultural resources that can be relocated.

5.4 Long-Term Recovery

Natural and cultural resource recovery activities can potentially extend for more than 18 months, and RSF 6 agencies should be prepared to maintain support of local and tribal recovery efforts for an extended period. These activities may take place in the context of an activated RSF or be managed through routine department operations as the need for a more structured recovery diminishes.

RSF 6 long-term recovery activities may include the following:

- Identify practices to ensure sustainable access to water resources;
- Develop policies and procedures to protect natural and cultural resources from future disasters;
- Continue to update the RSF Recovery Action Plan as the recovery progresses;
- Continually reassess intermediate recovery activities;
- Transition RSF activities back to responsible departments to manage through their routine operations;
- Continue to monitor local and tribal recovery activities and provide technical assistance as needed;
- Conduct public outreach activities to educate the public on recovery success stories, and lessons learned; and
- Document lessons learned and update mitigation, response, and recovery plans and procedures.

6 COMMUNITY PARTNERS

The following list of organizations has been identified as a partial, non-exclusive list of partners supporting the region's recovery efforts in the field of natural and cultural resources:

- City, County, and Tribal Planning, Cultural, and Environmental Resource Departments
- Soil and Water Conservation Districts
- Watershed Councils
- Advocacy Groups
- Team Rubicon

Primary and Supporting Agencies for RSF 6 are responsible for identifying relevant partner organizations in the plans and procedures developed during the preparedness phase, and for having the necessary tools for activating these partnerships upon RSF activation.

7 RSF DEVELOPMENT AND MAINTENANCE

Ongoing development and maintenance of this RSF annex is essential to implementation of the economic recovery function. To ensure that preparedness activities are undertaken and sustained, the Coordinating Agency will:

- Assign work groups as needed to undertake ownership of their respective RSFs.
- Create a work plan that describes how the RSF will be maintained and implemented;

- Implement preparedness efforts, including recovery planning, review of existing response and mitigation plans, training and exercises, community outreach, partnership building, capacity building, and protocol development that will be undertaken with timelines and assignments of responsibility for implementation; and
- Encourage ownership by agency staff through education on the RSF and creating a mechanism to obtain feedback for its improvement.

APPENDIX A - SUPPORTING PLANS AND PROCEDURES

Other important documents that provide guidance on community planning and capacity building include:

Regional

- Regional Emergency Operations Plan, 2016
- Washoe County Regional Hazard Mitigation Plan, 2015

State of Nevada

- Nevada State Comprehensive Emergency Management Plan
 - ESF 3 - Public Works and Engineering
 - ESF 10 - Oil Hazardous Materials Response
 - ESF 11 - Agriculture and Natural Resources
 - ESF 12 - Energy
- State of Nevada Disaster Debris Management Plan, Revised 2009
- State of Nevada Response and Recovery Guide to Emergencies and Disasters for State, Local, and Tribal Governments, Published by the Department of Public Safety, Division of Emergency Management, February 2011

Federal

- Federal Emergency Management Agency, National Disaster Recovery Framework, September 2011
- Federal Emergency Management Agency, Recovery Federal Interagency Operational Plan, Annex F: Natural and Cultural Resources Recovery Support Function, July 2014
- Disaster Recovery Assistance Guide

Washoe County, Nevada
Regional Debris Management Plan



January 2017

Prepared for:

Washoe County Emergency Management and Homeland Security Program
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Reno, NV 89512

Prepared by:





Preface

The Washoe County Regional Debris Management Plan is part of the Region's comprehensive suite of emergency plans that provide a framework through which the Region prepares for, responds to, recovers from, and mitigates the impacts of disasters that could affect the community. In particular, this plan guides the Region in coordination of clearance, removal, and disposal of disaster debris.

Key elements of this plan include:

- Description of debris management planning authorities and links to other planning efforts.
- Debris planning scenarios to guide the Region in its planning efforts.
- Assignment of debris management roles and responsibilities to key Regional Partner agencies and departments.
- A comprehensive operational approach that addresses all phases of debris operations (readiness, clearance, removal, recovery).
- Identification of a Regional Debris Manager and establishment of a Regional Debris Management Team to coordinate debris management activities.
- Guidance and procedures to aid the Region in ensuring that eligible debris management activities can be reimbursed.
- Procedures for ongoing plan development and implementation.

This plan complements the Washoe County Regional Emergency Operations Plan, Washoe County Regional Disaster Recovery Framework, State of Nevada Disaster Debris Management Plan, and National Response Framework; specifically, Emergency Support Function 3 – Public Works and Engineering. The debris management organization presented within this plan is consistent with the National Incident Management System, including use of the Incident Command System, and is compliant with state and federal debris management planning requirements.

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Plan Administration

The Regional Partners will coordinate review and revision of the Regional Debris Management Plan on an annual basis in coordination with members of the Region's Debris Management Team. This plan will be formally approved by the Regional Partner Emergency Managers every five years in conjunction with the Regional Emergency Operations Plan. Plan revisions may reflect changes in organization or capability, new data on hazards and impacts, emerging best practices in debris management, or lessons learned from exercises or actual response and recovery activities. Changes to the appendices, and non-substantive changes to the Basic Plan, may be made by the Washoe County Emergency Management and Homeland Security Program without formal Regional Partner approval.

Record of Plan Changes

All updates and revisions to this plan will be tracked and recorded in the following table. This process will ensure that the most recent version of this plan is disseminated and implemented by personnel.

Date	Change No.	Department	Summary of Change
2010	2010-000		Original Release
2016	2016-001		Global Restructuring



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Plan Administration

Plan Distribution List

Copies of the Regional Debris Management Plan will be provided to the following jurisdictions, agencies, and persons electronically, unless otherwise indicated. Updates will be provided electronically, when available. Recipients will be responsible for updating their organization-specific debris management plans and procedures as appropriate. The Washoe County Emergency Management and Homeland Security Program is ultimately responsible for disseminating all plan updates. Copies of this plan will also be maintained at the Regional Emergency Operations Center.

Department/Agency/Organization	Title
All Regional Partners	Emergency Management Finance/Procurement Departments Legal Counsel
Washoe County	Roads Department Washoe County Health District, Waste Management Program, Incline Village General Improvement District
City of Reno	Public Works Department Environmental Control Services
City of Sparks	Community Services Department Environmental Control Services
Reno-Sparks Indian Colony	Public Works Department
Pyramid Lake Paiute Tribe	Public Works Department



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1 Introduction

Section 1 establishes the framework within which this Regional Debris Management Plan exists and how it aligns with and supports existing plans. Additionally, this section outlines federal, state, and regional debris management authorities.

1.1 PURPOSE AND SCOPE

The guiding emergency planning document in the region, the Regional Emergency Operations Plan (REOP), supports the emergency operations of multiple jurisdictions within the Northern Nevada region. These jurisdictions include Washoe County, City of Reno, City of Sparks, Pyramid Lake Paiute Tribe, Reno-Sparks Indian Colony, University of Nevada-Reno, and the Washoe County School District (Regional Partners). This Regional Debris Management Plan is also designed to support the concept that disasters do not follow political or jurisdictional boundaries. A debris-generating event that impacts one Regional Partner is likely to impact the others as well.

The purpose of this plan is to provide for coordination of efforts in the clearance, removal, disposal, and monitoring of debris following a major emergency or disaster impacting one or more Regional Partners. It works in conjunction with the REOP and contains guidance regarding organization, responsibilities, documentation, contracting, temporary debris storage and reduction (TDSR) sites, and contracts related to debris management.

This plan covers the response to and recovery from all debris-generating events within the region, as well as additional tasks required to maintain regional disaster debris management readiness, including training, exercises, and plan maintenance. This plan is composed of the Basic Plan and supporting appendices.

The primary users of this plan include those active in emergency management, public works, and waste management activities. This plan is meant to guide coordination of debris operations but is not intended to replace department-specific standard operating procedures that support plan implementation.

1.2 DEBRIS AUTHORITIES

1.2.1 Federal

Under the authority of Homeland Security Presidential Directive-5, disaster debris operations are guided by the National Response Framework (NRF), Emergency Response Function (ESF) 3 – Public Works and Engineering Annex. The Federal Emergency Management Agency (FEMA), United States Army Corps of Engineers (USACE), and United States Environmental Protection Agency (EPA) have developed several guides for local and state jurisdictions to develop debris management plans. These guides are available at the following websites:

- National Disaster Recovery Framework: [https://www.fema.gov/media-library-data/1466014998123-4bec8550930f774269e0c5968b120ba2/National Disaster Recovery Framework2nd.pdf](https://www.fema.gov/media-library-data/1466014998123-4bec8550930f774269e0c5968b120ba2/National%20Disaster%20Recovery%20Framework2nd.pdf) ;
- Public Assistance Debris Management Guide FEMA-325: <http://www.fema.gov/pdf/government/grant/pa/demagde.pdf>;



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- U.S. Army Corps of Engineers Debris Management Guidance: <http://www.usace.army.mil/Missions/Emergency-Operations/National-Response-Framework/Debris-Management/>; and
- Planning for Natural Disaster Debris: <https://www.epa.gov/sites/production/files/2015-08/documents/pnidd.pdf>.

In addition, FEMA has established disaster assistance policies for eligibility and reimbursement purposes in the event of a presidentially declared disaster, available online at:

[https://www.fema.gov/media-library-data/1456167739485-75a028890345c6921d8d6ae473fbc8b3/PA Program and Policy Guide 2-21-2016 Fixes.pdf](https://www.fema.gov/media-library-data/1456167739485-75a028890345c6921d8d6ae473fbc8b3/PA%20Program%20and%20Policy%20Guide%202-21-2016%20Fixes.pdf).

1.2.2 State of Nevada

The State of Nevada will assist local governments in providing disaster debris management in compliance with state and federal laws.

1.2.2.1 Disaster Debris Management Authority

Specific to disaster debris operations, state authority provides the following:

State of Nevada – Disaster Debris Management Authorities

- Nevada Revised Statutes (NRS) 353 – Grants Administration of Disaster Assistance Program
- NRS 444.440-444.645, Nevada Administrative Code (NAC) 444.570-444.7499 – Disposal of Solid Waste
- NRS 444A.010-444A.110, NAC 444A.005-444A.470 – Recycling
- NRS 459.400-459.600, NAC 444.842-444.8482 – Facilities for Management of Hazardous Waste
- NRS 459.400-459.600, NAC 444.850-444.8746 – Disposal of Hazardous Waste
- NRS 459.400-459.600, NAC 444.8752-444.8788 – Program for Reduction of Hazardous or Industrial Waste
- NRS 459.400-459.600, NAC 444.965-444.976 – Disposal of Asbestos

1.2.2.2 Solid Waste Management Authority

Solid waste management in the State of Nevada is governed by NRS 444.440, Collection and Disposal of Solid Waste, and provides enforcement authority to the Nevada Division of Environmental Protection – Bureau of Waste Management. Few procedures in NRS 444.440 specifically address disaster debris. However, general authority for public health and safety, administration, hazardous wastes, and recovery (recycling) will inform disaster debris management, including lower costs of final disposal. General powers and duties of Nevada Division of Environmental Protection – Bureau of Waste Management include:

- Oversee and enforce permit and compliance programs to ensure the safe management of solid and hazardous waste, and promote waste reduction, re-use, and recycling.
- Enter into agreements with the federal government, state agencies, local government units, and private persons to carry out NRS Chapters 444.440 through 444.645



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(Solid Waste); 444A.0.0 through 444A.110 (Recycling); 459.400 through 459.600 (Hazardous Waste); 618.775 (Asbestos).

See <http://ndep.nv.gov/bwm/solid.htm> for more information on the state Solid Waste Management Branch.

1.2.3 Regional

This plan addresses debris operations for the following Regional Partners: Washoe County, City of Reno, City of Sparks, Pyramid Lake Paiute Tribe, Reno-Sparks Indian Colony. It also supports debris operations for identified Regional Partners within the REOP: University of Nevada-Reno and Washoe County School District.

1.2.3.1 Emergency Operations

The primary authority for conducting emergency operations is based on jurisdiction-specific codes and resolutions for each Regional Partner. Actions authorized under these codes and resolutions are guided by the REOP.

1.2.3.2 Solid Waste Management

Solid Waste Management activities are managed by Washoe County Waste Management Division. The primary authority for Solid Waste Management in Washoe County is the Washoe County Health District. Regulations pertaining to the Solid Waste Management Plan can be found at: <https://www.washoecounty.us/health/files/regulations/ehs/solid-waste-regs-2011-10-27.pdf>. Per the Solid Waste Management Plan and franchise agreements, solid waste garbage services in Washoe County for both residential and commercial customers is franchised to Waste Management. There are currently a number of haulers that serve the region that are authorized to transport waste not classified as garbage.

See Section 6.5, *Existing Solid Waste Collection Companies*, for a comprehensive list of available haulers within the region and the types of debris they specialize in hauling.

See appendix b, *authorities*, for references to solid waste and emergency management general authorities for regional partners.

1.3 MUTUAL AID AGREEMENTS

Mutual aid and assistance agreements provide a mechanism to acquire emergency assistance quickly in the form of materials, equipment, personnel, and other relevant services. These agreements are established prior to an incident and provide the following types of debris management agreements:

- **Memorandum of Understanding.** Identifies mutual expectations for two or more jurisdictions to collaboratively address debris management without exchange of funds.
- **Mutual Aid Agreement.** A written agreement to provide reciprocal debris management assistance.
 - **Nevada Intrastate Mutual Aid System (NIMAS).** Established through NRS 414A, NIMAS coordinates the provision of mutual aid among jurisdictions



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within Nevada during the response to and recovery from an emergency or disaster.

- **Inter-Local Agreement.** A written agreement that allows local jurisdictions to receive or provide facilities and services from other jurisdictions in order to meet the debris management needs of an incident.

See Appendix D, Debris Contacts, Contracts, and Agreements, for a list of mutual aid agreements related to disaster debris operations to which one or more Regional Partners are a signatory.

1.4 RELATIONSHIP TO OTHER PLANS

1.4.1 Federal

The NRF is a guide for the use of state and federal governments when conducting all-hazards responses. The NRF is built on a scalable, flexible, and adaptable coordination structure to align key roles and responsibilities across the country. The NRF describes specific authorities and best practices for managing incidents that range from serious, but purely local, incidents to large-scale terrorist attacks or catastrophic natural disasters.

This plan complements the NRF's ESF 3 – Public Works and Engineering and ESF 10 – Oil and Hazardous Materials Response annexes by providing for coordination of disaster debris operations through all levels of government using a National Incident Management System (NIMS) organizational structure.

1.4.2 State of Nevada

Emergency operations in Nevada are guided by the State of Nevada Comprehensive Emergency Management Plan (SCEMP) and State of Nevada Response and Recovery Guide to Emergency and Disasters for State, Local and Tribal Governments. The State of Nevada has developed ESF annexes that support disaster debris operations, including ESF 3 – Public Works and Engineering. Additionally, the State of Nevada, led by the Division of Emergency Management (DEM), has developed a State-level Disaster Debris Management Plan to guide State of Nevada disaster debris operations and support to local jurisdictions.

1.4.3 Regional Plans

- **Regional Emergency Operations Plan, 2016:** The REOP is an integrated operational plan based in NIMS. The plan follows an all-hazards approach and is to be utilized following any incident. It outlines a concept for emergency operations, assigns roles and responsibilities, and prescribes procedures for establishing and managing the Regional Emergency Operations Center (REOC).
- **Washoe County Regional Disaster Recovery Framework, 2016:** This framework provides Regional Partners with a structure within which to effectively support the region's recovery from a disaster. The framework establishes a recovery organization, assigns roles and responsibilities, identifies points of coordination and support with regional, state, and federal governments, and provides a transition from response to recovery operations.
- **Washoe County Regional Hazard Mitigation Plan (RHMP), 2015:** The RHMP evaluates the region's risks to various hazards, assesses local capabilities, and



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identifies important steps to reduce associated risks. The RHMP identifies specific mitigation goals, objectives, and actions that are tailored to specific Regional Partners and specific locations and functions.

- **Washoe County Volunteer Management Plan, 2016:** Volunteer management is of paramount importance during all phases of emergency management, and volunteer and community groups can provide specialized services related to debris operations. The Volunteer Management Plan establishes an organizational structure and process by which Washoe County can access and manage volunteers and service program resources.
- **Solid Waste Management Plan of Washoe County, 2016:** The Solid Waste Management Plan was developed in accordance with NRS 444.570 to develop a state-wide solid waste management plan and strategy and must be updated every five years. It contains descriptions of current solid waste trends and other findings and proposes recommendations to alleviate issues pertaining to these findings. This Regional Debris Management Plan is aligned with the Solid Waste Management Plan to ensure effective coordination.
- **City of Sparks Debris Management Plan, 2016:** The City of Sparks Debris Management Plan provides a framework for City government and other entities to clear and remove debris generated during a public emergency within the city limits of the City of Sparks. This Regional Debris Management Plan is aligned with the City of Sparks Debris Management Plan to ensure effective coordination.
- **City of Reno Snow and Ice Control Plan, 2015-2016:** The City of Reno Snow and Ice Control Plan establishes procedures for Public Works Department staff to efficiently conduct snow and ice control operations. This Regional Debris Management Plan is aligned with the City of Reno Snow and Ice Control Plan to ensure effective coordination.

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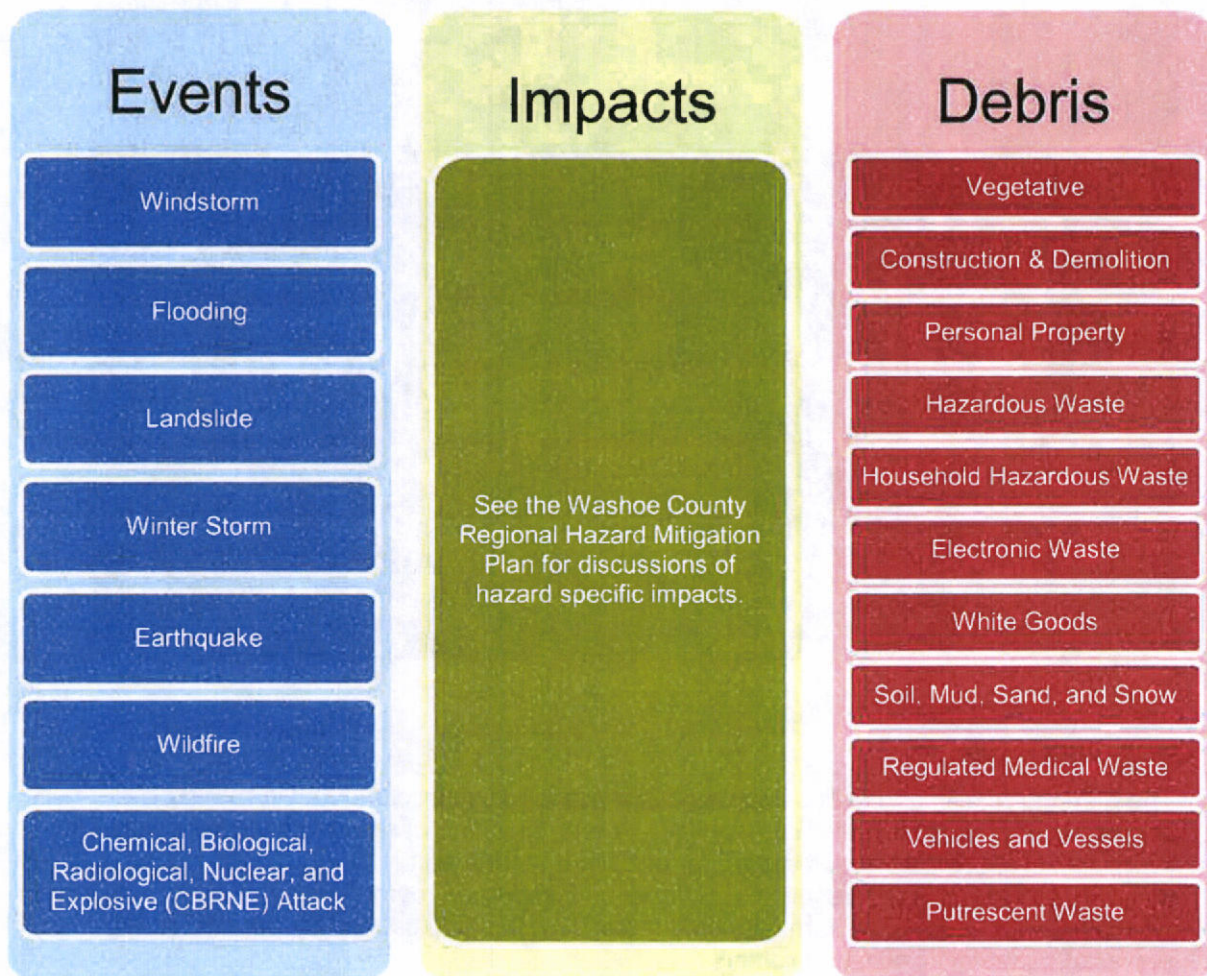
2 Situation and Planning Assumptions

Section 2 builds on the scope discussion in Section 1 by profiling Washoe County's risks to debris-generating events, identifies types of debris possibly generated, provides a snapshot of current debris estimation and forecasting, and describes the assumptions underlying this plan.

2.1 DEBRIS-GENERATING EVENTS

Most disasters can be classified as debris-generating events. Debris management activities resulting from most disasters will be coordinated by the REOC in accordance with the REOP and supporting plans and procedures, including activation of agreements and contracts.

Figure 2-1 Debris-Generating Events, Impacts, and Debris





2.1.1 Windstorm

Windstorms can cause a variety of damage, ranging from property to infrastructure to agricultural outputs. The National Weather Service defines a windstorm as gusts 60 miles per hour and higher. Windstorms can generate significant amounts of woody debris such as broken limbs and branches, as well as utility lines, wires, poles/towers, and building debris from damaged roofs and structures. The National Oceanic and Atmospheric Administration National Climatic Data Center (NCDC) recorded 152 days of high winds from 2000 to 2015, generating estimated damages of \$7.88 million within Washoe County.



Picture Credit: https://pixabay.com/p-843732/?no_redirect No attribution required.

2.1.2 Flooding

The damage resulting from flood events can be caused by structural and infrastructural inundation of flood waters and high-velocity waters. Flooding of streams and rivers within the region generally results from large winter or severe storms and routinely inundates the Truckee River. These storms often result in simultaneous flooding on many rivers and streams in locally affected areas. In addition, damage could result from flooding caused by clogged or overwhelmed storm drainage systems.

Flooding causes damage to structures and personal belongings and can generate large volumes of downed vegetation, mud and soil, household debris (e.g., appliances, furniture, rugs, carpet and padding, and household hazardous waste), sandbags, plastic sheeting, vehicles, and construction and demolition debris. Landslides are often associated with flooding and result in debris consisting of soil, gravel, rock, and building debris from damaged structures. The



NCDC has records of 23 flooding events in the region from 1950 to 2014. While estimates for many of these floods were not recorded, the 1997 New Year's flood generated estimated damages of \$6 million.

2.1.3 Landslide

Landslides are caused by slope instability that may be triggered by ground shaking associated with earthquakes or inundation associated with flood events. Areas prone to landslides are associated with mountainous and hilly areas and river and stream drainages within the region. Landslides can cause damage to structures and generate substantial debris. Debris may include inert environmental debris such as soil, gravel, rock, and woody debris, as well as construction/demolition debris that may be contaminated by wastewater, petroleum, or other household hazardous wastes. Historically, specific areas susceptible to landslides include the Sierra Nevada Mountains foothills, the Virginia Mountains, the Pah Rah Range, and the Carson Range of the Sierra Nevada Mountains.

2.1.4 Winter Storm

Winter storms can bring heavy rain or snow, high winds, and ice storms. In the region, many of these storms begin with cyclonic weather systems in the North Pacific Ocean, causing massive low-pressure storm systems to sweep over the western United States. Winter storms can generate significant amounts of woody debris, such as broken limbs and branches, as well as downed utility lines, wires, poles/towers, and building debris from damaged roofs and structures. The NCDC has recorded 167 days of winter storm events in the region from 1950 to 2014. Heavy snow events have generated estimated damages of \$80,000.

2.1.5 Earthquake

The region has a history of recorded earthquakes of magnitude 5 or higher. These types of earthquakes have the potential to generate large amounts of debris and damage unreinforced structures and infrastructure. Depending on their strength, earthquakes can cause damage to structures and personal belongings, landslides, and liquefaction. From 1868 to 2008, 17 earthquakes of magnitude 5 or higher have been recorded in the region, the largest of which was a magnitude 6.7 earthquake in 1869.



Picture Credit: Damage in the historic district of downtown Wells, Nevada, as a 6.0 earthquake at 6:16 am PST today. (Tom Smart, Deseret Morning News)



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Section 2: Situation and Planning Assumptions

2.1.6 Wildland Fire

Wildland fire is an ever-present risk in the region. Fire spread and intensity is based on fuel presence, the size and type of fuel present, and the arrangement of these fuels. Additionally, topography and weather also play a role in the extent of wildfire damage. Wildland fire generally creates debris in the form of vegetation. However, in the wildland-urban interface, homes and personal property can also be at risk of being damaged and destroyed. There were a total of 84 wildland fire events from 2000 to 2014, 30 of which burned 1,000 acres or more.

2.1.7 Chemical, Biological, Radiological, Nuclear, Explosive Incident

A chemical, biological, radiological, nuclear, explosive (CBRNE) attack or accident may occur at any time. A CBRNE incident would likely result in a large amount of debris within a single localized area. Debris would likely contain various amounts of hazardous waste, including contaminated soil, water, and construction/demolition debris, which would require personal protective equipment for waste handlers and special disposal instructions. Debris from a CBRNE incident may also contain large amounts of human remains and would require coordination with mass casualty operations.

2.2 TYPES OF DEBRIS

Quantity and type of debris generated from an event is a direct result of the location and type of event, in addition to its duration and intensity. Table 2-1 provides a partial list of debris that may be generated in the region. When conducting planning activities, the region should consider any unique types of debris that are not included but may occur in the impacted area.

Table 2-1 Summary of Types of Debris by Event Type

Type of Disaster	Typical Debris Streams											
	Vegetative	Construction & Demolition	Personal Property	Hazardous Waste	Household Hazardous Waste	Electronic Waste	White Goods	Brown Goods	Soil, Mud, Sand, and Snow	Regulated Medical Waste	Vehicles and Vessels	Putrescent
Flooding	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
Windstorm	✓	✓	✓	✓							✓	✓
Landslide	✓	✓	✓						✓		✓	
Winter Storm	✓				✓				✓			✓
Earthquake		✓	✓		✓		✓		✓	✓		✓
Wildland Fire	✓		✓		✓		✓		✓			
Chemical, Biological, Radiological, Nuclear, Explosive		✓		✓		✓		✓				✓

See Appendix I, Debris Types and Strategies for Removal, for more information on types of debris.



2.3 DEBRIS FORECASTING

Debris forecasting is a pre-disaster activity to attempt to understand the types and volumes of debris to be generated by a disaster. Debris forecasting generally occurs via following methods:

- **Historical debris event analysis:** Identifies the types and volumes of debris based on past incidents in the region.
- **Community-based sampling:** Identifies the types of debris present within the region and determines scenarios that are likely to generate debris in different sub-sets of the geography (urban/suburban/rural).
- **Computer predictive software:** Utilizes geographic information system (GIS) data to simulate disasters impacting the region. This method was used during this project's planning process to determine debris generated by an earthquake.

Determining the planning significance of specific debris-generating events requires a proper understanding of the event's probability of occurring, the event's potential to generate debris, and the likely amount of debris to be generated. Table 2-2 highlights the debris-generating events most likely to impact the region.

Type of Disaster	Probability*	Nature of Debris	Debris Generation Potential	Widespread Impact
Flooding	Very High	See Table 2-1	Medium	Medium to High
Windstorm	Very High		Medium	High
Landslide	High		Low to Medium	Low
Winter Storm	Very High		Low to Medium	Medium
Earthquake	Medium		Medium to High	High
Wildland Fire	Very High		High	Medium to High
CBRNE+	Very High		High	Low to Medium

* The probability of future events is based on findings in the 2015 Washoe County Regional Hazard Mitigation Plan.
 + CBRNE disaster includes hazardous materials accidents.

2.3.1 Hazus Data

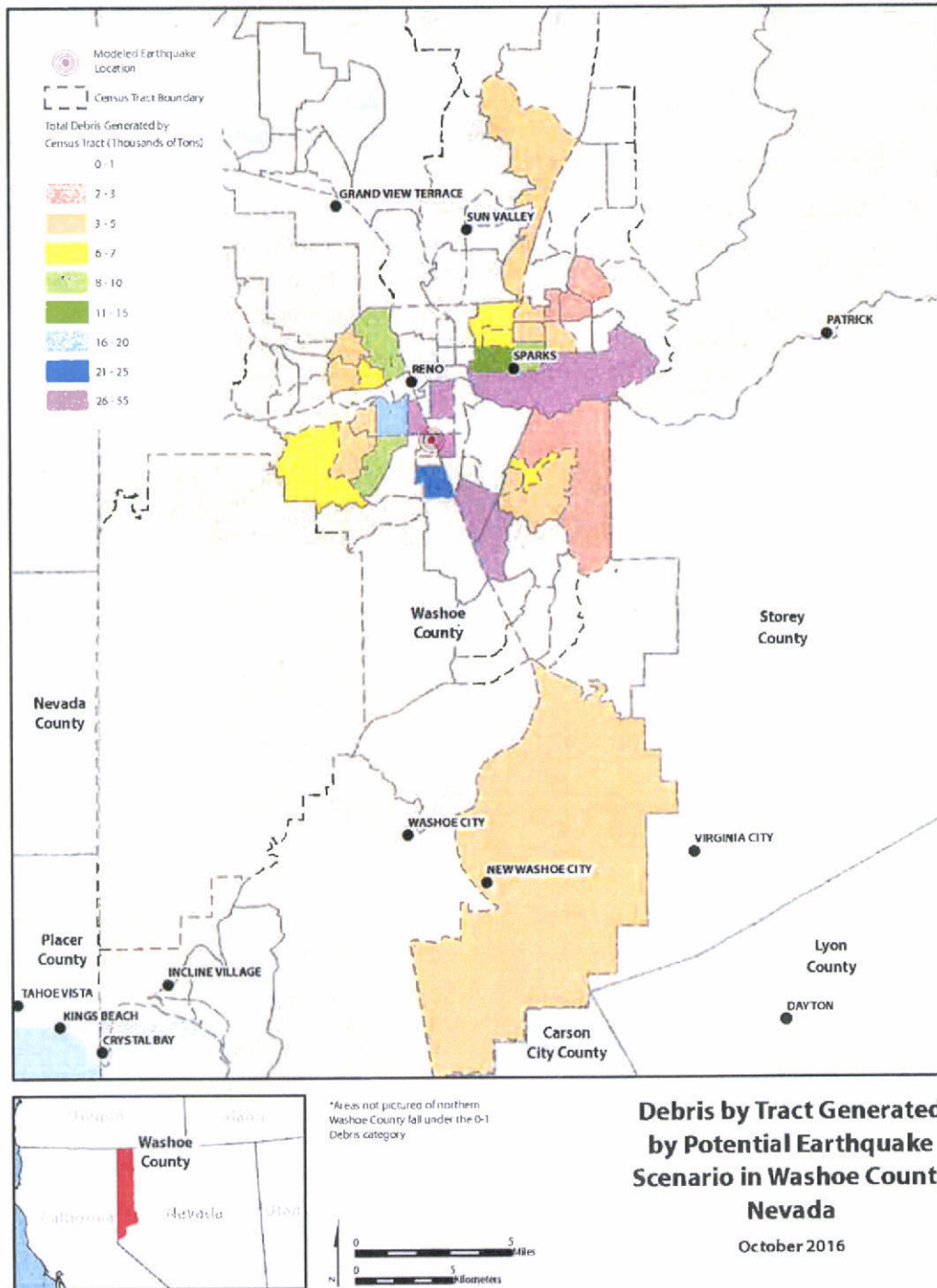
Table 2-3 provides a debris summary report based on a 6.5 magnitude earthquake with an epicenter in downtown Reno, Nevada. See Figure 2-4 for a map of debris by census tract.

Debris Type	Tonnage	Cubic Yards ¹	Acreage ^{2, 3}
Brick, Wood, and Others	521,400	1,042,800	107.3
Concrete and Steel	1,058,600	2,117,200	217.8
Total	1,580,000	3,160,000	325.1

¹ Cubic yards (CY) are calculated based on U.S. Army Corps of Engineers (USACE) guidance, which states that for construction and demolition debris 1 ton = 2 CY, and for mixed debris 1 ton = 4 CY.
² Total acreage of debris is based on USACE guidance, which states that 1 acre of debris 10 feet high converts to 16,133 CY.
³ To provide for roads and buffers, USACE guidance states that acreage must be increased by a factor of 1.66.
 See Federal Emergency Management Agency 329, Debris Estimating Field Guide for additional detail:
http://www.fema.gov/pdf/government/grant/pa/fema_329_debris_estimating.pdf



Figure 2-4 Map of Debris by Tract Generated by Potential Earthquake Scenario in Washoe County





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2.4 PLANNING ASSUMPTIONS

- A disaster that requires the removal of debris from public or private lands and waters could occur at any time.
- Existing solid waste transfer and processing facilities may be impacted by the disaster, resulting in reduced operational capacity.
- If the nature of the disaster requires state assistance, the Governor will declare a State of Emergency and authorize the use of state resources to assist in the removal and disposal of debris. In the event that federal resources are required, the Governor will request a Presidential Disaster Declaration and the region will request a mission assignment to manage debris operations.
- The Regional Partners will contract with private companies, who will play a significant role in the debris clearance, monitoring, removal, recycling, and disposal processes. Ideally, the Regional Partners will pre-qualify contractors to support these activities.
- Franchise or contract solid waste collection systems granting exclusive collection rights will focus on resuming regular garbage collection and supporting commercial debris collection services that are not covered for FEMA reimbursement. Franchised collectors will not have the proper equipment to conduct right-of-way debris removal or meet FEMA performance criteria.
- All contracts for disaster debris management activities will be developed in accordance with FEMA public assistance requirements.
- This plan is based on the waste management hierarchy of reduce, reuse, and recycle. Debris placement in a landfill or incineration is the last option considered for management of debris.

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3 Debris Operations

Section 3 identifies Regional Partner priorities, provides an overview of the phases of debris operations, and addresses other considerations related to effective debris management, including health and safety, public information, environmental considerations, and coordination with community partners.

3.1 GENERAL

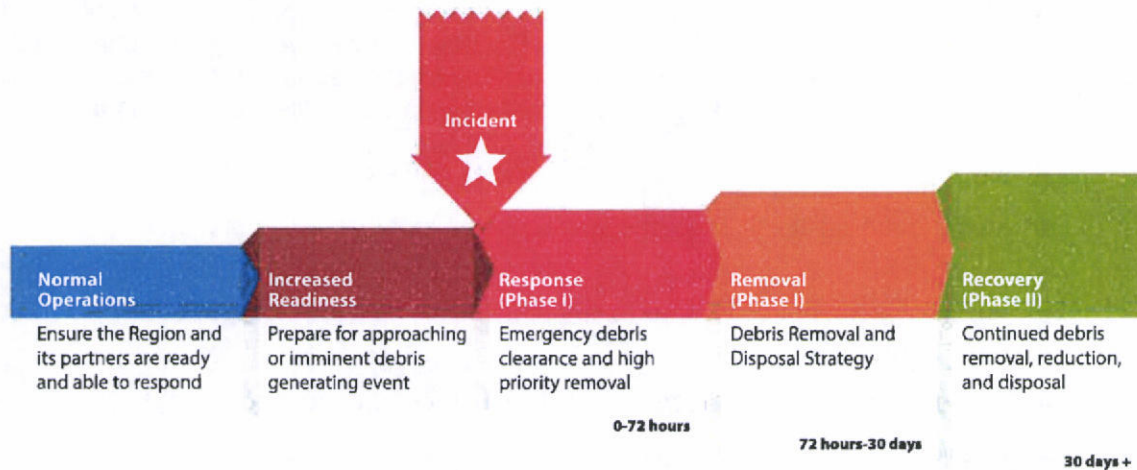
The Regional Partners have set the following general priorities for debris operations to align with established priorities for the regional response:

1. Protect human life, safety, and health.
2. Protect public property and the environment.
3. Protect private property.
4. Restore utilities and essential government functions.
5. Support regional coordination among all levels of government.

3.2 PHASES OF DEBRIS OPERATIONS

It is anticipated that debris clearance and removal activities will fall into five phases, as outlined in the following subsections and summarized in Figure 3-1.

Figure 3-1 Phases of Debris Operations



3.2.1 Normal Operations (Readiness)

Normal operations refer to the readiness phase and represent an ongoing process that includes planning, training and exercising, prequalifying contractors, and other activities that will ensure the Regional Partners are ready and able to respond to a debris-generating event.



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Section 3: Debris Operations

Whether for flooding, windstorms, an earthquake, or a human-caused disaster, the region is in a state of readiness at all times. Readiness actions that the Regional Partners participate in may include:

- Establish and train a Debris Management Team (DMT).
- Appoint a Regional Debris Manager within the DMT.
- Ensure that personnel tasked with debris management roles are adequately trained and that plans and procedures are regularly exercised.
- Review and update this plan, including pre-identification and characterization of potential TDSR sites and any potential associated environmental concerns.
- Secure and pre-position equipment to support debris operations in the event that a potential disaster is threatening the area.
- Pre-identify debris management contractors and enter into agreements.
- Review and update, as appropriate, lists of qualified contractors, sample contracts, rights of entry, hold harmless agreements, and other agreements necessary to conduct debris operations.
- Review local building codes and revise them to expedite debris operations.
- Participate in the identification and planning for regional TDSR sites.

3.2.2 Increased Readiness

Some debris-generating events may give advanced warning of their impacts. In anticipation of a potential or imminent debris-generating event, the Regional Partners will begin preparing staff and resources for the activation of debris operations. During the increased readiness phase of the debris management cycle, the Regional Partners may participate in the following actions:

- Alert the DMT and other supporting agencies of the potential event.
- Notify identified TDSR sites and staging areas that they are to stand by for possible activation.
- Review contracts, policies, and other agreements that may support debris management.
- Provide expedited training for the DMT and other supporting agencies.
- Review plans and procedures to ensure operational readiness.
- Monitor the situation to ensure that personnel and proper resources are operationally ready and available.
- Check and strategically locate debris clearance resources for quick activation and use.



3.2.3 Response (Phase I)

The response phase, during and immediately after an event, focuses on clearing emergency routes and roadways to critical facilities and any neighborhoods that have become isolated by debris-blocked roads. It also involves removal actions for debris that presents an immediate threat to life, improved property, or public health and safety.

During the response phase of the debris management cycle, the Regional Partners may participate in the following actions:

- Activate the REOC and DMT.
- Activate appropriate elements of this plan.
- Conduct initial debris operations, including:
 - Perform initial damage assessments and estimate debris quantities and types.
 - Activate standby contracts.
 - Document areas where debris must be cleared.
 - Identify locations of potentially hazardous/contaminated debris that may require state involvement for cleanup.
 - Conduct debris clearance activities based on debris clearance priorities (discussed in Section 3.2.3.2).
 - Conduct debris removal, if needed for life-saving measures.
 - Estimate the magnitude of the incident against available resources to determine what additional requests for support should be made.
 - Establish TDSR sites, as needed, and coordinate with the DMT regarding the establishment of regional site(s).
- Provide initial public messaging regarding safe handling of debris and not blocking public rights-of-way.
- Mobilize debris management contractors, if identified.

3.2.3.1 Damage Assessment

One of the first actions to be taken during a debris-generating event is to conduct an initial assessment of debris quantities. These assessments are critical to determining the level of support and types of additional resources that may be necessary to support local debris operations. The goals of damage assessment operations are to determine the following:

- Types and quantities of debris
- Impact on public property and critical infrastructure
- Impact on private property and commercial areas
- Resources needed for response and recovery



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The Initial Damage Assessment (IDA) will also support regional jurisdictions in requesting a Preliminary Damage Assessment (PDA) to support a Presidential Disaster Declaration. In the event of a catastrophic incident, it is likely that the President will issue a declaration prior to completion of a PDA, though the county will still need to conduct a PDA if they are seeking resources and support.

Information about damage assessment activities led by the State of Nevada can be accessed in the State of Nevada Response and Recovery Guide to Emergencies and Disasters for State, Local and Tribal Governments.

Information about regional damage assessment procedures can be accessed in the Washoe County Damage Assessment Plan.

3.2.3.2 Debris Clearance

Initial debris clearance and removal operations are the responsibility of each Regional Partner. Requests for additional resources will also be conducted based on the procedures outlined in this plan and the REOP. If necessary, Regional Partners may request additional resources for emergency road clearance operations from pre-identified debris removal contractors. In the event of a regional debris-generating event, where resources to support debris collection and removal operations may be scarce, the Multi-Agency Coordination (MAC) Group, if established, would provide strategic recommendations to help guide regional operations.

The Regional Partners have identified the following priorities for debris clearance:

1. Access for emergency vehicles and personnel conducting life safety operations (police, fire, emergency medical services, and hospitals).
2. Access for crews repairing/installing critical infrastructure (natural gas and fuel, electrical, communication, water, and sewer services).
3. Access to critical facilities where mission-essential services are performed (including governmental services). Road clearance priorities are pre-established to allow access to critical public facilities such as: fire stations, police stations, hospitals, shelters, emergency supply centers, franchise garbage collection company equipment yards and other critical facilities.
4. Access to allow resumption of wet household garbage service to mitigate public health hazards.
5. Clear Areas Necessary for Movement of Goods and Services/Economic Restoration. Those portions of the public transportation network not included in the above priorities and needed to effectively transport goods and services throughout the Region that are not included in one of the previous categories. These may include access to warehouses, airports, and major business districts.
6. Clear Minor Arterial Routes. Routes not included in one of the previous categories that receive moderate traffic flow and carry a mix of local and through traffic.
7. Clear Local Routes. These areas include those portions of the public transportation network in residential neighborhoods that are not included in one of the previous categories.

It is important to note that FEMA may reimburse for only 70 hours of a time-and-materials contract after a debris-generating event (see *Chapter 2 of FEMA-325 for more information*). It is



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critical that all types of equipment and the amount of time the equipment is used are documented with detail and accuracy. Concurrently with emergency push operations, contractors identified by local governments should coordinate with the Regional Partners and Nevada Division of Environmental Protection (NDEP) to perform necessary preparation work to open TDSR sites, as needed.

3.2.4 Removal (Phase I)

Debris removal is generally considered the end of response efforts and the beginning of the recovery phase and occurs once immediate life and safety threats have been eliminated. Debris removal often begins with removing debris that was pushed into public rights-of-way during debris clearance operations. However, debris removal operations can be extended to include the collection of debris brought to the right-of-way by residents. If the property owners move the disaster-related debris to the right-of-way, an applicant may be reimbursed for debris pickup, haul, and disposal from the right-of-way for a limited period of time. It will be important for the public to be properly informed about what type of debris is considered to be "disaster-related" to ensure reimbursement and encourage segregation for efficient removal.

It is important to note that debris removal activities will be continued in debris reduction and disposal phases (Phase II).

Debris removal operations may be expanded to include debris removal from public areas, waterbodies, collection areas, and, in certain circumstances, private property. Whenever possible, debris will be hauled from the source/impact site directly to the final disposal site/transfer station/recycle center, to minimize costs associated with handling and hauling debris. Concurrently with the commencement of right-of-way debris removal operations, jurisdictions should evaluate the need for contract debris removal on private property, parks, and waterways.

During the removal phase of the debris management cycle, the Regional Partners may participate in the following actions:

- Conduct a region-wide damage assessment to refine initial debris estimates and assessments.
- Ensure that adequate numbers of TDSR sites are operational to accept debris.
- Coordinate with the DMT regarding regional TDSR site operations. Refine debris removal objectives and strategies based on the best information available.
- Remove debris according to established objectives and priorities.
- Coordinate responsibilities and collection strategies with private contractors and regional, state, and federal partners.
- Facilitate close coordination between the DMT, TDSR site managers, debris monitoring staff, and liaisons to update progress and discuss strategies and logistics.
- Terminate emergency time-and-materials debris clearance and removal contracts after 70 hours of actual work or when the price limit is reached (whichever comes first) and begin implementing more standard contracting processes.
- Assign and deploy debris monitors, either through force account labor or contract services, to debris management divisions to monitor debris removal operations.



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FEMA 327 – Public Assistance Debris Monitoring Guide provides detailed direction for requirements and activities.

- Restore near-normal curbside collection.
- Determine if pre-established drop-off facilities for residents are needed and establish a communication strategy.
- Continue to disseminate regionally coordinated public information through a Public Information Officer (PIO) or Joint Information Center (JIC) regarding the regional collection strategy, including curbside debris pickup dates, public access to TDSR sites, disaster debris safety-related information, and other debris-related information.
- Maintain documentation of debris clearance, removal, and disposal activities, and provide information to the REOC.
- Participate in an Applicant's Briefing with the FEMA Public Assistance Coordinator.

See Appendix I, Debris Types and Strategies for Removal.

3.2.5 Recovery (Phase II)

The recovery phase deals with the disposition of private property such as automobiles and condemned structures and with the closure and restoration of TDSR sites. Completion of this phase may take more than one year.

During the recovery phase, the Regional Partners may participate in the following actions:

- Continue to carry out debris removal and the demolition of dangerous structures.
- Continue to document debris removal and disposal activities and update documentation.
- Contract for disposition of private property, including automobiles, boats, motor homes, etc.
- Resolve issues with difficult debris materials (e.g., private property debris removal, uncertain ownership, contaminated debris, etc.).
- Coordinate with the DMT to consolidate, close, and restore TDSR sites.
- Coordinate with state and FEMA representatives to ensure continued compliance with eligibility and documentation requirements.

3.2.5.1 Temporary Debris Storage and Reduction Sites

When debris quantities overwhelm the existing waste management infrastructure, or when debris types are mixed in large quantities, TDSR sites, holding areas, and/or public debris collection centers may be utilized to support community recovery efforts.

TDSR sites, which are locations used to temporarily store, reduce, segregate, and/or process debris, are established when it is not possible to take debris directly from the original collection point to the final disposition location. TDSR sites are frequently used to increase operational flexibility when landfill space is limited or when the landfill is not close to the debris removal area. TDSR sites allow flexibility in operations, facilitate recycling, and expedite the debris



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removal process. However, additional costs are often associated with the use of these sites because debris must be handled twice. Also, usable public land may not be available, and/or private land may be expensive to lease. Considerable time and effort are required to complete environmental and historic preservation compliance reviews before establishing and closing out a site. Finally, TDSR sites require dedicated site management and staff for efficient operations, safety, and documentation considerations. FEMA determines whether TDSR sites are reimbursable under the Public Assistance Program.

See Appendix T, Temporary Debris Storage and Reduction Site Requirements, for more information on the region's strategy for identification, preparation, operation, and demobilization of TDSR sites.

3.2.5.2 Public Drop-Off Sites

Large roll-off bins may be placed on public rights-of-way or public property for the public to bring their debris for collection. This is well suited for rural, sparsely populated areas or logistically difficult conditions (e.g., hilly neighborhoods) where curbside collection is not practical. The associated costs are generally low since the public essentially accomplishes the material collection and separation themselves.

A collection site would be staffed and managed by a disposal site monitor. Site staff would need to be present any time the site is accessible by the public to ensure that only acceptable debris types are received and that they are placed in their correct bins. For this reason, 24-hour staffing or restricted site access would be needed. Disposal site monitors are also needed to facilitate the bin exchange process and ensure safety and accessibility for the public.

The site characteristics are important for efficient operations. The site should have separate ingress and egress to enable good traffic flow to facilitate collection bin exchanges. The site should have ample parking for the public.

Involvement by jurisdiction-specific legal counsel is important when considering a public debris collection site due to potential liability issues.

Public debris collection sites are a means to reduce costs associated with debris collection and hauling activities. However, costs associated with public debris collection sites may not be eligible for reimbursement under the Public Assistance Program, due to the following eligibility criteria not being met or verifiable:

- The debris was generated by the major disaster event.
- The debris was located within a designated disaster area on jurisdiction-improved property or public rights-of-way.
- The debris removal is the legal responsibility of the county.

The decision to set up a public debris collection site should be made by the REOC or DMT, along with legal counsel, elected officials, and, if applicable, FEMA Public Assistance Program staff and the USACE.

3.2.5.3 Removal Monitoring

Upon activation, a contracted monitoring firm may be engaged to ensure equitable and environmentally compliant debris removal processing. The monitoring firm may deploy staff to support truck certification, collection, and disposal monitoring functions. The monitoring firm will



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orient employees with operational procedures and retrain field training program staff on current debris removal eligibility, FEMA requirements, jurisdiction-specific debris removal contract requirements, and safety procedures as appropriate. Collection monitors must carefully document debris collection information to demonstrate eligibility and ensure proper debris removal contractor payments and FEMA reimbursement. The documentation should include:

- Applicant name
- Location of debris, including full address and zone
- Time and date of collection
- Name of contractor
- Name and unique employee number of monitor
- Truck certification number
- Truck capacity (the disposal site monitor will fill out load call [percentage] information)
- Debris classification
- Disaster declaration number

See Appendix H, Debris Monitoring Tools, for more information on debris monitoring.

3.2.5.4 Debris Removal on Private Property

In rare circumstances, the Regional Partners will collect and transfer debris on private property to disposal sites. Generally, debris removal from private property following a disaster is the responsibility of the property owner. However, a regional debris-generating event may deposit enormous quantities of debris on private property over a large area, resulting in widespread immediate threats to first responders and to the public at large. The Regional Partners may need to enter private property in the following circumstances:

- When eliminating immediate threats to life, public health, and safety.
- When eliminating immediate threats of significant damage to improved property.
- When ensuring 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 Public Assistance Program (44 Code of Federal Regulations 206.224).

See FEMA Disaster Assistance Policy 9523.13, Debris Removal from Private Property, for more information (http://www.fema.gov/pdf/government/grant/pa/9523_13.pdf).

See Appendix S, Sample Right-of-Entry Agreement, for more information on debris removal from private property.



3.2.5.5 Debris Disposal and Processing

Once debris has been collected and brought to TDSR sites, the material will be processed for recycling, reuse, or reduction before land fill disposal. In this section, the term "recycling" applies to any material that will undergo processing before being used in an end product. For example, concrete will be crushed before being turned into aggregate. The term "reuse" applies to any material that will be reused in its current form—no processing is required to make it useful in an end market. For example, wooden beams from a building would be used by rebuilding centers, rather than the wood being chipped into smaller pieces to be used as mulch. The term "reduction" applies to any material that will ultimately be recycled or end in a landfill but can be crushed, ground, or incinerated to decrease the size needed to store it. In many cases, reduction would be used in combination with either recycling or land fill disposal. Table 3-1 illustrates the options available for each category of debris.



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Category	Recycling	Reuse	Reduction	Landfill
Putrescible Wastes			•	•
Vegetation	•		•	•
Treated Wood			•	•
Inert Environmental Debris	•			•
Construction and Demolition	•	•	•	•
Metals and White Goods	•		•	•
Automobiles and Boats	•		•	•
Electronic Waste	•			•
Hazardous Waste	Hazardous waste must be disposed of at an approved hazardous materials disposal site.			
Personal Property			•	•

Recycling

Types of debris that are generally recyclable include inert environmental debris, construction and demolition debris, vegetation, metals and white goods (including automobiles and boats), and electronics. Recycling will be given consideration early in a disaster because it may reduce the cost of debris removal and disposal. To begin the recycling program, the DMT should:

- Locate markets and users interested in the good.
- Determine the segregation and preparation requirements.
- Determine the tests that are required.
- Determine the process for reducing and hauling.

Determine mitigation requirements to minimize environmental and public health impacts from the processing and disposal of disaster debris. See *FEMA 325, Public Assistance Debris Management Guide, Chapter 8, for more information* (http://www.fema.gov/pdf/government/grant/pa/9523_13.pdf).

Reuse

Building material reuse centers may be able to provide deconstruction services, at a cost, for individual homes and/or public property that is damaged. In some cases, use of deconstruction methods rather than demolition can salvage 85 percent of a building for reuse. In order for material to be viable for reuse, the end use must be considered from the start. Rather than demolishing a building with heavy equipment, the building would be deconstructed with the idea of reuse in mind. Doors, flooring, wood beams, fixtures, tiles, and molding are just some of the materials that could be reused without needing any physical processing.



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Reduction

Reduction will generally be used prior to recycling to break down material to a size that can be incorporated into new materials or prior to land fill disposal to reduce the amount of space required both in the truck for transportation and in the landfill for disposal. There are several reduction methods, including grinding and chipping, crushing, and incineration.

- **Crushing.** The crushing of vegetative debris is the least effective reduction method and results in a reduction ratio of 2:1. Crushing is an appropriate reduction method for construction and demolition debris that cannot be recycled.
- **Grinding and Chipping.** In this method, vegetative debris is chipped or ground, which typically results in a reduction ratio of 4:1. The leftover mulch can be either hauled to a final disposal location or recycled.
- **Incineration.** Open air burning is not allowed in Nevada under NRS 444.560. However, in the case of a state-declared disaster, NDEP may allow burning of certain types of debris. The burning of vegetative debris typically results in a reduction ratio of 20:1. The leftover ash may be hauled to a final disposal location or incorporated into a land application. *See the State of Nevada Disaster Debris Management Plan for more information regarding incineration of debris.*

3.2.5.6 Disposal Monitoring

Similar to the removal monitoring activities discussed in Section 3.2.5.3, the Regional Partners may also hire a firm to monitor disposal activities. The primary function of the monitoring firm with regards to disposal monitoring is to document the disposal of disaster debris at approved TDSR sites and final disposal locations. Monitors perform quality assurance/quality control checks on all load tickets and haul-out tickets to ensure that information captured by removal monitors is complete. This quality assurance/quality control includes, but is not limited to:

- Verification that placard information is documented properly.
- Verification that all required fields on the load ticket have been completed.

Afterwards, the disposal monitor will document the amount of debris collected by making a judgment call on vehicle fullness (typically on a percentage basis). The percentage documented for each debris removal vehicle is later applied to the calculated cubic yard capacity of the vehicle to determine the amount of debris collected. The disposal monitor's responsibilities include, but are not limited to, the following:

- Complete and physically control load tickets.
- Ensure that debris removal trucks are accurately credited for their loads.
- Ensure that trucks are not artificially loaded.
- Ensure that hazardous waste is not mixed in with loads.
- Ensure that all debris is removed from the debris removal trucks before exiting the TDSR site or final disposal site.
- Ensure that only debris specified within the jurisdiction's scope of work is collected.



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- Ensure that all debris is disposed of at a properly permitted landfill.
- Match landfill receipts and/or scale house records to haul-out tickets.

See Appendix H, Debris Monitoring Tools, for more information on debris monitoring, including samples of a debris monitoring plan, load ticket, and debris logs.

3.2.5.7 Hauling Operations

Disaster debris that cannot be reduced, reused, or recycled using other strategies must be disposed of in landfills. The most cost-efficient strategy for disaster debris disposal is generally to make use of the jurisdiction-owned or typically used landfills, but disaster debris could easily overwhelm existing landfill capacity. If local landfills are not adequate, the DMT will attempt to locate additional landfills close to the disaster area.

If transportation of debris is only disrupted for a short period of time, it may be most efficient to store and transport waste when normal methods are restored. Pre-identified TDSR sites may be used to store debris if proper handling procedures are used. Proper handling procedures may include limiting debris piles to 15 feet in height, providing 50-foot-wide lanes between piles for fire control access, and ensuring that appropriate Washoe County Health District (WCHD) health and safety regulations are followed. If extended storage is used, debris transport should be prioritized to remove problem waste and putrescible waste. Other waste types, such as inert waste, may be stored for extended lengths of time.

Hauling operations may include:

- **Railway.** A portion of the region's waste may be transported by rail to landfills outside of the area, creating a possible transportation vulnerability following an incident.
- **Long-Haul Truck Transport.** Truck and container equipment could be used to transport waste to landfills or to an alternate location with access to rail traffic. Limiting factors associated with this method include the limited numbers of containers and the additional time it would take to transport the waste.

3.3 HEALTH AND SAFETY

Debris operations involve the use of heavy equipment and numerous types of trucks, which can pose safety hazards to emergency workers and the public. In addition to safety hazards, exposure to certain types of debris can pose potential health risks to emergency workers and the public. Responsibility for the health and safety of disaster debris management workers will be the responsibility of risk management programs for each Regional Partner.

In Nevada, worker safety and health is regulated by the Nevada Occupational Health and Safety Administration (OSHA), which is part of the Division of Industrial Relations, Department of Business and Industry. Assistance may be requested by contacting the nearest Nevada OSHA field office located at 4600 Kietzke Lane, Reno, Nevada 89502 | (775) 688-3700.

See Appendix L, Health and Safety Strategy, for more information on the regional health and safety strategy for debris-generating events.



3.4 PUBLIC INFORMATION

Public information during a debris-generating event will be coordinated through the REOC via the PIO. In a more localized debris-generating event in which the REOC is not activated, these activities will be coordinated by the PIO for the affected Regional Partner(s). The Public Information Strategy is intended to assist the PIO with coordination of public information specific to debris management. This strategy:

- Identifies the type of public information that will need to be prepared during a debris-generating event.
- Assigns roles and responsibilities for dissemination of public information during a debris-generating event.
- Provides for a Public Inquiry Center that can be activated to support public information activities during a debris-generating event.

See Appendix O, Public Information Strategy, for more information on the regional public information strategy for debris-generating events and Washoe County Emergency Warning and Public Information Plan for more information on planning mechanisms already in place.

3.5 ENVIRONMENTAL CONSIDERATIONS

The removal and disposal of certain types of debris can impact human health and the physical environment. Successful debris operations depend on compliance with federal, state, and local environmental laws. Environmental concerns must be identified in the early phases of debris operations to ensure that corrective actions can be taken and long-term damage is mitigated. The following should always be incorporated into any debris removal activity:

- Consider the effects of actions on wildlife and the environment.
- Be proactive in conservation and protection activities.
- Avoid harm to endangered species and critical habitat.

The following text is from the Seattle Urban Areas Security Initiative (UASI) Region Disaster Debris Management Plan. The UASI Plan provides a thorough analysis of the application of environmental laws during disaster debris operations and has been expanded to include Nevada authorities.

3.5.1 Response and Removal Phases

In the event of a disaster, efforts should be made by responders to comply with all federal and state environmental regulations. However, due to the sudden onset of disasters and the need to respond quickly, preservation of public health and safety is paramount, which may result in the governor and FEMA invoking exemptions to regulations during the response phase of a disaster. When disaster debris operations move from response to recovery, all applicable federal, state, and local regulations should be followed.

There are currently 50 applicable exemptions to federal environmental laws. These exemptions typically allow either the President or the EPA Administrator to waive, suspend, or modify existing requirements. These exemptions are given on a case-by-case basis for emergencies, disasters, or matters of national security, or if the action is



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of paramount importance to the country (American Bar Association 2005). For example, the Stafford Act exempts immediate response actions from National Environmental Policy Act (NEPA) requirements (see the following section for more information). The Council on Environmental Quality's (CEQ) implementing regulations exempt emergencies and disasters from NEPA altogether, or from its environmental impact statement requirements. (Note that NEPA itself does not contain any exemptions.) (Seattle UASI 2010)

In addition, all federal laws listed in Table 3-2 provide specific exemptions that can be invoked in the aftermath of disasters.

3.5.2 Recovery Phase

Before initiating recovery efforts after a disaster, NEPA, and other applicable federal regulations must be addressed if any of the following conditions occur:

- *Debris disposal, other than to a permitted landfill.*
- *Projects whose footprint differs from pre-disaster conditions.*
- *Public assistance projects with hazard mitigation proposals.*
- *Projects affecting a historic or potentially historic site or structure.*
- *Projects affecting a current or proposed threatened or endangered species.*
- *Projects affecting a wetland.*
- *Projects affecting a floodplain.*
- *Cleanup and/or disposal of oil and hazardous materials.*
- *Projects with known or suspected environmental concerns.*

The following actions, whether approved by the state or FEMA, must undergo an environmental review by FEMA before construction can begin:

- *Improved projects.*
- *Alternate projects.*
- *Other projects in which the previously approved scope of work has been changed.*

In the event of a federally proclaimed disaster, and if FEMA provides federal funding, applicants must comply with federal environmental and historic preservation laws. Exemptions to federal environmental laws can occur during the recovery phase and only with specific guidance from FEMA. The following emergency work may be done without triggering federal environmental laws:

- *Emergency actions (e.g., search and rescue, emergency care, issues of life and safety).*
- *Debris clearance (not necessarily disposal or storage/staging).*



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- *Repair and restoration to pre-disaster conditions, provided there is no significant change in the construction footprint (unless the structure is older than 50 years).*
- *Temporary repairs (unless the structure is older than 50 years)" (Seattle UASI 2010).*

Table 3-2 identifies federal environmental laws that may impact regional disaster debris operations and their state equivalents in Nevada.

Table 3-2 Environmental Laws that May Impact Regional Disaster Debris Operations	
Federal	Nevada
National Environmental Policy Act	No counterpart statute
Endangered Species Act	NRS 503.584-589 – Protection and Propagation of Native Fauna
Natural Historic Preservation Act	NRS 383 – Historic Preservation and Archeology
Resource Conservation and Recovery Act	NRS 548 – Conservation
Comprehensive Environmental, Response, Compensation, and Liability Act	NRS 459.930 – Immunity from liability for certain persons for response actions and cleanup with respect to certain real property at which hazardous substance has been or may have been released.
Clean Water Act (Section 404)	NRS 445A – Water Controls
Clean Air Act	NRS 445B- Air Pollution
Rivers and Harbors Act (Section 10)	No counterpart statute
Executive Order 11990, Wetlands Protection	NRS 548 – Conservation
Executive Order 11988, Floodplain Management	NRS 543 – Control of Floods
Executive Order 12898, Environmental Justice	No counterpart statute
Executive Order 12941, Seismic Safety	NRS 341.087 – Adoption of certain seismic provisions and standards and NRS 278 – Planning and Zoning

3.6 WORKING WITH COMMUNITY PARTNERS

The Regional Partners may utilize the services of volunteer and community organizations to support debris operations. The Regional Partners will rely on the Washoe County Volunteer Management Plan to coordinate with and manage these partners. A liaison officer may be designated within the DMT to ensure that community partners engaged in debris operations are utilized in a safe and effective manner.



4 Coordination of Debris Operations

Section 4 highlights the setting in which debris operations will be coordinated within the region. This section details mechanisms within the REOC, states the purpose of a DMT, and outlines coordination with other partners, including the State of Nevada, federal government, and private entities.

4.1 GENERAL

During any debris-generating event, initial operations will be coordinated through the REOC. Coordination of debris operations will be the responsibility of the Operations Section (specifically, the Public Works Unit), which will coordinate with local responders and resources to ensure an effective response. As debris operations transition into the removal and recovery phases, coordination may occur via different mediums including email and telecommunication.

Procedures for activation and operation of the REOC are located in in the REOP.

4.2 REGIONAL EMERGENCY OPERATIONS CENTER

The REOC supports incident response activities, including tracking, management, and allocation of appropriate resources and personnel to support debris management.

The roles and responsibilities of the REOC and Command Staff are well covered in the REOP. The roles and responsibilities outlined below are intended to supplement the REOP and outline responsibilities specific to debris management.

See Section 8 of the REOP and ICS Position Checklists located in the REOC for more information on the roles of specific REOC ICS Positions.

4.2.1 Management Section

The REOC Management Section is responsible for operation of the REOC when it is activated and has overall responsibility for coordinating resources in support of emergency operations, including debris operations. The Management Section will:

- Coordinate activities supporting debris operations.
- Approve release of debris operations information through the PIO.
- Ensure that all debris operations comply with legal and health and safety regulations.

4.2.1.1 Public Information Officer

The PIO will coordinate with the DMT to develop incident-specific public information for the debris operations. The public information will include the parameters, rules, and guidelines for the debris operations to ensure that affected residents can begin their personal recovery activities. At a minimum, the PIO will:

- Work to quell rumors and misinformation and to help ensure that the debris operations run as smoothly as possible.
- Promote the following information to the public:



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Section 4: Coordination of Debris Operations

- Method(s) to be used to collect debris (curbside and/or collection centers).
 - Specifics regarding dates, hours, locations, routes, etc. for pickup and/or drop off, allowable types and quantities of debris segregation requirements, household hazardous waste considerations, etc.
 - Specifics regarding the debris management facilities that will be in use in the region (e.g., types, their dates and hours of operation, debris transport routes, what the public should expect regarding dust, noise, after-dark operations, and other potential issues of concern).
 - Multi-lingual (non-English) requirements for the affected population(s).
 - The methods that will be used to disseminate the information (e.g., electronic and print media, internet sites, public forums, direct mail/direct distribution, billboards, flyers within billings, door-to-door campaigns, special needs advocacy groups, etc.).
 - Where public concerns, complaints, fraud reporting, and questions can be directed (e.g., Debris Information Center, web site, specific governmental office).
- Set up a call center for disaster debris information.

See Appendix O, Public Information Strategy for more information on the region's debris management public information strategy.

4.2.1.2 Legal Officer

The Legal Officer will coordinate with the DMT to ensure that all debris operations are in compliance with federal, state, and local laws. The legal officer must provide special attention to environmental and contract law topics. The Legal Officer will:

- Provide legal counsel to the DMT and Regional Debris Manager.
- Maintain legal information and review all contract language.

4.2.1.3 Safety Officer

The Safety Officer will coordinate with the DMT to ensure that all debris operations are in compliance with OSHA regulations and other safety guidelines. The Safety Officer will:

- Approve of all activity and project-specific health and safety plans.
- Ensure all debris operations are conducted in a safe manner.

4.2.2 Operations Section

As noted previously, debris operations may be established under the Operations Section (or Public Works Unit, if established). The Operations Section will:

- Develop a debris management strategy for all phases of debris operations.
- Develop and coordinate tactical objectives related to debris operations.
- Establish and facilitate staffing of the DMT, as required.



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4.2.3 Planning Section

The Planning Section is responsible for forecasting the needs of response, including debris operations, and implementing appropriate procedures and processes. The Planning Section will:

- Collect and evaluate debris operations information and distribute incident information through status summaries.
- Maintain debris operations resource status.
- Develop maps and information products related to debris operations.

4.2.4 Logistics Section

The Logistics Section is responsible for managing various resources to meet the needs of incident personnel, including debris operations. The Logistics Section will:

- Assist the DMT in developing contracts with local and regional contractors to support debris operations.
- Procure resources needed to support debris operations.

4.2.5 Finance Section

The Finance Section is responsible for tracking and maintaining costs related to debris operations. The Finance Section will:

- Monitor costs related to debris operations.
- Develop contract requirements.
- Establish contractor qualifications
- Maintain accounting, procurement, and personnel time records related to debris operations.

4.3 DEBRIS MANAGEMENT TEAM

The Regional Partners have established a DMT that will coordinate debris operations. The DMT is led by the Regional Debris Manager. During the readiness phase, the DMT performs debris management planning and preparedness activities.

At a minimum, the DMT will include representatives from the Regional Partner departments identified in Table 4-1.

- City of Reno Public Works Department
- City of Sparks Community Services Department
- Pyramid Lake Paiute Tribe Public Works Department
- Reno-Sparks Indian Colony Public Works Department
- Washoe County Roads Department



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- Washoe County Health District, Waste Management Program
- Truckee Meadows Water Authority
- City of Reno and Sparks Environmental Control Services
- Utilities Departments
- Finance/Procurement Departments
- Regional Partner Emergency Management Programs
- Legal Counsel
- Nevada Department of Transportation
- NV Energy



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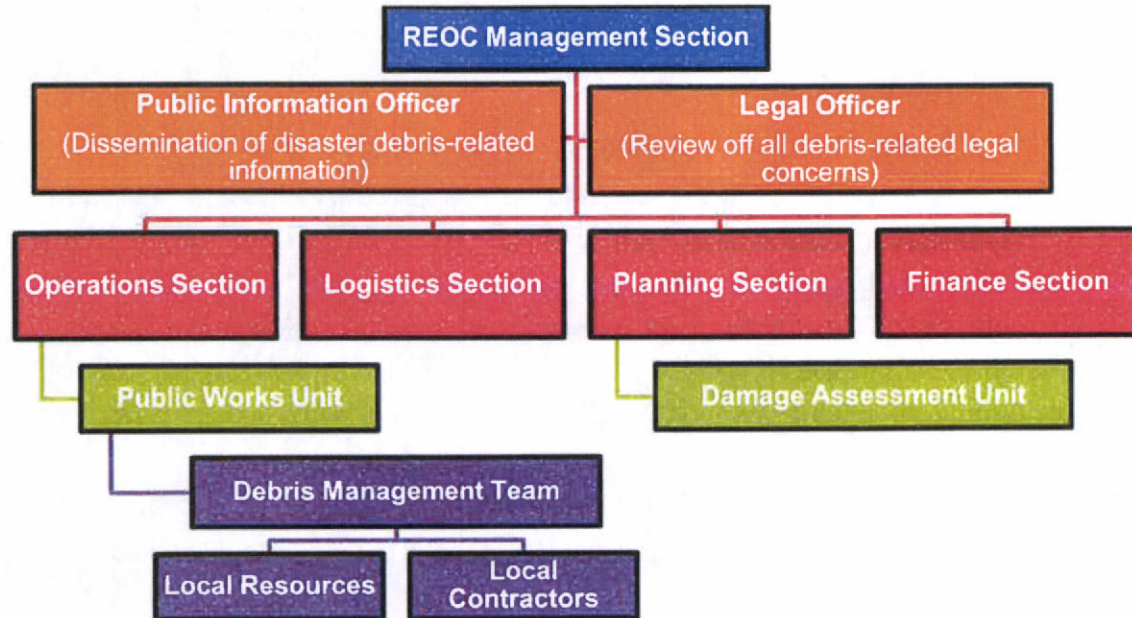
Partner	Primary Departments
Washoe County	Roads Department Washoe County Health District, Waste Management Program
City of Reno	Public Works Department Parks Maintenance Division Environmental Control Services
City of Sparks	Community Services Department Environmental Control Services
Reno-Sparks Indian Colony	Public Works Department
Pyramid Lake Paiute Tribe	Public Works Department
All Regional Partners	Emergency Management Finance/Procurement Departments Legal Counsel
Other Partners	Regional Hazardous Materials Response Team Truckee Meadows Water Authority Utilities Departments Nevada Department of Transportation NV Energy

When the REOC is activated, the DMT will be established under the Operations Section. The Regional Debris Manager will coordinate and establish priorities for regional debris removal, storage, and recycling resources from the REOC. The Regional Debris Manager may be the same person who performs this function during the readiness phase, or the role may be delegated based on available trained staff and incident size and scope. Depending on the size of the incident, the DMT will coordinate with contractors to provide debris clearance and removal support, manage TDSR sites, conduct site monitoring, provide public information, and assist with appropriate disposal of debris. The DMT will coordinate closely with the Damage Assessment Unit, if activated, to estimate the amount and type of debris and prioritize removal of debris from transportation routes.

See Figure 4-1 to learn more about where the DMT fits in the REOC organizational chart.



Figure 4-1 Regional Debris Management Team in the Regional Emergency Operations Center



4.3.1 Regional Debris Manager

A Regional Debris Manager may be chosen from any of the participating Regional Partners and will be determined by the specific scope and complexity of a situation. The Regional Debris Manager will lead all debris operations and direct the DMT. The Regional Debris Manager may also appoint a Deputy Regional Debris Manager to provide operational support and take on additional responsibilities as required. Responsibilities of the Regional Debris Manager include the following:

Readiness

- Train DMT employees on FEMA 325 requirements.
- Maintain the Regional Debris Management Plan.
- Coordinate with Emergency Management to ensure that debris management activities are considered in emergency plan development and updates.
- Assess the need for debris management contracts, including standby contracts with pre-identified and pre-qualified contractors.
- Develop scopes of work related to debris management activities to be used during contract development.
- Establish relationships with utilities.
- Pre-identify TDSR sites and public property options.



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Section 4: Coordination of Debris Operations

Response and Recovery

- Coordinate DMT efforts and assign roles and responsibilities as appropriate.
- Develop and review all debris management contracts in coordination with the Purchasing Division, including standby contracts with pre-identified and pre-qualified contractors.
- Secure all authorizations necessary for debris removal activities.
- Provide quality oversight of local debris operations to ensure compliance and maximize reimbursement.
- Ensure compliance with all federal, state, and local safety, environmental, historical preservation (see the *Guide for Federal Disaster Recovery Assistance Applicants for more information*), and other applicable laws, regulations, and policies.
- Coordinate with the DMT and NDEP on debris site permitting and operation contracts.
- Establish local work assignments and priorities.
- Coordinate with utilities, public works, and roads departments to promote debris clearance and road access.
- Report on debris removal and disposal progress, and prepare status briefings for the REOC and other local officials.
- Work closely with the PIO on developing messaging associated with debris removal and disposal activities.
- Coordinate local resources and contractors to support disaster debris management activities.
- Coordinate with Regional Partners on issues that affect regional debris operations.

The structure of the DMT will depend on the situation at hand; however, the following roles may be implemented in addition to the Regional Debris Manager:

- **Debris Management Specialists.** Provides subject matter expertise, information, and advice to incident command staff to guide disaster operations.
- **Debris Collection Supervisor.** Oversees collection activities prior to arrival at a regional TDSR site, and coordinates debris routing, staffing, and field reporting activities.
- **Debris Site Supervisor.** Manages TDSR sites, if needed, and is responsible for overseeing waste separation and environmental protection concerns.

4.3.2 Debris Management Team Briefings

Coordination meetings and briefings with key personnel should be conducted to update the status of debris operations. Daily meetings should be held each morning at a location determined by the DMT and include key personnel from the Regional Partners and debris management contractors. The purpose of daily meetings is to focus on daily objectives and include a discussion of operational progress and best practices moving forward. During the



meetings, the DMT will also review real-time statistics and completion maps that reflect operations through the end of the previous day. The meeting should also include a health and safety briefing.

4.4 COORDINATION AMONG REGIONAL PARTNERS

To the greatest extent possible, Regional Partners are encouraged to design their plans and procedures to complement this plan and the REOP. In addition, Regional Partners will seek to engage supporting agencies in the plan update process to ensure coordination of priorities and alignment of efforts. Coordination between the Regional Partners should extend to debris planning, coordinating debris operations, and requesting support through the processes outlined in the REOP.

4.4.1 Multi-Agency Coordination Group

During a regional debris-generating event, a MAC Group may be established to set decision-making criteria and make decisions on scarce (or critical) resources across multiple local jurisdictions.

Regional coordination of disaster debris operations will be conducted under the principles of MAC. The region is currently in the process of establishing a MAC System concept of operations that includes utilization of a MAC Group. While the Regional MAC System and MAC Group concepts are described in detail in a separate concept of operations, the basic principles are described below, as they serve as the overarching structures under which regional coordination of disaster debris management would occur.

4.4.2 Debris Management Centers

Many responders will not be present within the REOC and will rely on a number of other mechanisms to ensure coordination. These may take the form of Debris Management Centers, which are established to manage and coordinate department-specific activities and facilitate internal agency incident management and response. Debris Management Centers will receive direction related to debris operations directly from the DMT. Debris Management Centers should be established by each Regional Partner to provide a central location for the coordination and control of jurisdiction-specific debris operations needs. Additional Debris Management Center tasks include the following:

- Provide recommendations for force account and contractor work assignments based on priorities.
- Report to DMT on debris operations progress and prepare status briefings.
- Provide input to the PIO on debris operations.
- Coordinate with DMT to address regional needs.

4.5 STATE

A catastrophic incident will almost certainly overwhelm the region's response and debris operations capacity, and the county will declare a State of Emergency through the process outlined in the REOP. The county will submit documentation and request that the Governor declare a State of Emergency, which allows DEM to coordinate requests for a Presidential



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Disaster Declaration and assign missions for deployment of state resources to support local and tribal debris operations.

Details on the provision of state support during an emergency are described in the State of Nevada SCEMP, Disaster Debris Management Plan, and State of Nevada Disaster Recovery Framework - Infrastructure Systems Recovery Support Function Annex.

4.6 FEDERAL

After a disaster has been declared by the President, a request for Technical or Direct Federal Assistance may be made. The approved request is called a Mission Assignment. A Mission Assignment is a work order issued by FEMA to another federal agency directing completion of a specific assignment in anticipation of, or response to, a Presidential Disaster Declaration for a major disaster or emergency.

Two ESFs perform debris-related activities under FEMA Mission Assignments:

- ESF 3 – Public Works and Engineering is responsible for infrastructure protection, emergency repair, and restoration. This group provides engineering services and construction management, and serves as a critical infrastructure liaison. The USACE is the lead agency for ESF 3.
- ESF 10 – Oil and Hazardous Materials Response is responsible for responding to oil and hazardous materials issues, environmental safety, and short- and long-term cleanup. The two most commonly deployed agencies that deal with these debris-related activities are the EPA and the United States Coast Guard.

In addition, the National Disaster Recovery Framework outlines activities to be performed following the response to an incident.

Two Recovery Support Functions (RSFs) perform debris-related activities under FEMA Mission Assignments:

- RSF 5 – Infrastructure Systems is responsible for service repair and restoration, and all debris management activities.
- RSF 6 – Natural and Cultural Resources is responsible for maintaining and restoring natural systems and culturally valued resources.

All Mission Assignments have the following requirements:

- The Mission Assignment must be requested by the state.
- The community must demonstrate that required disaster-related efforts exceed state and local resources.
- The scope of work must include specific quantifiable measurable tasks.
- FEMA must issue the Mission Assignment.

Details on the provision of federal support during an emergency are described in the NRF.



5 Roles and Responsibilities

Section 5 assigns responsibility to Regional Partners and specific departments and agencies, including the State of Nevada, federal government, residents, and the private sector.

5.1 GENERAL

Regional Partner agencies and supporting partners may have various roles and responsibilities related to debris management throughout a disaster's duration. Typical duties and roles may also vary depending on the incident's size and the severity of impacts, as well as the availability of local and regional resources. This section discusses some of the roles and responsibilities that particular organizations may be responsible for in managing debris removal in the event of a disaster.

The organizations listed in this section should plan to assume the stated roles and responsibilities to prepare for and respond to debris-generating events and ensure efficient response and recovery operations. Each jurisdiction should assign staff to develop and maintain their operational disaster debris management plans and support debris operations during an incident. Staff should be assigned to these roles prior to an incident so that proper training and planning can take place.

5.2 REGIONAL PARTNER GOVERNMENT

See Table 5-1 for a matrix of primary and supporting agencies by debris function.

5.2.1 Elected Officials

Partner	Primary Departments
Washoe County	Board of County Commissioners
City of Reno	City Council, Mayor
City of Sparks	City Council, Mayor
Reno-Sparks Indian Colony	Tribal Chairman and Council
Pyramid Lake Paiute Tribe	Tribal Chairman and Council

Responsibilities of elected officials may include:

Readiness

- Establish policy and budget priorities to support regional disaster debris management capabilities.
- Participate in regular review and update of this plan, the REOP, and emergency procedures.



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Section 5: Roles and Responsibilities

Response, Removal, and Recovery

- Declare a State of Emergency to allow access to additional state and federal resources.
- Participate in the MAC Group, if established, to support coordination of regional debris operations.
- Stay informed, through the jurisdiction's emergency management program, of the local and regional situation.
- Coordinate any public announcements, statements, or messaging with the PIO.
- Solicit support from partners.

5.2.2 Emergency Management

Partner	Primary Departments
Washoe County	Emergency Manager
City of Reno	Emergency Manager
City of Sparks	Emergency Management Coordinator
Reno-Sparks Indian Colony	Emergency Services Manager
Pyramid Lake Paiute Tribe	Emergency Response Coordinator

Responsibilities of Regional Partner emergency management programs may include the following:

Readiness

- Maintain and coordinate regular review of this plan and REOP, in coordination with the DMT.
- Coordinate disaster debris management training and exercises, as appropriate.
- Conduct pre-planning coordination for TDSR sites and debris removal routes, in coordination with the DMT and supporting agencies.
- Assist Regional Partners public works, roads, and hauler entities in establishing a DMT and identifying a Regional Debris Manager (if not already identified) under the Operations Section.

Response, Removal, and Recovery

- Immediately activate the REOC and prepare materials for elected officials to declare a State of Emergency according to the REOP. Coordinate debris operations with regional efforts through the MAC Group, when established.
- Provide a liaison, assigned by the PIO, to the regional Joint Information Center (JIC), when established.
- Assign public information staff to support the JIC, if appropriate.
- Support damage assessment activities and reporting.



5.2.3 Public Works, Roads, and Haulers

Partner	Primary Departments
Washoe County	Roads, WCHD Waste Management Program
City of Reno	Public Works
City of Sparks	Community Services
Reno-Sparks Indian Colony	Public Works
Pyramid Lake Paiute Tribe	Public Works
Supporting Agencies	Truckee Meadows Water Authority

Following a disaster, Regional Partner public works, roads, and hauler entities are responsible for coordinating debris operations with their jurisdiction.

Readiness

- Participate in regular review and update of this plan, the REOP, and emergency procedures.
- Pre-identify potential sites for the following:
 - Potential locations for TDSR sites
 - Assist in debris transportation routes
 - Public depots (non-FEMA eligible residential debris)
- Pre-position equipment for emergency clearance prior to a disaster if possible.
- Pre-identify emergency transportation routes (ensure that they do not overlap with debris routes).
- Assist damage assessment team coordination in collaboration with other departments.
- Lead the development of a statement of work for debris removal, TSDR site operations, and monitoring contracts.
- Maintain documentation for tracking departmental costs.

Response, Removal, and Recovery

- Coordinate debris estimation activities, including information sharing.
- Assist in prioritization of debris clearance activities based on pre-identified emergency transportation routes and identified debris-clearing priorities.
- Remove debris from public property.
- Develop public messaging regarding debris removal, garbage collection, and public depots.
- Lead and coordinate in establishing contractors to establish TDSR sites, debris removal, and monitoring as needed.



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Section 5: Roles and Responsibilities

- Coordinate with field staff in oversight (quality control) of debris removal contractors, TSDR site operations, and monitoring contractors as part of the DMT.
- Assist in creating situational awareness reports with information communicated from the field.
- Ensure that all environmental protection measures are in place and adhered to at TSDR sites. Coordinate with the Regional Debris Manager and NDEP for permitting compliance with TSDR site operations.
- Assist in maintaining documentation of departmental costs in collaboration with the DMT. The finance liaison shall coordinate efforts with the DMT.
- Assess the need for public depots and work with franchise haulers to ensure residential and commercial access for non-FEMA reimbursable debris.
- Serve as the lead agency for the DMT.
- Participate in after action review of debris operations.
- Lead and coordinate in preparing an Operations Plan with the DMT (i.e., a clearance/removal strategy).
- In conjunction with Regional Debris Manager and DMT, review rapid and initial damage assessments conducted by the Damage Assessment Unit.
- Through the REOC, make recommendations for prioritization of debris clearance activities based on pre-identified emergency transportation routes and identified debris-clearing priorities.
- If emergency transportation routes are impeded, attempt to sufficiently clear the roadway to allow access for emergency vehicles. If debris is beyond capabilities, communicate the need to the REOC.
- Coordinate debris removal in accordance with incident objectives
- Report debris information to the DMT and Operations Section in the REOC and request assistance, as needed.
- Identify equipment shortfalls and request resources through the REOC (Logistics).
- Determine the need for contractors to help clear debris
- Assist in developing an Operations Plan with the DMT (clearance/removal strategy).
- Procure and cancel first 72-hour contracts.
- Maintain documentation of departmental costs.
- Participate in after action review of debris operations.



5.2.4 Planning and Engineering

Partner	Primary Departments
Washoe County	Buildings and Safety, Community Services
City of Reno	Community Development
City of Sparks	Community Services
Reno-Sparks Indian Colony	Planning
Pyramid Lake Paiute Tribe	Transportation Planning, Public Utilities District
Supporting Agencies	Truckee Meadows Water Authority Nevada Department of Transportation

Regional Partner planning and engineering departments will work collaboratively to coordinate damage assessment and support debris estimation. Their responsibilities are to inspect jurisdiction-owned and managed infrastructure and ensure safe transportation routes in conjunction with transportation entities. Engineering staff may also support the management of debris removal and monitoring contracts. Note: the Nevada Department of Transportation is responsible for all bridge inspections.

Readiness

- Participate in regular review and update of this plan, the REOP, and emergency procedures.
- Assign damage assessment teams.
- Assist in pre-identifying potential TDSR sites that meet land use rules.
- Work with the DMT to update Transportation Construction Roles and Responsibilities section of this plan, particularly damage assessment strategy.
- Coordinate development of the Regional Zone Map.
- Identify critical facilities that will need to be inspected.
- Assess training needs for staff.
- Develop right of entry processes.
- Help define damage assessment in relation to structures and debris.

Response, Removal, and Recovery

- Conduct IDA with other DMT partners.
- Assist in prioritization of debris clearance activities based on pre-identified emergency transportation routes.
- Assist in establishing contractors to develop TDSR sites and conduct debris removal and monitoring as needed.
- Support management of debris removal and monitoring contracts as part of the DMT.



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Section 5: Roles and Responsibilities

- Help ensure that all environmental protections measures are in place and adhered to at TDSR sites.
- Support NDEP and WCHD TDSR permitting compliance.
- Coordinate with State Historic Preservation of State Lands for siting issues related to cultural resources.
- Conduct building inspections of public and private structures to identify unsafe and hazardous buildings.
- Support the IDA/PDA process.
- Assign staff to conduct damage assessments of jurisdiction-owned housing units and emergency shelters.
- Report information on damages, debris quantities, and debris types to the Regional DMT.
- Oversee the right of entry process.
- Maintain documentation of departmental costs.
- Participate in after action review of debris operations.

5.2.5 Law Enforcement

Partner	Primary Departments
Washoe County	Sheriff's Office
City of Reno	Reno Police
City of Sparks	Sparks Police
Reno-Sparks Indian Colony	Tribal Police
Pyramid Lake Paiute Tribe	Pyramid Lake Police
Supporting Agencies	Nevada Highway Patrol, Washoe County School District Police, University of Nevada-Reno Police

Responsibilities of Regional Partner law enforcement agencies may include the following:

Readiness

- Participate in regular review and update of this plan, the REOP, and emergency procedures.
- Assist in identifying and assessing emergency transportation routes.

Response, Removal, and Recovery

- Conduct drive-by assessments of pre-identified critical infrastructure and key resources.
- Assist in monitoring illegal dumping activities.
- Take custody of found property in debris.



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Section 5: Roles and Responsibilities

5.2.6 Washoe County Health District – Environmental Health Services

Responsibilities of WCHD – Environmental Health Services may include the following:

Readiness

- Participate in regular review and update of this plan, the REOP, and emergency procedures.
- Pre-identify potential health risks for a debris-generating event and develop plans and procedures to assist in local operations.
- Issue ongoing operating permits to waste generators, recyclers, treatment facilities, transfer stations, and waste haulers.
- Maintain Mutual Aid Agreements between jurisdictions and private companies.

Response, Removal, and Recovery

- Ensure that jurisdictions are using permitted haulers as their contractors.
- Inspect and coordinate appropriate actions to address issues of contaminated or spoiled food.
- Provide technical advice regarding health risks and safety procedures to the DMT and PIO.
- Assist in inspecting and approving TDSR sites based on the interests of public health.
- Evaluate the enforcement of public health regulations to hasten debris response and recovery operations.
- Assist in the development of best practices to dispose of debris.

5.2.7 Finance

Partner	Primary Departments
Washoe County	Comptroller, Procurement
City of Reno	Finance
City of Sparks	Financial Services
Reno-Sparks Indian Colony	Finance
Pyramid Lake Paiute Tribe	Finance
Supporting Agencies	Truckee Meadows Water Authority Sun Valley General Improvement District



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Section 5: Roles and Responsibilities

Regional Partner finance departments are responsible for all financial systems, accounting, purchasing, revenue management, equipment services and fiscal reporting. Throughout the debris removal operation, it will be the responsibility of each finance department to coordinate with FEMA and Public Works, Roads, and haulers entities (see Section 5.2.3) regarding Project Worksheet development.

Responsibilities of the finance departments may include the following:

Readiness

- Participate in regular review and update of this plan, the REOP, and emergency procedures.
- Support the development of debris collection and monitoring contracts.

Response, Removal, and Recovery

- Provide support to the DMT, as needed.
- Support the contract bidding process.
- Maintain familiarity with FEMA public assistance eligibility requirements.
- Secure all authorizations necessary for debris removal activities.

5.2.8 Truckee Meadows Water Authority

Responsibilities of the Truckee Meadows Water Authority may include the following:

Readiness

- Participate in regular review and update of this plan, the REOP, and emergency procedures.
- Assist in identification of TDSR sites that minimize the potential impact to water resources (as it relates to solids/biosolids only).

Response, Removal, and Recovery

- Support clearance and removal of debris that impacts or disrupts sewer and/or storm water systems and facilities.
- Provide water quality monitoring, as appropriate, of water sources that could potentially be impacted by debris operations (limited testing only).
- Facilitate the proper processing and disposal of biosolids.
- Support the hiring of a contractor to support environmental compliance of TDSR sites.

Note: Drinking water, wastewater, and reclaimed water utility services are the responsibility of Truckee Meadows Water Authority, a not-for-profit, community-owned water utility.



5.2.9 Parks and Recreation

Partner	Primary Departments
Washoe County	Regional Parks and Open Spaces
City of Reno	Parks, Recreation and Community Services
City of Sparks	Parks and Recreation
Reno-Sparks Indian Colony	Recreation
Pyramid Lake Paiute Tribe	Parks and Recreation
Supporting Agencies	State and National Parks, Private Parks and Grounds, Large Plot Landowners

Following a disaster, Regional Partner parks and recreation departments may be tasked with assisting with storage space for debris clearance equipment. In addition, depending on the availability of TDSR locations following a disaster event, the region may need to utilize parks as TDSR sites. Responsibilities of the regional parks and recreation departments may include the following:

Readiness

- Participate in regular review and update of this plan, the REOP, and emergency procedures.
- Support TSDR site selection.

Response, Removal, and Recovery

- Support emergency roadway tree clearing as appropriate.
- Oversee debris removal from parks and grounds.

5.2.10 Information Technology

Partner	Primary Departments
Washoe County	Technology Services/GIS
City of Reno	Communication and Technology
City of Sparks	Community Services
Reno-Sparks Indian Colony	Information Technology
Pyramid Lake Paiute Tribe	Technology Services

Responsibilities of Regional Partner technology services departments may include the following:

Readiness

- Participate in regular review and update of this plan, the REOP, and emergency procedures.
- Assist the DMT in developing maps related to TDSR sites, critical facilities, and emergency transportation routes.



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

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Response, Removal, and Recovery

- Develop maps that show debris disposal sites and debris removal routes.
- Support road closure and detour updates as necessary.
- Support mapping debris removal progress reported in daily meetings.

5.2.11 Legal Counsel

Partner	Primary Departments
Washoe County	District Attorney
City of Reno	City Attorney
City of Sparks	City Attorney
Reno-Sparks Indian Colony	Court Services
Pyramid Lake Paiute Tribe	Judicial Services

Responsibilities of Regional Partner legal counsel may include the following:

Readiness

- Participate in regular review and update of this plan, the REOP, and emergency procedures.
- Review contracts and land leases for TDSR sites and provide guidance on jurisdiction-specific contracting policy.
- Ensure compliance with all local, state, and federal, environmental, historical preservation (*see the Guide for Federal Disaster Recovery Assistance Applicants for more information*) and other applicable laws, regulations, and policies.
- Secure authorizations necessary for debris operations.
- Review rights-of-entry and hold harmless agreements.

Response, Removal, and Recovery

- Review rights-of-entry and hold harmless agreements.
- Review Memorandums of Agreement, Mutual Aid Agreements, and contracting agreements.



5.2.12 Fire Services

Partner	Primary Departments
Washoe County	Truckee Meadows Fire Protection District
City of Reno	Fire
City of Sparks	Fire
Reno-Sparks Indian Colony	Truckee Meadows Fire Protection District
Pyramid Lake Paiute Tribe	Emergency Services/Fire
Supporting Agencies	State Fire Marshal

Responsibilities of Regional Partner fire service organizations may include the following:

Readiness

- Participate in regular review and update of this plan, the REOP, and emergency procedures.
- Assist in IDA and debris estimation activities, as able.
- Assist in identifying emergency transportation routes.

Response, Removal, and Recovery

- Provide support to the DMT, as needed.
- Respond to requests to investigate and manage hazardous materials incidents.
- Respond to fire at debris management sites.
- If opening burning is permitted, approve and supervise debris management burn sites in accordance with appropriate state and local requirements to ensure safe burning.

5.3 COMMUNITY PARTNERS

5.3.1 Debris Management Contractors

The region will rely on the Association of General Contractors to determine appropriate contractors for many aspects of debris operations.

Responsibilities of local contractors may include the following:

Readiness

- Coordinate with Regional Partner governments to develop debris management contracts to support debris management in the event of a disaster.
- Coordinate with the Regional Partners to become pre-qualified vendors.

Response, Removal, and Recovery

- Remove debris from public/private property in accordance with locally developed priorities and approved scopes of work in contracts.



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Section 5: Roles and Responsibilities

- Ensure that all debris is transported to appropriate TDSR sites or to a regulated waste facility.
- Operate TDSR sites (in conjunction with the designated local jurisdiction) in accordance with generally accepted standards and practices and in full compliance with applicable environmental and health and safety regulations.

5.3.2 Local Utilities

Partner	Primary Departments
Washoe County	Utilities
City of Reno	Public Works
City of Sparks	Community Services
Reno-Sparks Indian Colony	Public Works
Pyramid Lake Paiute Tribe	Public Utilities District
Supporting Agencies	Truckee Meadows Water Authority

Responsibilities of local utilities may include:

Readiness

- Participate in regular review and update of this plan, the REOP, and emergency procedures.
- Coordinate with local agencies to identify critical infrastructure and key resources, and make plans to bring utilities back to those facilities first, if possible.
- Ensure that EOPs and standard operating procedures are in place to support restoration of service after an incident.

Response, Removal, and Recovery

- Mark underground utilities, when necessary.
- If emergency transportation routes are impeded, assist local agencies in clearing dangerous power lines in roadways to allow access for emergency vehicles.
- Work to return utility services to critical infrastructure and key resources as quickly as possible.

5.3.3 Volunteer and Community Organizations

Volunteer and community organizations exist to support multiple facets of debris operations, including debris hauling, demolition, support for first responders, and public outreach and education. Responsibilities of volunteer and community organizations may include the following:

Readiness

- Participate in regional debris management planning processes.
- Support resource identification efforts to indicate the level of service to be expected.
- Maintain resources and equipment to be operationally ready.



Response, Removal, and Recovery

- Participate in just-in-time training opportunities.
- Support debris operations, as needed and as available.
- Support first responders by serving food and water.
- Support and augment regional public outreach efforts.

5.3.4 Nevada Recycles

The Nevada Recycles program exists within the Nevada Department of Conservation and Natural Resources and works to reduce waste generation and increase recycling throughout the state. Responsibilities of Nevada Recycles may include the following:

Readiness

- Participate as an industry partner in regional debris management planning processes.
- Support regional haulers in debris management planning and business continuity planning.
- Support mapping and inventory of collection equipment for each franchise.
- Develop continuity of operations plans to aid in communication leading up to an anticipated event in the region.

Response, Removal, and Recovery

- Provide situational information regarding the status of the regional waste management system (related to collection).
- Communicate with public works and roads departments and haulers on the status of operational readiness (staff and equipment).
- Support commercial disaster debris collection and disposal (non-FEMA-eligible debris).
- Provide regular curbside and commercial collection as soon as possible.

5.4 RESIDENTS

Responsibilities of residents may include the following:

Readiness

- Participate in local preparedness groups, such as the Community Emergency Response Team.
- Establish and practice home emergency plans.



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Response, Removal, and Recovery

- Assist debris removal efforts by removing debris from the right-of-way, as able and as trained in the equipment being used.
- Follow guidance provided for separation, drop off, and/or collection of debris.
- Assist neighbors, as able.
- Report dangerous debris to local law enforcement.

5.5 STATE OF NEVADA

5.5.1 Division of Emergency Management

Under ESF 3 of the SCEMP, and as identified in the State of Nevada Disaster Debris Management Plan, DEM is the primary responsible agency for coordinating disaster debris response and management.

Under the state's plan, DEM may be called on to coordinate the following incident actions:

- Organize the response and establish a State DMT, with DEM as the primary agency, and with supporting and adjunct agencies identified within the State Debris Management Plan.
- Collect information critical to response through characterization of the waste, modeling, estimates of quantities, and direct damage assessments, and check in with critical physical resources.
- Plan and prioritize the response using available information and establishing temporary disposal sites, if needed.
- Conduct a prioritized and coordinated response while protecting worker and public health and providing needed communication within the response and to the public.

5.5.2 Nevada Division of Environmental Protection

NDEP has the authority to manage and permit disposal of disaster-related debris. In the event of a disaster, NDEP would consult with state and local health authorities and coordinate closely and communicate with DEM and the State Emergency Operations Center. NDEP is a supporting agency for ESF 3 and a primary agency for ESF 10.

In support of ESF 3 and ESF 10, NDEP may:

- Participate as a member of the State DMT.
- Provide emergency response coordination staff and environmental expertise to support response to environmental aspects of emergencies.
- Contribute to situational awareness by assessing solid waste infrastructure in conjunction with public works, roads, and hauler entities.
- Expedite environmental permitting and/or authorizations, including providing air and water quality permitting, and expedite a Solid Waste Letter of Authorization for TDSR site operations in conjunction with the Governor's Office.



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

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- Modify permits for existing debris sites to allow acceptance of debris types not permitted if no environmental impacts will result, or write Solid Waste Letters of Authorization to allow non-permitted debris types or to increase allowable amounts at currently operated disposal sites.
- Provide technical assistance on waste characterization and minimization, hazardous and solid waste handling/disposal, and related issues.
- Develop and follow a plan of action for an incident requiring the removal and disposal of household hazardous waste and asbestos debris.
- Provide spill contractors for the collection, sorting, and handling of hazardous materials, including household hazardous waste.
- Coordinate with the Nevada Department of Health and Human Services to manage debris contaminated with radioactive materials, to protect the public and responders.
- Authorize the opening of a previously closed landfill(s) to allow for the disposal of debris.
- Provide communications and outreach staff to prepare fact sheets and news releases for public outreach in conjunction with the JIC.
- Provide coordination with EPA for responses that exceed the state's capacity to respond.
- Provide laboratory services and chemists to assess potentially contaminated debris.

5.5.3 Supporting Agencies

Under the State of Nevada Disaster Debris Management Plan, DEM is supported by a number of state agencies with unique responsibilities for supporting disaster debris operations. All agencies listed below may support a debris management mission by DEM.

- Nevada Department of Administration
- Nevada Department of Agriculture
- Nevada Department of Conservation and Natural Resources, Division of Environmental Protection
- Nevada Department of Conservation and Natural Resources, Division of Forestry
- Nevada Department of Health and Human Services
- Nevada National Guard
- Nevada Department of Transportation
- Nevada Voluntary Organization Active in Disaster
- Nevada Citizen Corps
- Nevada Department of Corrections



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

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See the State of Nevada Disaster Debris Management Plan for responsibilities associated with supporting agencies.

5.6 FEDERAL

5.6.1 Primary Agencies

Under the NRF, disaster debris management falls within the scope of ESF 3, Public Works and Engineering.

Response

The primary agency responsible for response support of state and local disaster debris operations is the USACE. In the event of an incident where the damage and debris are so extensive that they exceed local and state capabilities, FEMA can assign USACE a mission to provide debris management assistance. Generally, this would take the form of three types of mission assignments:

- **Direct Federal Assistance.** USACE undertakes the debris management mission, as assigned by FEMA.
- **Technical Assistance.** USACE provides assistance to local governments in developing debris removal contracts and assisting with environmental issues, as well as training and coordination of FEMA and local government debris monitors.
- **Federal Operations Support.** USACE provides oversight of state and local debris operations for FEMA.

For the region, USACE operations would be conducted by one or more USACE Debris Planning and Response Teams.

Under ESF 3, USACE may be called on to assist in the following incident actions:

- Manage, monitor, and/or provide technical advice in the clearance, removal, and disposal of debris from public property and the re-establishment of ground and water routes into impacted areas.
- Coordinate management (including demolition, removal, and disposal) of contaminated debris with ESF 10 and FEMA.
- Provide coordination and technical assistance to achieve rapid recovery and reconstitution of critical waterways, channels, and ports.

Recovery

The primary agency responsible for recovery support of state and local disaster debris operations is FEMA.

Under ESF 3, FEMA may be called on to assist in the following incident actions:

- Maintain and provide the Public Assistance Guide that contains information regarding program eligibility, application processes, and project requirements.



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- Implement and manage the Department of Homeland Security/FEMA Public Assistance Program and other recovery programs between and among federal, state, tribal, and local officials.

Source: National Response Framework, Emergency Support Function 3 – Public Works and Engineering

5.6.2 Support Agencies

Under ESF 3, USACE is supported by a number of federal agencies with unique responsibilities for supporting disaster debris operations. All agencies listed below would be assigned to support a disaster debris management mission by FEMA:

- United States Department of Agriculture
- United States Department of Defense, Navy Supervisor of Salvage and Diving
- United States Department of Health and Human Services
- United States Department of Homeland Security, United States Coast Guard
- United States Department of the Interior, Bureau of Reclamation
- United States Department of Labor
- United States Department of Transportation
- United States Environmental Protection Agency
- General Services Administration
- Natural Resources Conservation Service

See the National Response Framework for responsibilities associated with the above supporting agencies.



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Section 5: Roles and Responsibilities

Table 5-1 Primary and Supporting Agencies by Debris Function

P = Primary Organizations
S = Supporting Organizations

	Damage Assessment	Debris Clearance and Removal	Debris Management Sites	Emergency Management	Monitoring Debris Operations	Hauling and Disposal Operations	Health and Safety	Environmental Considerations	Coordination of Public Information	Debris Contracts
REGIONAL PARTNERS										
Elected Officials				S						
Emergency Management Programs	S		S	P	S				S	S
Finance/Procurement Departments										P
Law Enforcement	S	S	S		S					
Legal Counsel									S	S
Parks and Recreation Departments			S							
Planning/Engineering	P	P	P		P	P			P	S
Public Works/Waste Management Programs	P	P	P		P	P		P	P	S
Technology Services/GIS Departments			S							
Truckee Meadows Water Authority	S	S					S	S	S	
WCHD			S		S		P	S		S



6 Contract Support

Section 6 outlines mechanisms and tasks to ensure operational readiness prior to a debris-generating event.

6.1 GENERAL

Tracking eligible costs and choosing appropriate types of contracts is of utmost importance during a disaster in order to be eligible for FEMA reimbursement. This section discusses eligibility, types of contracts, contract monitoring considerations, and site monitors required during debris removal. This section also includes a discussion of legal agreements to indemnify and limit liability. All contracts must be thoroughly reviewed by the jurisdiction's legal representative before they can be signed.

Regional Partner Finance and Procurement Departments are responsible for managing debris contracts from project inception to completion. Managing debris contracts includes monitoring performance, contract modifications, inspections, acceptance, payment, and close-out of activities.

6.2 ELIGIBILITY

FEMA 325 defines "eligibility" as "...qualifying for and meeting the stipulated requirements of the Public Assistance Program grant. The term eligible can be applied to applicants, facilities, work and costs." See *FEMA 325, Chapter 1 for more information.*

6.3 REASONABLE COSTS

FEMA will only reimburse reasonable costs for disaster debris removal. FEMA defines "reasonable" as a cost that is both fair and equitable for the type of work being performed. The reasonable cost requirement applies to all labor, materials, equipment, and contract costs awarded for the performance of eligible work. See *FEMA 325, Chapter 1 for more information.*

6.4 FORCE ACCOUNT LABOR

Force Account Labor (e.g., employees' labor) is eligible for reimbursement only as it relates to overtime labor costs (including benefits). This applies to permanent employees, reassigned employees, and seasonal employees during the season of anticipated employment. Eligible emergency work may not include the cost of straight-time labor costs (including benefits). Both straight-time and overtime labor costs are eligible for non-budgeted employees assigned specifically to perform emergency work.

See FEMA 325, Appendix G for more information on specific eligibility guidance regarding labor costs for permanent, temporary, essential, reassigned, and seasonal employees.

6.5 EXISTING SOLID WASTE COLLECTION COMPANIES

Pre-identifying the resources that existing solid waste companies have available is crucial to understanding where any gaps may lie beyond their normal capacity to maintain municipal solid waste services. In addition, regulations surround the types of debris that certain waste collection companies may haul. Table 6-1 indicates the waste collection companies active within the region and outlines the type of debris they collect.



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Section 6: Contract Support

Table 6-1 Regional Waste Collection Companies																							
Type of Debris	Waste Collection Company																						
Garbage and putrescible waste:	Waste Management, Inc.																						
Hazardous waste:	Safety Kleen H2O Environmental Clean Harbours																						
Septic/sewage waste:	Reno Rendering Sani Hut Summit Septic Sewer and Drain Easy Rooter Sierra Septic Service Quick Space A Rooter Man																						
Oil and antifreeze:	Reno Drain Oil and Thermofluids																						
Construction/Demolition, limbs, plastic, glass, metals, concrete, asbestos, dirt, rock:	<table border="0"> <tr> <td>All Eagle</td> <td>John Longo Construction</td> </tr> <tr> <td>Advance Installations</td> <td>Diversified Demolition</td> </tr> <tr> <td>D&D Roofing</td> <td>Olcese Construction</td> </tr> <tr> <td>Capurro Trucking</td> <td>Patrick's Clean up</td> </tr> <tr> <td>Nevada Recycling and Salvage</td> <td>Granite Construction</td> </tr> <tr> <td>B&L Disposal</td> <td>Q&D Construction</td> </tr> <tr> <td>PARC Specialty Contractors</td> <td>Rubbish Runners</td> </tr> <tr> <td>Scott Roofing</td> <td>Carmens Cleaning</td> </tr> <tr> <td>JM Environmental</td> <td>A Team Trash Hauling</td> </tr> <tr> <td>Rubbish Runners</td> <td>Empire Contractors</td> </tr> <tr> <td>FW Carson</td> <td></td> </tr> </table>	All Eagle	John Longo Construction	Advance Installations	Diversified Demolition	D&D Roofing	Olcese Construction	Capurro Trucking	Patrick's Clean up	Nevada Recycling and Salvage	Granite Construction	B&L Disposal	Q&D Construction	PARC Specialty Contractors	Rubbish Runners	Scott Roofing	Carmens Cleaning	JM Environmental	A Team Trash Hauling	Rubbish Runners	Empire Contractors	FW Carson	
All Eagle	John Longo Construction																						
Advance Installations	Diversified Demolition																						
D&D Roofing	Olcese Construction																						
Capurro Trucking	Patrick's Clean up																						
Nevada Recycling and Salvage	Granite Construction																						
B&L Disposal	Q&D Construction																						
PARC Specialty Contractors	Rubbish Runners																						
Scott Roofing	Carmens Cleaning																						
JM Environmental	A Team Trash Hauling																						
Rubbish Runners	Empire Contractors																						
FW Carson																							

See Appendix D, Debris Contacts, Contracts, and Agreements for more information on this topic.

6.6 ESTABLISHING ADDITIONAL PRE-POSITIONED CONTRACTS

Once the resources associated with existing contracts has been evaluated, it may be necessary to pre-establish contracts for additional resources to ensure effective response and recovery capabilities. Additional resources may include the following:

- Collection and processing of problem waste, including white goods
- Debris clearance and removal
- Debris reduction
- Management and monitoring of TDSR sites
- Management of contract debris hauling
- Rights-of-way and public property debris clearance
- Vegetation clearance and removal (tree trimming)



It is important to note that contracting with additional resources for debris collection may be pursued if the certified hauler is unable to provide service. When selecting companies for pre-positioning contracts, the Regional Partners will consider both local and regional contractors to ensure coverage.

As noted in FEMA 325, "An applicant may hire a contractor to perform such work as debris clearance, removal, disposal, reduction, recycling, and/or monitoring." Generally, contracted services must be competitively bid and must meet eligibility and reasonable cost requirements to qualify for the Public Assistance grant.

See FEMA 325, Chapter 2 for more detailed information on the following sections, as well as additional contract requirements.

6.6.1 Methods of Procurement

The following four methods of procurement are deemed acceptable by FEMA:

- **Small Purchase Procedures** – Obtaining price quotes for services or supplies under \$100,000 (informal method).
- **Sealed Bids** – Bids are publicly advertised and requested, and lowest bid is chosen (formal method).
- **Competitive Proposal** – Similar to a sealed bid, but awarded based on contractor's qualifications rather than price (formal method).
- **Noncompetitive Proposal** – The proposal is received from only one source. This method is discouraged; however, it may be used in certain circumstances, such as availability from only one source, emergency situations where delay is not reasonable, or competition is determined inadequate.

See Title 44 Code of Federal Regulations § 13.36 for federal procurement requirements. Also see FEMA Disaster Recovery Fact Sheet 9580.21, Debris Contracting Guidance, for more information. It can be found here: http://www.fema.gov/pdf/government/grant/pa/9580_201.pdf.

6.6.2 Types of Pre-positioned Contracts

There are four types of contracts that local governments can enter into for reimbursement: unit price, lump sum, cost plus fixed fee, and time and materials, as described below:

- **Unit Price Contracts** – Based on weight (tons) or volume (cubic yards) of debris hauled; should be used when the scope of work is not well defined and based on estimated quantities. A unit price contract:
 - Ensures a wide range of competition because of the simplicity of the contract.
 - Allows the scope of work to be easily increased or decreased because unit pricing for the work accomplished is established at the time of bidding.
 - Provides an accurate account of actual quantities transported in either cubic yards or tons.
 - Requires contract monitoring at both loading sites and at the disposal sites.
 - Has a relatively low risk to the contractor.



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- Carries some risk of contract fraud if loading and disposal operations are not closely monitored.
 - Is complicated if additional segregation for recycling and disposal is required at the staging sites.
 - Requires all trucks to be accurately measured and numbered.
 - Requires a significant amount of documentation and accurate accounting.
- **Lump Sum Contracts** – Establishes the total contract price using a one-item bid from the contractor within a prescribed boundary with a clearly defined scope.
 - **Cost Plus Fixed Fee Contracts** – A fixed contractor fee is added into the price of either a unit price contract or lump sum contract.
 - **Time and Materials Contracts** – Based on the price of labor and equipment when it is operating and is extremely flexible; however, this type of contract should be avoided unless absolutely necessary. Time and materials contracts may be used for short periods of time immediately after a disaster to mobilize contractors for emergency clearance efforts. These contracts will have a dollar ceiling or a not-to-exceed limit for hours (or both) and will be terminated immediately when this limit is reached. This contract qualifies for reimbursement for the first 70 hours of debris clearance and only when all local and state equipment has been committed elsewhere. The contract will state that:
 - The price for equipment applies only when equipment is operating.
 - The hourly rate includes operator, fuel, maintenance, and repair.
 - Regional Partners reserve the right to terminate a contract at its convenience.
 - Regional Partners do not guarantee a minimum number of hours.

Please note that FEMA discourages the use of piggyback contracts (e.g., having disaster-related work performed by another jurisdiction's contractor).

6.6.3 Ineligible Contracts

FEMA will not provide funding for the following types of contracts:

- Cost plus percentage of cost contracts.
- Contracts contingent upon receipt of local government or federal disaster assistance funding.
- Contracts awarded to debarred contractors.

6.7 IDENTIFICATION OF DEBRIS REMOVAL CONTRACTORS

To expedite recovery efforts, it is judicious for the Regional Partners to not only identify and maintain lists of available debris contractors, recyclers, and disposal facilities, but also to pre-qualify at least one debris contractor to perform debris operations. This pre-qualification should determine that the contractor is capable of performing debris removal work (e.g., capabilities, bonding, insurance, availability). Please note that federal procurement requirements must still



be followed—a pre-qualified contractor does not constitute a standby contractor. FEMA does not certify, credential, or recommend debris contractors.

See the FEMA Public Assistance Alternative Procedures Pilot Program Planning Requirements for more information.

A list of pre-qualified debris removal contractors for the Regional Partners can be found in Appendix D, Debris Contacts, Contracts, and Agreements.

6.8 MONITORING OF DEBRIS CONTRACTS

Unlike other categories of work eligible for Public Assistance grants, initial debris removal project worksheets typically do not have a defined scope of work since precise quantities of debris are difficult to attain. Therefore, unit price contracts that pay by debris volume or weight removed are typically implemented. Unit price contracts require extensive monitoring to determine accurate quantities of eligible debris removed and disposed. As load tickets are compiled and accurate quantities are determined through monitoring, the scope of work for the project worksheet, or version, is established.

Table 6-2 outlines the breakdown of monitoring requirements by contract type adapted from FEMA Disaster Assistance Directorate Fact Sheet 9580.203.

Table 6-2 Debris Monitoring Requirements by Contract Type							
Type of Contract	Project Worksheet Scope of Work	Sub-grantee Monitoring Required					Comments
		Crew Efficiency	Load Site	TDSR Sites	Disposal Sites	Fraud	
Lump Sum	Defined debris quantities and reasonable costs. Estimate is basis for contract costs.		✓		✓		Quantities are still required to determine reasonable costs.
Unit Price – Cubic Yards	Based on eligible debris listed on load tickets.	✓	✓	✓	✓	✓	
Unit Price – Ton	Based on actual weight measurements of eligible debris listed on load tickets.		✓		✓	✓	
Time and Materials	Based on labor, equipment, and materials records. Reasonable costs evaluated by determining costs per unit.	✓	✓		✓	✓	Typically used for road clearance. If used for debris removal, quantities are still required to determine reasonable costs. Eligible costs are restricted to up to 70 hours.



6.9 PRE-INCIDENT ACTIVITIES

As noted previously, it is crucial that the internal and external resources needed for debris operations be identified. Contracts with external resources should be pre-identified and established for the following areas:

- Trained debris monitors observe and document contractor activities. Monitors should be stationed at all pickup and disposal sites. Due to FEMA reimbursement regulations, it is suggested that contract employees be used to fill these positions.
- Contractors with sufficient resources to assist debris cleanup and hauling, including equipment and personnel, bonding and insurance, availability, and geographic place.
- On-call contracts for debris cleanup and hauling services.

6.9.1 Pre-Qualifying Contractors

When it is not feasible to enter into a contract prior to an incident, FEMA recommends developing a list of pre-qualified contractors that provide disaster management services and can be called after an incident has occurred. The following should be considered when pre-qualifying contractors:

- Amount and location of equipment and employees
- Level of availability
- After-hours contact information
- Insurance and bonding



7 Plan Implementation and Maintenance

Section 7 outlines the plan development process, prescribes plan maintenance and improvement processes, and provides plan training and exercises recommendations.

7.1 GENERAL

To maintain a robust capability to respond to a large-scale debris-generating event, it is important that local responders and personnel tasked with debris management responsibilities are adequately trained. Ultimately, it is the Regional Partners' responsibility to ensure adequate emergency response to debris-generating events within the region. Emergency Management will encourage staff to participate in regional and joint trainings, and these exercises should be designed to test this debris management framework, activation of DMTs, and implementation of mutual aid. The Regional Partners will encourage jurisdictional agencies as well as private industry with a role in debris management to participate in joint exercises.

7.2 TRAINING

Training provides the foundation for successful debris management response and recovery. It is important that the Regional Partners regularly test debris management capabilities through discussion- and operations-based training. A comprehensive debris management training program should include local debris management training and FEMA training courses that support debris operations. See the REOP for more information on training opportunities that support general emergency response operations.

Debris management training in the Regional Partners will include:

- Training to familiarize responders with the types of debris and handling procedures for hazardous or otherwise dangerous debris during an incident.
- Training for hazardous debris response teams to collect, separate, and dispose of hazardous waste.
- Training to familiarize responders with this plan, procedures, and available resources (e.g., FEMA's online debris contractor registry to identify and contract with private resources).
- Additional training for specialized staff includes:
 - Public Assistance Debris Monitoring Specialists
 - Structural Engineers – Assess impacted buildings and demolition (if required)
 - Legal Staff – Review debris-specific contracts, permits, indemnification, condemnation of buildings, and other debris-related liability
 - Environmental compliance officials
 - Public Information Officers and/or Debris Management Technical Specialists
 - Damage assessment and debris estimates

FEMA online and classroom training that support debris operations include:



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Section 7: Plan Implementation and Maintenance

- IS – 632.A: Introduction to Debris Operations
- IS – 630: Introduction to the Public Assistance Program
- E202: Debris Management Planning for State, Tribal and Local Officials

Training plans should be periodically reviewed and altered based on after-action and corrective-action reports, as well as capabilities assessments that address identified shortfalls.

7.3 EXERCISES

The Regional Partners will test their ability to respond to a large-scale debris-generating event through discussion-based (e.g., workshops, tabletop exercises) and operations-based (e.g., drills, functional, and full-scale) exercises on a regular basis as funding and resources allow.

7.4 REVIEW AND UPDATE PROCESS

At a minimum, this plan will be reviewed every five years. This review will be coordinated by the Washoe County Emergency Management and Homeland Security Program. This review will include the following:

- Review the status of resources.
- Evaluate the status of contracts and agreements.
- Build additional partnerships and buy-in to this plan.
- Evaluate the procedures outlined in this plan to ensure their continued viability.

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Appendices



Appendix A

Acronyms and Abbreviations	
ACWM	Asbestos-Containing Waste Material
C&D	Construction and Demolition
CBRNE	Chemical, Biological, Radiological, Nuclear, Explosive
CEQ	Council on Environmental Quality
COR	Contracting Officer's Representative
CSZ	Cascadia Subduction Zone
CY	Cubic yards
DEM	Nevada Division of Emergency Management
DMT	Debris Management Team
EPA	Environmental Protection Agency
ESF	Emergency Support Functions
FEMA	Federal Emergency Management Agency
GIS	Geographic information system
Hazus	Hazards U.S. Multi-Hazard program
HHW	Household Hazardous Waste
HTW	Hazardous Toxic Waste
IA	Inter-Local Agreement
IDA	Initial Damage Assessment
JIC	Joint Information Center
MAA	Mutual Aid Agreement
MAC	Multi-Agency Coordination
MOU	Memorandum of Understanding
NCDC	National Climatic Data Center
NDEP	Nevada Division of Environmental Protection
NEPA	National Environmental Policy Act
NIMAS	Nevada Intrastate Mutual Aid System
NIMS	National Incident Management System
NOAA	National Oceanic and Atmospheric Administration



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix A: Acronyms and Abbreviations

NRF	National Response Framework
NRS	Nevada Revised Statutes
OSHA	Occupational Health and Safety Administration
PA	Public Assistance
PDA	Preliminary Damage Assessment
PIO	Public Information Officer
Plan	Regional Debris Management Plan
PPE	Personal Protective Equipment
RCRA	Resource Conservation and Recovery Act
REOC	Regional Emergency Operations Center
REOP	Regional Emergency Operations Plan
RHMERT	Regional Hazardous Materials Emergency Response Team
RHMP	Regional Hazard Mitigation Plan
ROE	Right-of-Entry
ROW	Right-of-Way
RSF	Recovery Support Function
SEMP	State of Nevada Comprehensive Emergency Management Plan
SOP	Standard Operating Procedure
Stafford Act	Robert T. Stafford Disaster Relief and Emergency Assistance Act
STEP	Sheltering and Temporary Essential Power
SWLA	Solid Waste Letter of Authorization
TDSR	Temporary Debris Storage and Reduction Sites
THIRA	Threat and Hazard Identification and Risk Assessment
UASI	Urban Areas Security Initiative
USACE	United States Army Corps of Engineers
VCM	Vegetative Cover Multiplier
VOAD	Voluntary Organizations Active in Disaster
WCHD	Washoe County Health District



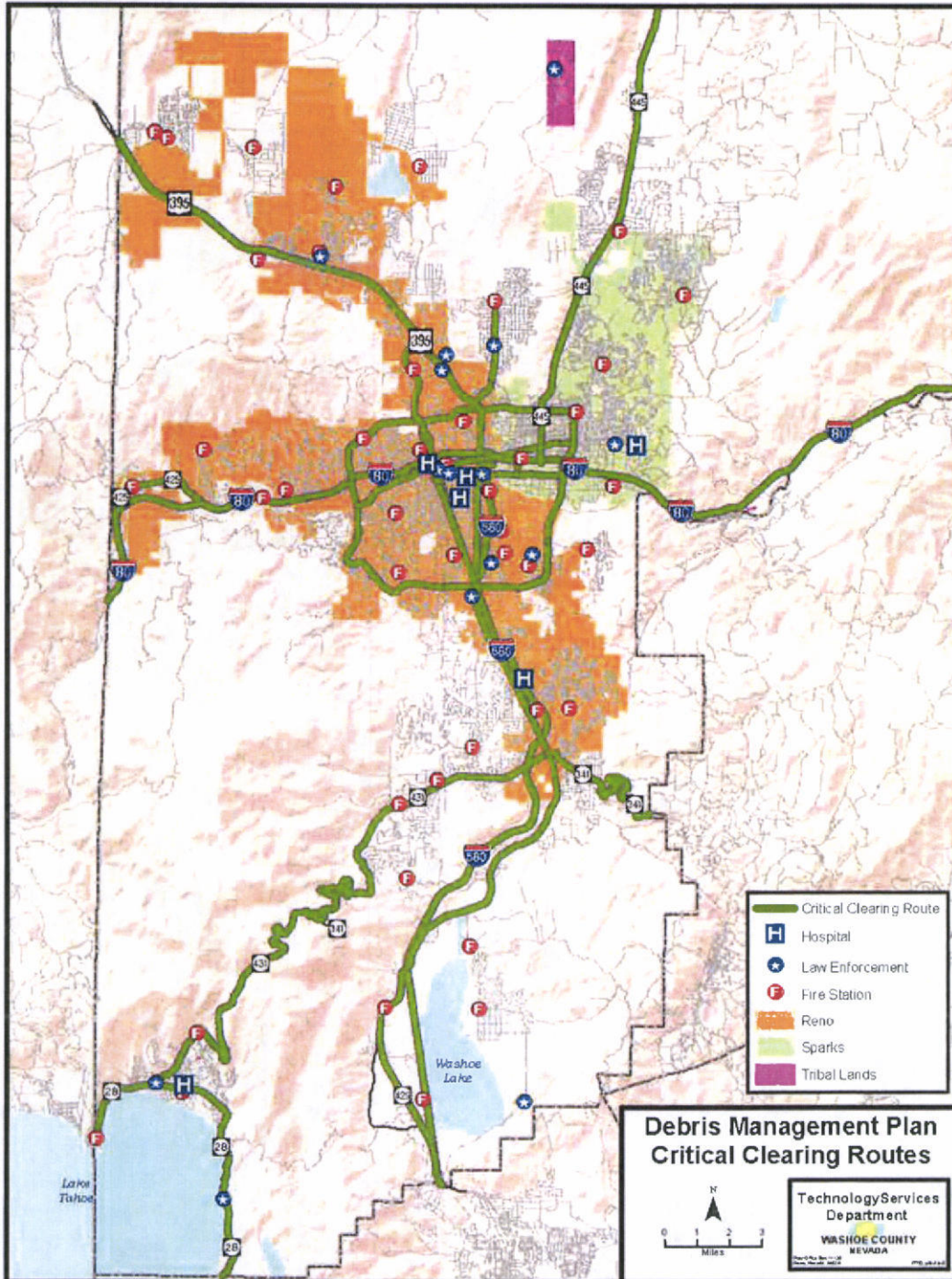
Appendix B Authorities

Jurisdiction	Solid Waste Code	Emergency Management Code
Washoe County	Solid Waste Management Plan: Sections 010 through 090	Washoe County Code 65.300
City of Reno	City of Reno Administrative Code 5.90 – Collection and Transportation of Solid Waste and Recyclable Materials 10.08 – Accumulation and Disposal of Solid Waste	City of Reno Administrative Code 8.34 – Emergency Management
City of Sparks	City of Sparks City Charter Sparks Municipal Code 7.12 – Collection of Garbage and Refuse Sparks Municipal Code 7.40 – Hazardous Materials	City of Sparks City Charter Sparks Municipal Code 1.30.010 – Emergency Response Plan Sparks Municipal Code 2.20 – Emergency and Disaster Relief
Pyramid Lake Paiute Tribe	Pyramid Lake Paiute Triune Utility District Solid Waste Ordinance No. 52	Pyramid Lake Paiute Tribe Emergency Services
Reno-Sparks Indian Colony	Reno-Sparks Indian Colony Solid Waste Ordinance No. 46	Reno-Sparks Indian Colony Emergency Services

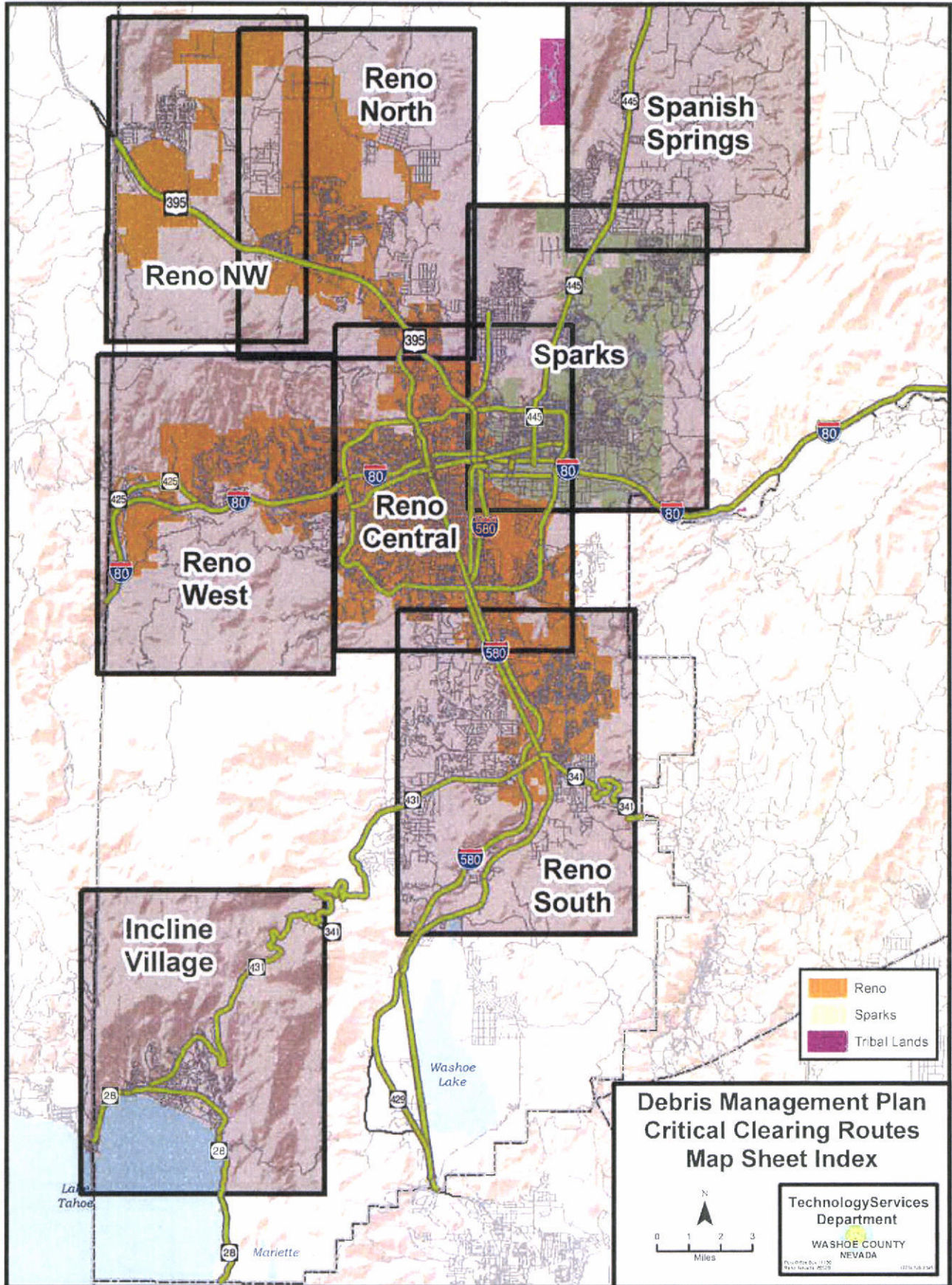
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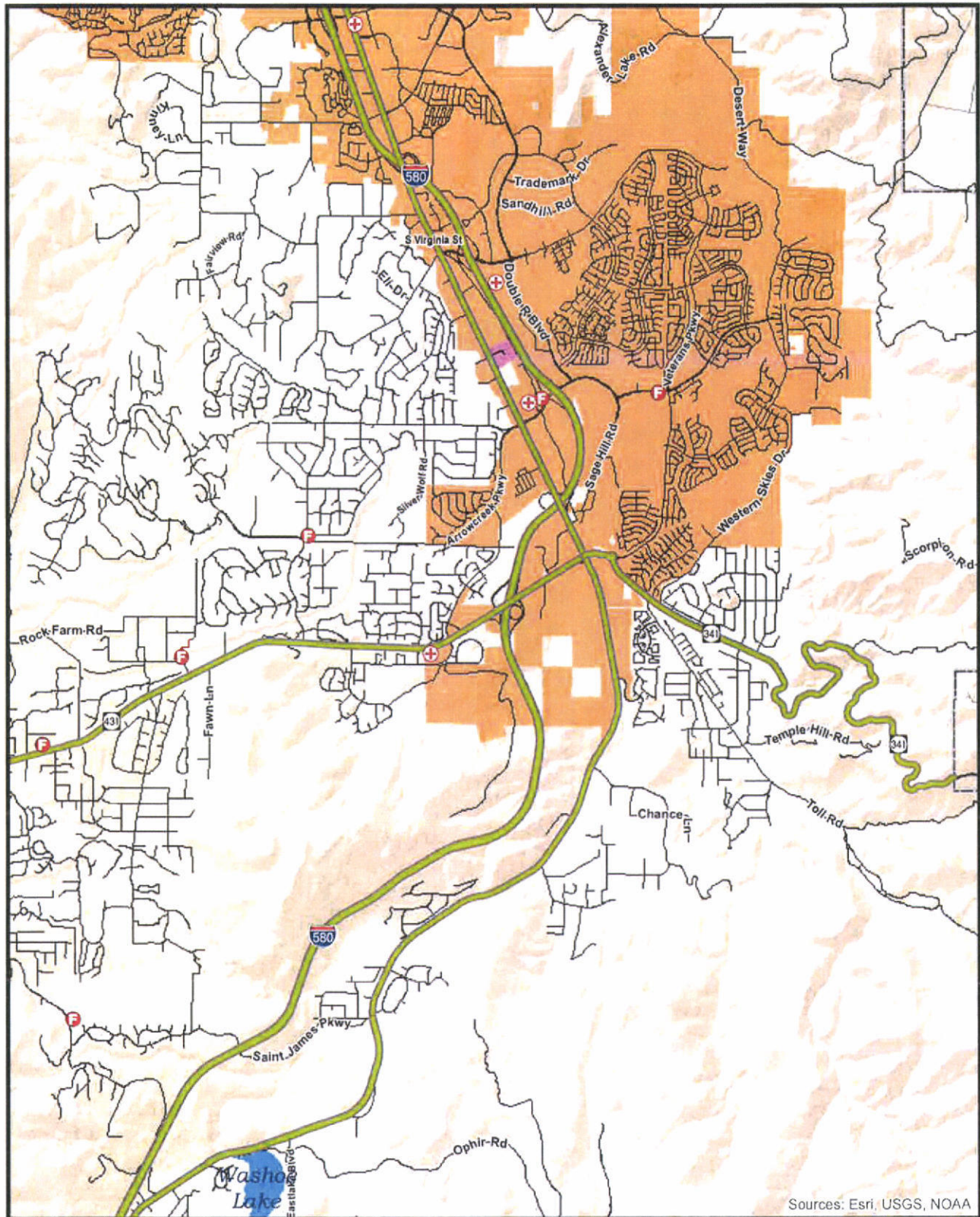


Appendix C Critical Routes and Facilities



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Sources: Esri, USGS, NOAA

Debris Management Plan Critical Clearing Routes Reno South

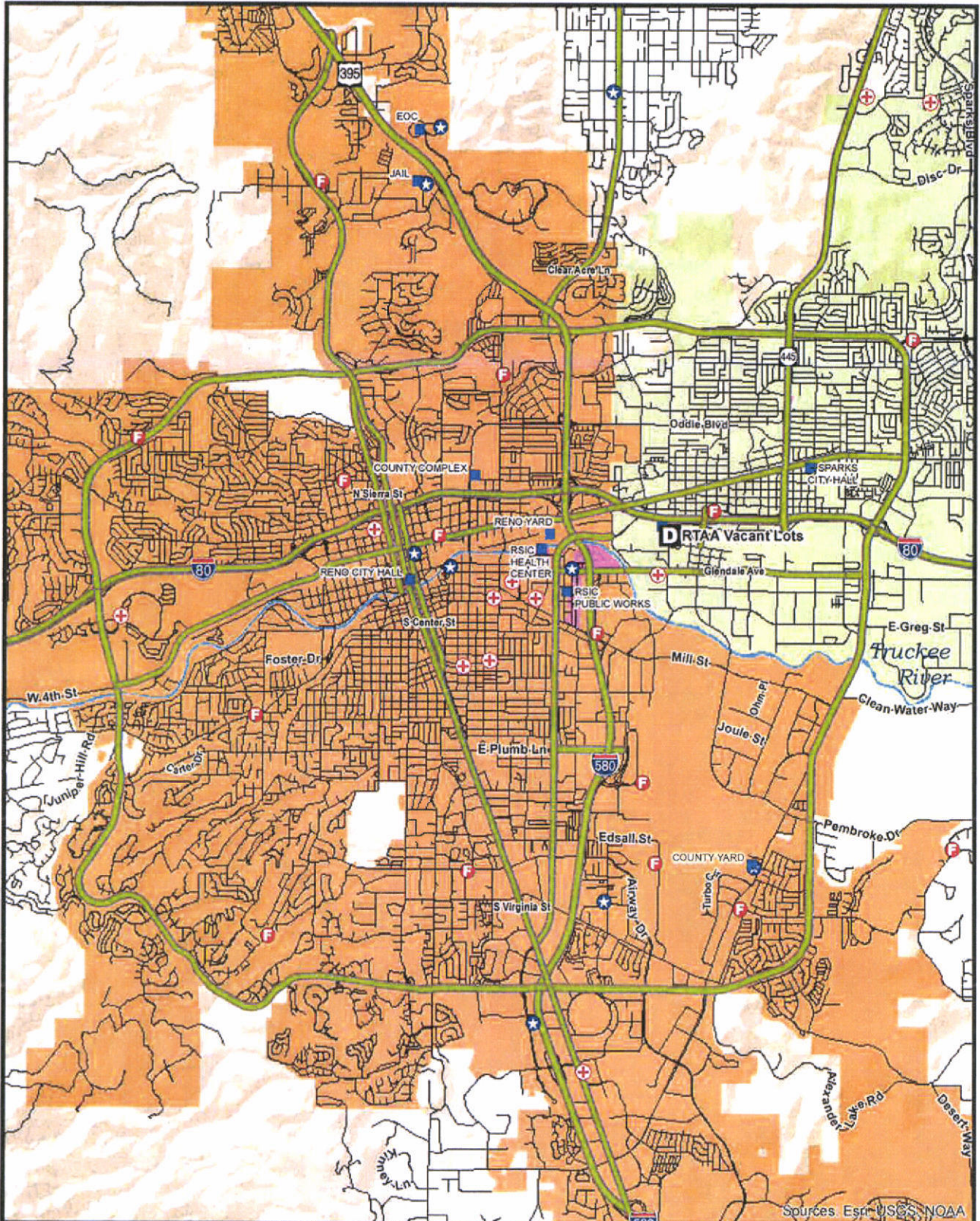


- Critical Clearing Route
- Government Facilities
- TDSR
- Urgent/Acute Health Care
- Reno
- Law Enforcement
- Sparks
- Fire Station
- Tribal Lands

**Technology Services
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**WASHOE COUNTY
NEVADA**

Plan 01184 Rev. 01/10
Base File: 04/03
01/15/10/2010



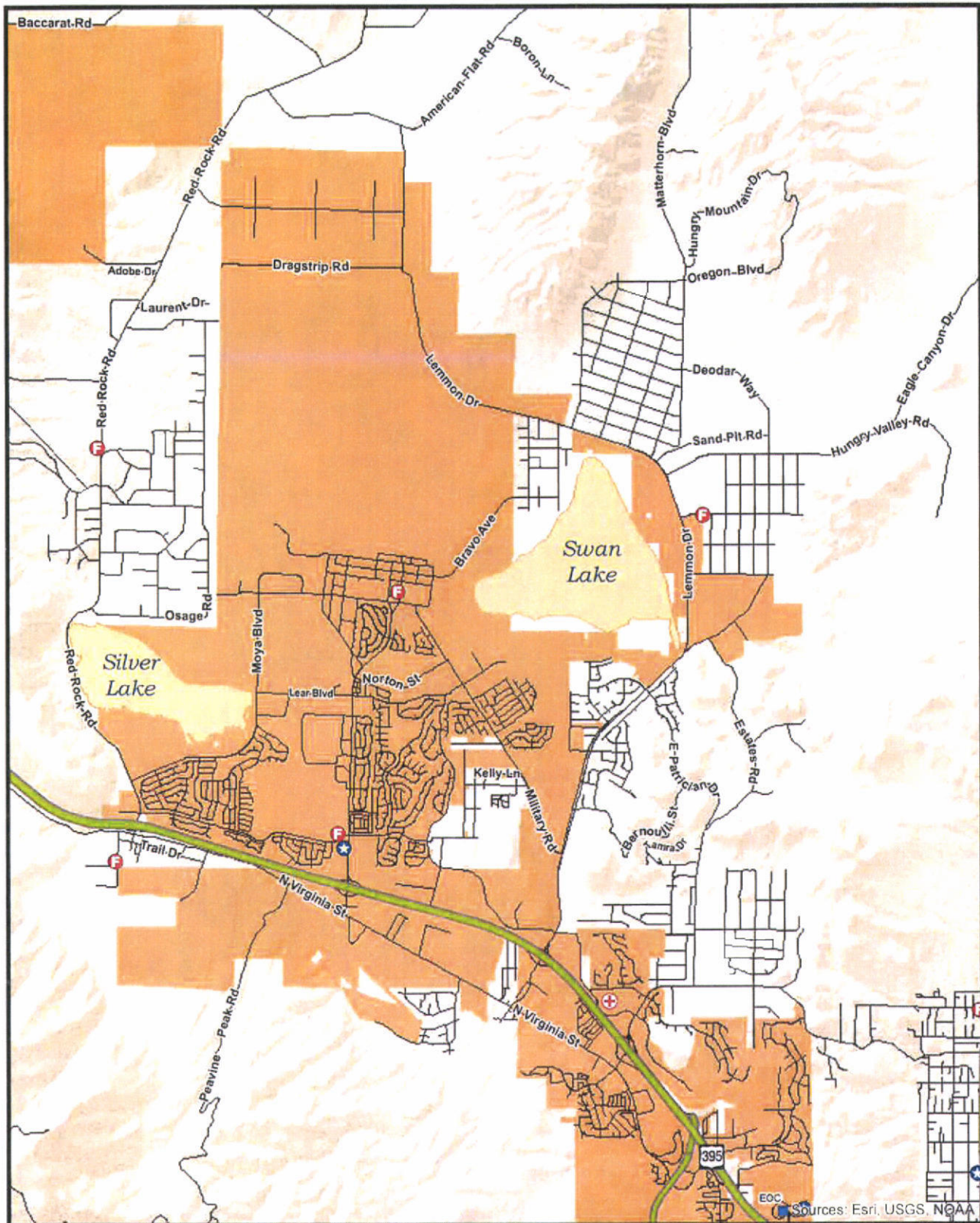
**Debris Management Plan
Critical Clearing Routes
Reno Central**



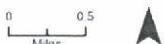
- Critical Clearing Route
- TDSR
- Reno
- Sparks
- Tribal Lands

- Government Facilities
- Urgent/Acute Health Care
- Law Enforcement
- Fire Station

**Technology Services
Department**
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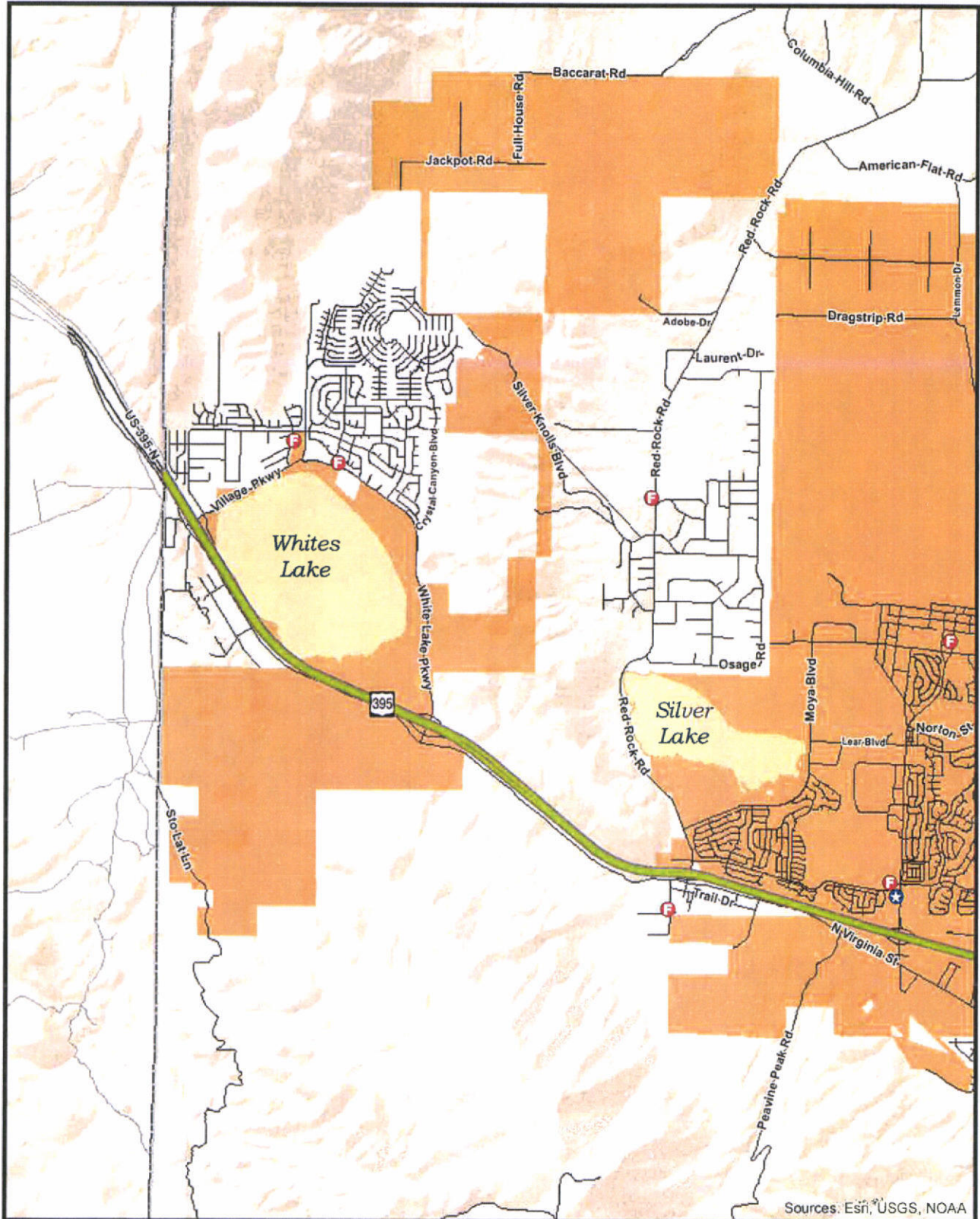


**Debris Management Plan
Critical Clearing Routes
Reno North**











- Critical Clearing Route
- TDSR
- Reno
- Sparks
- Tribal Lands
- Government Facilities
- Urgent/Acute Health Care
- Law Enforcement
- Fire Station

**TechnologyServices
Department**
WASHOE COUNTY
NEVADA
Map Date: 4/11/17
Map Source: ESRI
011-338-2141



Sources: Esri, USGS, NOAA

**Debris Management Plan
Critical Clearing Routes
Reno NW**

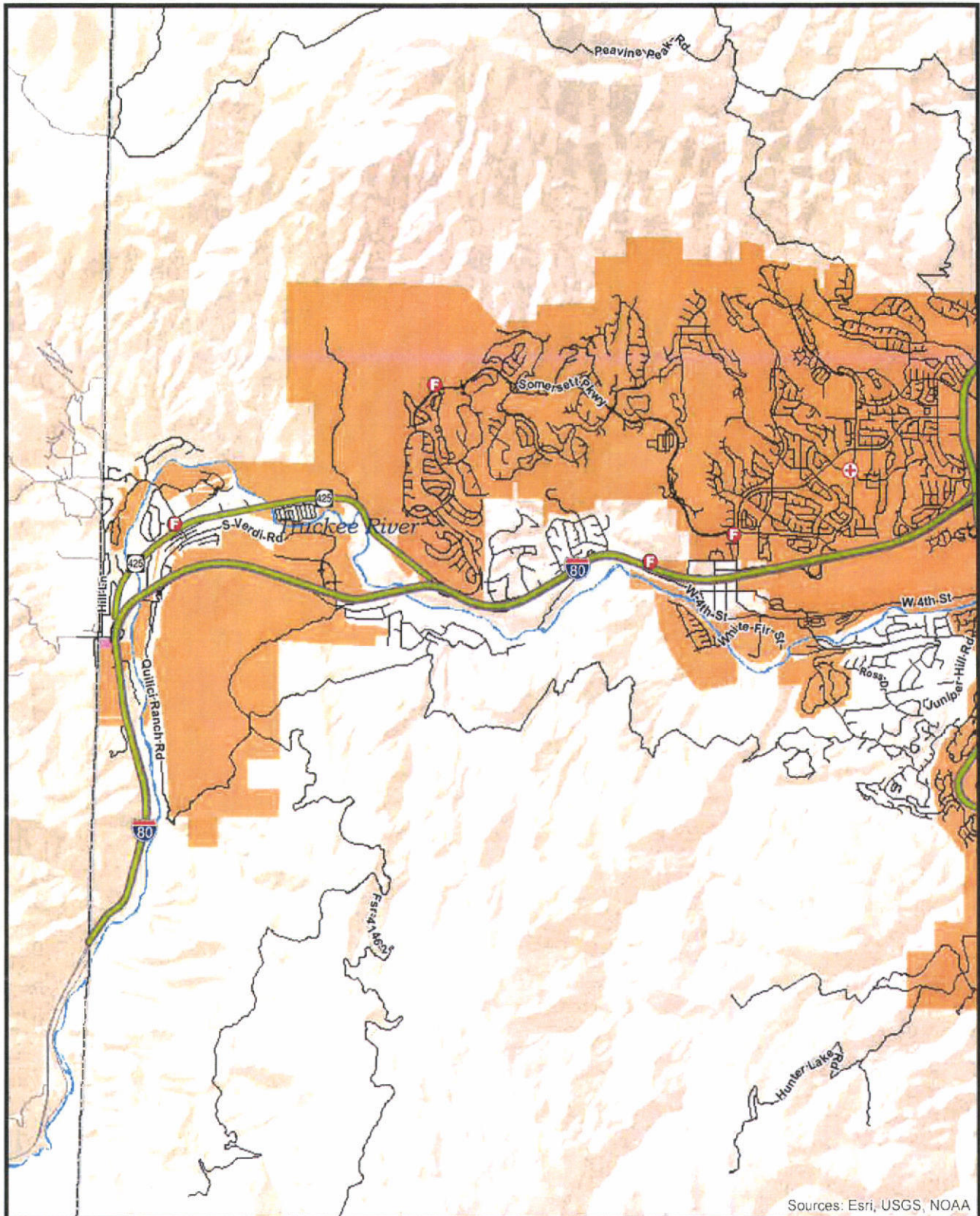
-  Critical Clearing Route
-  TDSR
-  Reno Sparks
-  Tribal Lands
-  Government Facilities
-  Urgent/Acute Health Care
-  Law Enforcement
-  Fire Station

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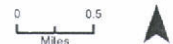
Post Office Box 1118
Reno, Nevada 89502

(775) 335-2300



Sources: Esri, USGS, NOAA

Debris Management Plan Critical Clearing Routes Reno West

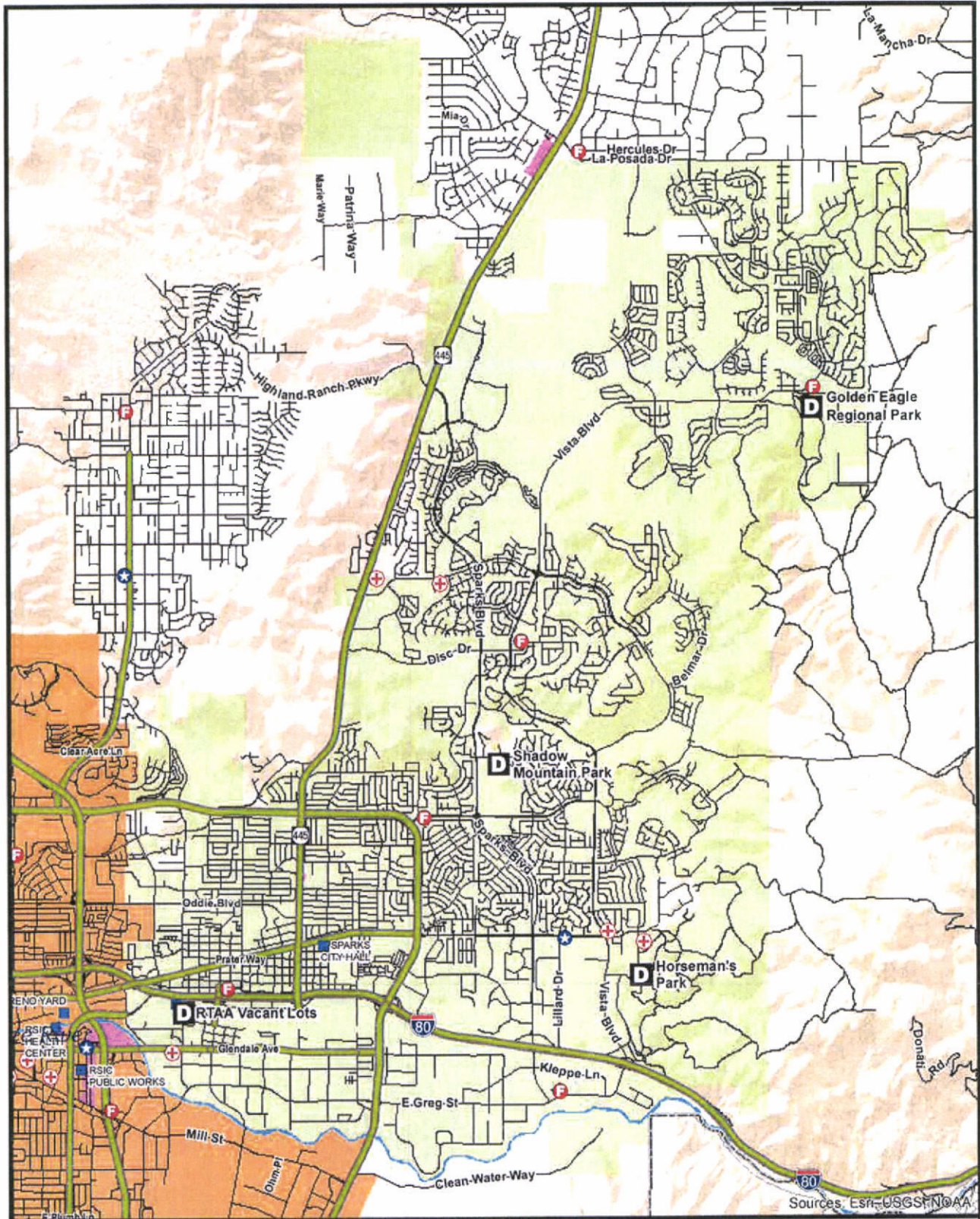


- Critical Clearing Route
- TDSR
- Reno Sparks
- Tribal Lands
- Government Facilities
- Urgent/Acute Health Care
- Law Enforcement
- Fire Station

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Project No. 15-112
 Date: 04/20/17



Debris Management Plan Critical Clearing Routes Sparks

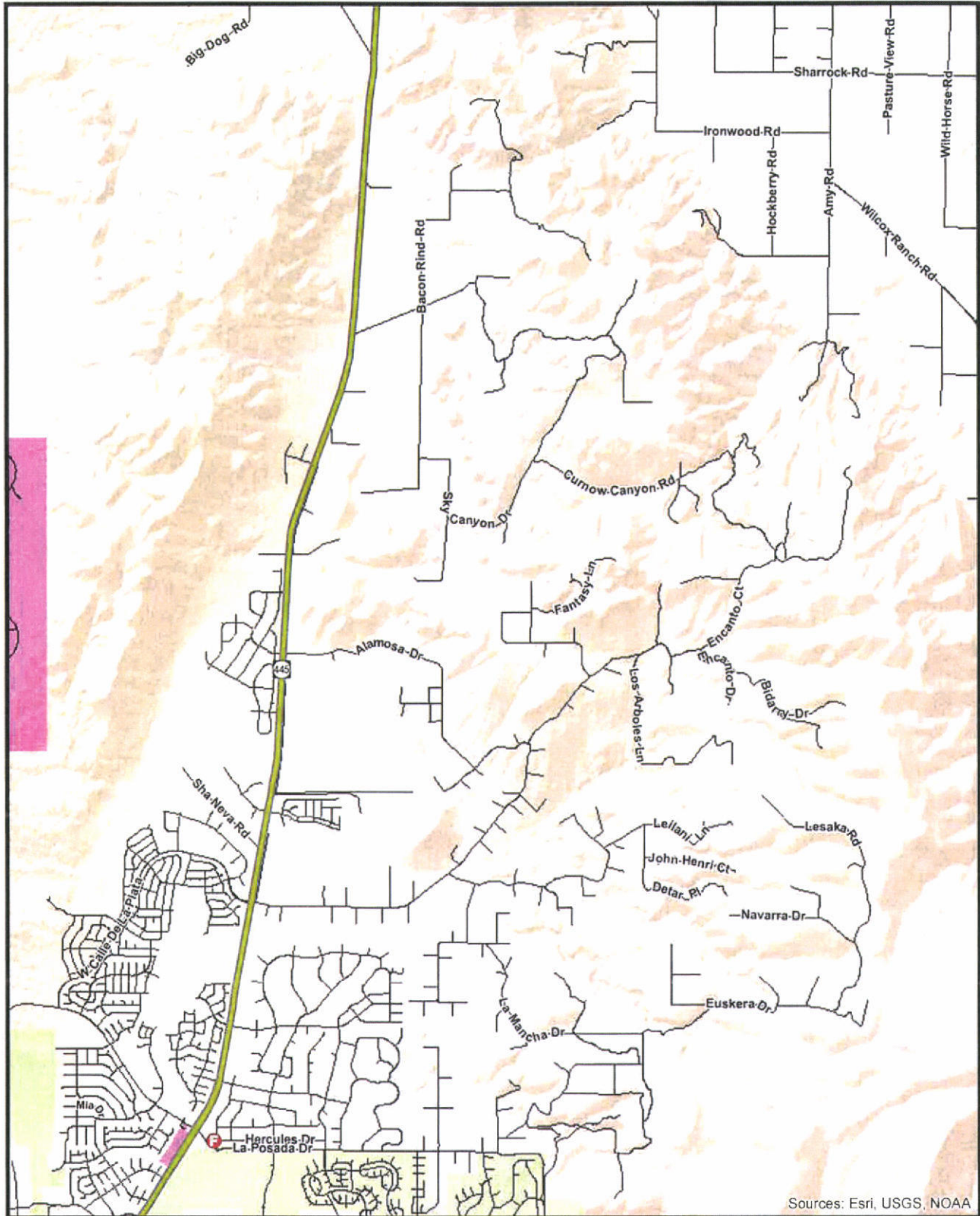


- Critical Clearing Route
- D TDSR
- Reno
- Sparks
- Tribal Lands
- Government Facilities
- + Urgent/Acute Health Care
- * Law Enforcement
- F Fire Station

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Project No. 1120
 Date: 4/20/2011
 File: 1120_001



Sources: Esri, USGS, NOAA

Debris Management Plan Critical Clearing Routes Spanish Springs



- Critical Clearing Route
- Government Facilities
- TDSR
- Urgent/Acute Health Care
- Reno Sparks
- Law Enforcement
- Tribal Lands
- Fire Station

Technology Services Department

WASHOE COUNTY
NEVADA

Print Date: 4/20/17
Print Number: 0000

(775) 338-3346



Sources: Esri, USGS, NOAA

Debris Management Plan Critical Clearing Routes Incline Village



- Critical Clearing Route
- TDSR
- Reno
- Sparks
- Tribal Lands
- Government Facilities
- Urgent/Acute Health Care
- Law Enforcement
- Fire Station

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NEVADA

Project No. 11110
 Date: 4/20/2017



Appendix D Debris Contacts, Contracts, and Agreements

1 Debris Management Task Force

Task Force Position	Name & Title	Agency & Department	Contact Information
Debris Manager	Eric Crump, Operations Director	CSD, Operations, Parks	O=(775) 328-2182 ECrump@washoecounty.us
Deputy Debris Manager	David Gonzales, Equipment Services Superintendent	CSD, Operations	O=(775) 328-2121 DGonzales@washoecounty.us

Depending on the scale of the event, the following additional positions may be added to the Debris Management Task Force:

- Debris Services Coordinator
- Debris Transportation Coordinator
- Contract Oversight Coordinator
- FEMA Debris Task Force Leader
- USACE Debris Mission Manager

Additional emergency contact information can be accessed through the County Emergency Management Department.

2 Regional Partner Debris Management Coordinators

Task Force Position	Name & Title	Agency & Department	Contact Information
Washoe County	Aaron Kenneston	Washoe County Emergency Management	(775) 337-5898 AKenneston@washoecounty.us
City of Reno	Bob Leighton	Reno Emergency Management	(775) 813-8412 leightonr@reno.gov
City of Sparks	Neil Krutz	Sparks Emergency Management	(775) 353-1633 nkrutz@cityofsparks.us
Pyramid Lake Paiute Tribe	Don Pelt	Pyramid Lake Emergency Manager	(775) 560-4417 dpelt@plpt.nsn.us
Reno-Sparks Indian Colony	David Hunkup	RSIC Emergency Manager	(775) 785-1373 dhunkup@rsic.org



3 Existing Contracts and Agreements

The Regional Partners have entered into the following mutual aid agreements (MAAs), debris removal contracts, debris removal scopes of work, and legal agreements:

Title	Organizations	Dates	Summary
WM Franchise Agreement	Washoe County, City of Reno, City of Sparks	2016	<ul style="list-style-type: none">Regular waste and garbage disposal, Emergency Debris Disposal Agreements
AGC Emergency Services	Washoe County, City of Reno, City of Sparks	2016	<ul style="list-style-type: none">The Contractors Auxiliary is a partnership between the Sheriff's Office and the AGC to provide vital services and equipment during the time of emergency, such as floods, earthquakes, mud slides and other natural disasters.
Nevada Intra State Mutual Aid System	All 17 Counties	2016	<ul style="list-style-type: none">The Nevada Intrastate Mutual Aid System (NIMAS) is hereby established for the provision of mutual aid during the response to and recovery from an emergency or disaster; any participant may request intrastate mutual aid before, during or after a declared or undeclared emergency or disaster for:<ul style="list-style-type: none">response, mitigation or recovery activities related to the emergency or disaster.
Emergency Management Assistance Compact (EMAC)	All 50 states, the District of Columbia, Puerto Rico, Guam, and the U.S. Virgin Islands	1996	<ul style="list-style-type: none">EMAC offers assistance during governor-declared states of emergency through a responsive, straightforward system that allows states to send personnel, equipment, and commodities to help disaster relief efforts in other states.



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix D: Debris Contacts, Contracts, and Agreements

4 Franchise Haulers

Company Name	Contact Name	Phone
Waste Management	Waste Management Representative	(775) 329-8822

5 Private Contractors

For example, vegetative collection and hauling, management and reduction, C&D collection and hauling, final disposal, tree operations, specialty removal, restoration, monitoring.

Pre-Qualified (Y/N)?	Company Name	Contact Name & Title	Specialty	Contact Information
Y	Frank Lepori Construction	Jesse Steverman	Debris Removal, Transport	O= 775-221-0186
Y	Granite Construction Company	Donavin Greenwell	Debris Removal, Transport	O= 775-813-1032
Y	PAR Electric	Ray Taft	Electronics, Repair, Construction	O= 775-745-4300
Y	Q & D Construction	Roy Haliburton	Debris Removal, Transport	O= 775-302-6342
Y	Pyramid Materials Inc.	Pete McHenry	Debris Removal, Transport	O= 775-384-7258
Y	Quickspace	Gene Temen	Storage, Containers, Buildings	O= 775-742-2053
Y	NV Energy	Jim Reagan	Debris Removal, Transport Storage, Containers, Buildings	O= 775.834.4580
Y	Reno Iron Works	Bill Pelter	Debris Removal, Transport	O= 775-691-5163

Jurisdiction-specific finance and procurement departments maintain a list of trade-related contractors that are typically used for small projects and as a resource for some types of emergencies. Companies on that list do not typically have heavy equipment.

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Appendix E Debris Forecasting and Estimation

Debris Estimation Methodology

Adapted from Federal Emergency Management Agency (FEMA) 329 - Debris Estimating Field Guide.

A key consideration in defining FEMA's estimate requirements is how the estimate will be used, e.g., if a debris estimate is only used for a Preliminary Damage Assessment (PDA), the level of accuracy and precision required is less than that required to develop a Project Worksheet. The formulas, assumptions, and conversions used must be applicable to the circumstances of the disaster and be consistently applied.

There are several methods available to develop debris estimates. The method selected by the FEMA Debris Task Force Leader should be based on the accuracy, precision, and schedule requirements of the operation, and by the availability of resources such as personnel and equipment.

- Ground measurements of debris can be taken to develop estimates, using visual observation and detailed data collection with equipment such as measuring tapes and global positioning system units.
- Aerial and satellite photographs of areas taken before and after the disaster event may be used to estimate debris quantities and types, based on the structures, features, and debris observed in the photos.
- Computer models, including those developed by the U.S. Army Corps of Engineers (USACE) and FEMA.

A combination of estimating methods may be used, if necessary, to meet the requirements of the operation.

Computer Models

See FEMA 329, pages 15-16 for more detailed information.

There are a variety of computer models that have been developed for estimating debris. FEMA developed the Hazards U.S. Multi-Hazard (HAZUS-MH) software which includes models for estimating potential damages and losses (including debris generated) from floods, earthquakes, and hurricanes. Additional information can be found at (<http://www.fema.gov/plan/prevent/hazus/#1>).

Debris estimates generated by models are based on items such as:

- Historic information on debris quantities generated by similar disaster events;
- Geographic information system (GIS) data on topography, land use, and level of development;
- Information on the disaster, such as the extent of flooding; and
- Formulas that mathematically combine the information to generate an estimate.



USACE Formula

The modeling methodology described below was developed by the USACE Emergency Management staff using actual data from Hurricanes Fredrick, Hugo, and Andrew. The estimates produced by the model are predicted to have an accuracy of + or – 30% (accuracy is limited due to the many variables inherent to the debris removal process). This model has been selected due to the lack of forecasting techniques based on the types of events likely to occur within the region. Hurricane events often result in total devastation of structures, a similar effect is predicted to occur as a result of a worst-case large Cascadia Subduction Zone Earthquake event.

The formula created by USACE requires five variables:

- **P – Population of the affected area**
- **H – Number of persons per household** (three is used for this model) or $H = P / 3$
- **C – Category of the hurricane from the Saffir-Simpson Hurricane Wind Scale.** This expresses debris quantity in cubic yards (CY) per household by hurricane category and includes the house and its contents, and land foliage.

Hurricane Category	Value of C Factor
1	2 [yd ³]
2	3 [yd ³]
3	26 [yd ³]
4	50 [yd ³]
5	80 [yd ³]

- **V – Vegetation Characteristic Multiplier.** This acts to increase the quantity of debris by adding vegetation including shrubbery and trees on public rights-of-way.

Vegetative Cover	Value of Multiplier
1	1.1
2	1.3
3	1.5

- **B –Business / Commercial / Industrial Multiplier (B):** This takes into account areas which are not solely single-family residential, but includes small retail stores, schools, apartments, shopping centers, and light industrial and manufacturing facilities. Built in to this multiplier is the offsetting commercial insurance requirement for owner/operator salvage operations.

Business Density	Value of Multiplier
Light	1.0
Medium	1.2
Heavy	1.3

- **S – Storm Precipitation Multiplier (S).** This takes into account either a “wet” or “dry” storm event. With a “wet” storm, trees will up-root, generating a larger volume of storm generated debris (for Category 3 or greater storms only).



Precipitation Characteristics	Value of Multiplier
None to light	1.0
Medium to Heavy	1.3

Assumptions: Q = Quantity of predicted debris in cubic yards

- H = Population / 3 (three persons per household)
- C = 26 cubic yards per household (category 3 hurricane)
- V = 1.3 (Medium Vegetative Coverage)
- B = 1.2 (Medium Commercial Density)
- S = 1.3 (Medium to Heavy Precipitation)

These assumptions yield the following equation: $Q = H * C * V * B * S$

Debris removed from large scale events primarily consist of two broad categories, clean woody and construction and demolition debris (C&D). The clean debris will come early in the removal process as yards and rights-of-way are cleared.

Most common generated debris will consist of the following:

- 30% clean woody debris
- 70% mixed C&D. The 70% mixed C&D can be broken down as follows:
 - 42% burnable but requires sorting
 - 5% soil
 - 15% metals
 - 38% landfilled

Ground Measurements

See FEMA 329, pages 6-8 for more detailed information.

The basic steps and considerations that FEMA will take when completing debris estimates using ground measurements include:

1. Defining the area covered by the debris estimate.
2. Determining whether comprehensive debris measurements (e.g., street-by-street) or measurement of a representative sample is appropriate for the estimate requirements.
3. Identifying and obtain the personnel and equipment necessary to complete the estimate.
4. Engaging the State and applicant in the ground measurement process.

The applicant should make themselves available to the FEMA Debris Task Force to provide information necessary for the estimate, such as locations of public property and rights-of-way and planned debris removal activities.



Additional considerations regarding debris estimates based on ground measurements include:

- Ensure the measurements include all eligible debris
- Recognize that debris may undergo changes in volume during the handling process
- One acre of debris 10 feet high converts to 16,133 CY

$$\frac{43,560 \text{ SF} \times 10 \text{ FT}}{27} = 16,133 \text{ CY}$$

FEMA Debris Technical Specialists will approximate the volume of debris piles using cubes when conducting ground measurements, as opposed to using formulas to approximate the volumes of debris piles as cones or pyramids

Building and Residences

See FEMA 329, pages 9-12 for more detailed information.

General Building Formula

To estimate the amount of debris generated by a building, multiply the building length, width, and height in feet by a constant of 0.33 to account for the air space in the building, and divide the resulting number by 27 to convert from cubic feet to cubic yards:

$$\frac{\text{Length} \times \text{Width} \times \text{Height} \times 0.33}{27} = \text{CY}$$

Single Family Residence Formula

FEMA conducted an empirical study following Hurricane Floyd in North Carolina in 1999, and developed a formula for estimating debris associated with demolished single family residences:

$$\text{Length (ft.)} \times \text{Width (ft.)} \times \text{S (no. of stories)} \times 0.20 \times \text{vegetative cover multiplier (VCM)} = \text{CY}$$

The building square footage used in the formula is the total living space at and above ground level and includes attached garages.

FEMA developed VCMs for use in combination with the formula for a demolished single family residence, to estimate the quantity of vegetative debris that should be added to the quantity of debris estimated for demolished homes within a subdivision or neighborhood:

- Light (1.1 multiplier) includes new home developments where more ground is visible than trees and canopy cover is sparse
- Medium (1.3 multiplier) generally has a uniform pattern of open space and tree canopy cover, and is the most common description for vegetative cover
- 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.

Example: A 2,000 square foot home would have the following CY based on the VCM:



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix E: Debris Forecasting and Estimation

No VCM	= 400 CY
Light VCM	= 440 CY
Medium VCM	= 520 CY
Heavy VCM	= 600 CY

Personal Property Placed on Public Rights-of-Way

FEMA and USACE have conducted empirical studies on the average amount of personal property brought to public rights-of-way from residences following flooding disasters:

- Personal property for a slab on grade home: 25–30 CY
- Personal property for a home with a basement: 45–50 CY

Conversion Factors

USACE has developed several conversion factors for converting between tons and CYs of debris that FEMA has determined are reasonable:

- Construction and demolition debris: 1 ton = 2 CY
- Mixed debris: 1 ton = 4 CY
- Vegetative debris:
 - Hardwoods: 1 ton = 4 CY
 - Softwoods: 1 ton = 6 CY

Actual conversion values for a particular disaster may be very different; therefore, field tests coordinated by FEMA with the State and applicant may be necessary to confirm an appropriate conversion factor.

Aerial Estimates

See FEMA 329, pages 13-15 for more detailed information.

Applications where debris estimates based on aerial or satellite photography may be appropriate include:

- Rough estimates that must be developed quickly, such as for a PDA.
- Validation or extrapolation of debris estimating information obtained through ground measurements or computer model.
- Debris estimates for areas that are difficult to access.
- Cases where it is difficult to gain a good perspective on debris quantities from the ground, e.g., estimating the size of very large debris piles at debris management sites.

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Appendix F Debris Management Checklists

	Action	Supplemental Information
Pre-Incident Phase		
<input type="checkbox"/>	Become familiar with federal debris removal criteria and guidelines.	<i>FEMA 325, Debris Management Plan</i>
<input type="checkbox"/>	Develop and maintain the Regional Debris Management Plan in coordination with neighboring jurisdictions.	<i>FEMA 325, Debris Management Plan Review Job Aid</i>
<input type="checkbox"/>	Enter into mutual aid agreements related to debris management.	<i>Appendix D - Debris Contacts, Contracts, and Agreements</i>
<input type="checkbox"/>	Compile list of recyclers available in the region.	
<input type="checkbox"/>	Prepare contractor and debris hauler agreements.	<i>Appendix D - Debris Contacts, Contracts, and Agreements</i>
<input type="checkbox"/>	Pre-identify debris removal and processing equipment needs.	
<input type="checkbox"/>	Coordinate with Regional Partner Emergency Management Programs to ensure that debris management activities are considered in emergency plan developments and updates.	
<input type="checkbox"/>	Provide training to Debris Management Team participants as well as appropriate local and emergency personnel on FEMA 325 requirements.	<i><u>IS-632.A: Introduction to Debris Operations, IS-634: Introduction to FEMA's Public Assistance Program, E202: Debris Management Planning for State, Tribal and Local Officials,</u></i>
<input type="checkbox"/>	Identify potential temporary debris storage and reduction sites and public depot options and collect baseline data.	<i>Appendix U - Temporary Debris Storage and Reduction Site Requirements</i>
<input type="checkbox"/>	Establish or expand load-checking programs.	
<input type="checkbox"/>	Develop incentives for recycling/reuse.	
<input type="checkbox"/>	Establish connections with utilities.	
<input type="checkbox"/>	Set up records retention system and archives.	
<input type="checkbox"/>	Provide public information/notification.	<i>See Appendix P - Public Information Strategy</i>



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix F: Debris Management Checklists

Response Phase		
<input type="checkbox"/>	Provide quality oversight of debris operations to ensure compliance and maximize reimbursement.	
<input type="checkbox"/>	Work with the MAC group to determine the need for debris clearance, removal, and disposal contractors and debris monitors	
<input type="checkbox"/>	Coordinate debris management issues from the emergency operations center.	
<input type="checkbox"/>	Secure all authorizations necessary for debris removal activities.	
<input type="checkbox"/>	Coordinate Debris Management Team efforts and assign roles and responsibilities as appropriate.	
<input type="checkbox"/>	Ensure compliance with all federal, state, and local safety, environmental, historical preservation, and other applicable laws, regulations, and policies. (including all contractors and force account labor)	<i>Guide for Federal Disaster Recovery Assistance Applicants</i>
<input type="checkbox"/>	Oversee rapid damage assessment and establish debris clearance priorities	
<input type="checkbox"/>	Oversee initial damage assessments and determine the number of Debris Management Sites (DMS[s]) needed	
<input type="checkbox"/>	Develop and review all debris management contracts in coordination with Purchasing Division, including stand by contracts with pre-identified and pre-qualified contractors.	
<input type="checkbox"/>	Develop a debris removal strategy including local work assignments and priorities.	
<input type="checkbox"/>	Work with the MAC group to determine priority DMSs	
<input type="checkbox"/>	Identify debris removal and processing equipment needs.	
<input type="checkbox"/>	Coordinate debris issues with Regional Partners and private agencies involved with the debris cleanup operation.	
<input type="checkbox"/>	Coordinate with utilities and Road Maintenance to promote debris clearance and road access.	
<input type="checkbox"/>	Coordinate debris management activities with FEMA, the USACE, EPA, DEM, NDEP, and State of Nevada, as needed	
<input type="checkbox"/>	Appoint a Field Operations Coordinator, if necessary, to be responsible for daily operational control of temporary debris storage and reduction sites.	
<input type="checkbox"/>	Activate mutual aid agreements and coordinate local resources and contractors to support disaster debris management activities.	<i>See Appendix D – Debris Contacts, Contracts, and Agreements</i>
<input type="checkbox"/>	Execute prequalified contracts on behalf of the municipalities	



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix F: Debris Management Checklists

<input type="checkbox"/>	Appoint and supervise Field Inspection Team personnel responsible for monitoring all contractor debris removal and disposal operations.	
<input type="checkbox"/>	Monitor Debris Contractors, load inspections at temporary debris storage and reduction sites and other off-site areas, and preparation of Load Sheets at temporary debris storage and reduction sites or other impacted areas.	
<input type="checkbox"/>	Establish local work assignments and priorities.	
<input type="checkbox"/>	Keep track of field site assignments and progress of the initial debris clearance from public roadways and critical facilities.	
<input type="checkbox"/>	Coordinate daily morning meetings that include key personnel from the Regional Partners and debris management contractors to determine daily objectives and a discussion of operational progress and best practices moving forward.	
<input type="checkbox"/>	Coordinate with public information staff to: <ul style="list-style-type: none">• Ensure media reports on debris operations are accurate and timely.• Develop messaging associated with debris removal and disposal activities• Inform the public about debris removal and disposal procedures.	<i>See Appendix P - Public Information Strategy</i>
<input type="checkbox"/>	Ensure the proper documentation of debris estimates, procurement information, contracts, invoices, and monitoring information	
	Report on debris removal and disposal progress, and prepare status briefings for the Emergency Operations Center and other local officials.	
	Coordinate with the building inspectors regarding: <ul style="list-style-type: none">• Demolition of private structures.• Removing debris from private property.• Local law and / or code enforcement agencies.• Historic and archaeological sites.• Qualified environmental contractors to remove hazardous waste such as asbestos and lead based paint.• Abandoned vehicles.• Receipt of Right-of-Entry Agreements with landowners.	



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix F: Debris Management Checklists

Recovery Phase		
<input type="checkbox"/>	Release mutual aid resources as soon as possible.	
<input type="checkbox"/>	Ensure an orderly demobilization of temporary debris storage and reduction sites in accordance with demobilization plans.	<i>ICS Form 221 – Demobilization Plan</i>
<input type="checkbox"/>	Conduct a post-event debriefing to identify success stories, opportunities for improvement, and development of the After Action Report/Improvement Plan.	
<input type="checkbox"/>	Correct response deficiencies reflected in the Improvement Plan.	
<input type="checkbox"/>	Revise any applicable emergency response plans based on the success stories and/or lessons learned during the response.	



Appendix G Debris Management Site Report

1 Introduction

The purpose of this report is to identify locations within the County that may serve as Temporary Debris Storage and Reduction (TDSR) sites following a debris-generating event. Each site will be evaluated prior to use.

2 Criteria

The following criteria will be used to evaluate locations as potential TDSR sites.

2.1 Municipally Owned Property

In order to eliminate potential costs associated with acquiring, leasing, or operating on private property, Regional Partner-owned properties will be considered before exploring privately owned properties.

2.2 Proximity to High Population Density

The proximity of the surveyed location to neighborhoods, schools, businesses, high-traffic thoroughfares, and other areas of high population density are carefully evaluated. TDSR sites located near high population density areas increase traffic congestion and create logistical and safety hazards for the community, especially immediately following an event. To that end, the TDSR sites recommended are done so with as minimal an intrusion to residents as possible.

2.3 Ingress/Egress

Safe and adequate ingress and egress in and out of the sites, along with efficient road access to routes leading to and from the sites, are critical to ensure efficient turnaround of debris collection vehicles.

2.4 Adherence to All Local, State, and Federal Rules, Regulations and Ordinances

Local, state, and federal rules, regulations, and ordinances should be followed, including those pertaining to environmental quality and noise control. Though some disposal regulations are lifted following a State of Emergency, it is critical that all TDSR site operations meet Occupational Safety and Health Administration (OSHA) safety requirements, as well as the operational procedures outlined by the Nevada Department of Environmental Protection (NDEP).

2.5 Proximity to Natural Running Water or Portable Water Wells

Before TDSR sites can be permitted for use, NDEP must be notified so they can perform a property assessment. The presence of any natural stream, creek, pond, or lake, as well as any potable water wells, can hinder the permitting of a property.



4 Investigation of Property Suitability Form

TEMPORARY DEBRIS STORAGE AND REDUCTION SITE

Date of Site Investigation:

Ownership of Property City County Tribal Private
(check one): Other Ownership (describe)

Property Name:

Property Owner's Name:

Property Owner's Address:

Property Owner's Phone No.:

Estimated Property Size:

Useable

Acreage:

Site GPS

Coordinates:

N:

W:

Site Preparation: High Medium Low

Suitability to Wet Weather: High Medium Low

Ability to Serve a Spatial Area: High Medium Low

Site Acceptable for What Type of Reduction Method (check all applicable): Open Burning Air Curtain Incineration
Grinding

Site's Recommended Use (check all applicable): C & D Vegetative White Goods
Other (describe):

List Numbers of Each Photograph Taken of the Property:

Landfills within 30 Miles of the Site:

Characterization of Neighboring Properties

Evaluation Factor	Comments
Property's current land use	
Any proposed future land uses	
Environmental issues	
Proximity to schools, churches, community centers	
Property topography	
Open water sources	
Ground water wells	



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Appendix G: Debris Management Site Report

Evaluation Factor	Comments
Access to electricity/sewer/water	
Soil integrity	
Surface water drainage	
Prevailing wind direction	
Ingress/egress	
Lighted area	
Site security	
Buffer distance for noise control	
Property developed	<input type="checkbox"/> Yes <input type="checkbox"/> No
Property adjacent to airport/airfield	<input type="checkbox"/> Yes <input type="checkbox"/> No
Site able to handle large volume of trucks	<input type="checkbox"/> Yes <input type="checkbox"/> No

Site Sketch or Aerial Map

Identify major features of the site (roadways, barriers to use, spatial area). If only a portion of the property is suitable for use, please identify what area(s) will be used and what areas will not.

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Appendix H Debris Monitoring Tools

Monitoring Debris Operations

Comprehensive monitoring of debris operations from collection through disposal is critical to ensure the Region's debris management operations are efficient, effective, and most importantly, eligible for Federal Emergency Management Agency (FEMA) public assistance funding. Monitoring activities involves the constant observation of debris management work crews to ensure that workers are performing eligible work in accordance with Public Assistance guidelines, and helps to verify compliance with all applicable federal, state, and local regulations.

Activate Monitoring Firm and Debris Removal Contractors

The REOC will utilize the damage assessments to determine whether to activate the monitoring firm and debris removal contractors. Once the monitoring firm and debris removal contractors are activated, each contractor should review an updated street list, debris collection zone maps (Appendix W) and the Health and Safety Strategy (Appendix L). The monitoring firm and debris removal contractors should begin logistical coordination and equipment ramp-up immediately upon receiving a Notice to Proceed.

During a debris generating event with regional impacts, the Debris Management Team may establish a regional TDSR site and will be responsible for coordinating appropriate monitoring activities at that site. The Regional Partners will be responsible for monitoring activities at debris sites under their control, and will coordinate with the Debris Management Team to provide trained and qualified staff to support monitoring activities at the regional site.

Table 1 outlines the responsibilities for various entities involved in debris monitoring and is adapted from FEMA Disaster Assistance Directorate Fact Sheet 9580.203. It can be found here: http://www.fema.gov/pdf/government/grant/pa/9580_203.pdf.

Entity	Responsibilities	Tasks
Local/Regional Debris Removal Contractors	Conduct debris removal operations per the terms of the contract.	<ul style="list-style-type: none"> Monitor its own day-to-day operations to ensure its contractual obligations are being met.
Local/Regional Debris Monitoring Contractors	Work for applicant to monitor debris contractor's day-to-day operations to ensure the applicants expectations and contractual requirements are being met.	<ul style="list-style-type: none"> Provide debris monitoring personnel who are trained in eligibility. Monitor operations in accordance with the contract requirements. Provide all monitoring documents as required in the monitoring contract.



Table 1 Debris Monitoring Responsibilities		
Entity	Responsibilities	Tasks
Public Assistance Applicants (Local Governments/ Metro)	Provide oversight and quality assurance of both the debris removal contract and the monitoring contract (if applicable). Request Public Assistance funds for eligible work. Ensure performance measures are met and eligible work is documented. Understand eligibility requirements and ensure work performed under the contract meets these requirements.	<ul style="list-style-type: none"> ▪ Designate project manager. <p><i>If debris removal is performed by force account labor:</i></p> <ul style="list-style-type: none"> ▪ Provide documentation to substantiate eligible debris quantities. ▪ Ensure compliance with sub-grant requirements. <p><i>If debris removal is performed under contract:</i></p> <ul style="list-style-type: none"> ▪ Ensure that debris removal contractors and monitoring contractors (if applicable) understand eligibility requirements for the debris removal operations. ▪ Ensure that only eligible debris quantities are being claimed for Public Assistance. ▪ Resolve issues or discrepancies associated with the contract.
State	Ensure grant requirements outlined in the 44 CFR are being met and that Public Assistance applicants are receiving funds for eligible costs. Responsible for monitoring the grant and sub-grant to ensure compliance with federal, state, and local laws and regulations.	<ul style="list-style-type: none"> ▪ Monitor the grant and sub-grant requirements. ▪ Ensure that the applicant is sufficiently monitoring the debris removal operation (FEMA/grantee effort). ▪ Conduct random monitoring at load sites and disposal sites to ensure compliance with grant requirements (FEMA/grantee effort). ▪ Notify sub-grantee of compliance issues and outline corrective actions (FEMA/grantee effort).
FEMA	Ensure grant requirements outlined in 44 CFR are being met. Fund eligible work. Responsible for the preparation of large project worksheets, development of the scope of work and the obligation of funds. Responsible for monitoring the grant to ensure compliance with federal, state, and local laws and regulations.	<ul style="list-style-type: none"> ▪ Develop large project worksheets in coordination with the grantee and sub-grantee. ▪ Utilize monitors to ensure that the applicant is sufficiently monitoring the debris removal operation (FEMA/grantee effort). ▪ Conduct random monitoring at load sites and disposal sites to ensure compliance with grant requirements (FEMA/grantee effort). ▪ Notify grantee/sub-grantee of compliance issues and outline corrective actions (FEMA/grantee effort). ▪ Increase or decrease monitoring efforts as necessary to ensure corrective actions are in place and operations are being effectively monitored.

See FEMA 327, *Public Assistance Debris Monitoring Guide* for more information. It can be found here: http://www.fema.gov/pdf/government/grant/pa/fema_327_debris_monitoring.pdf.



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Appendix H: Debris Monitoring Tools

Duties and Responsibilities of Debris Monitors

Table 2 Debris Monitor Duties and Responsibilities			
FEMA Debris Monitor Safety	State/Tribal Debris Monitor	Applicant Field Supervisor	Applicant Debris Tower/Site Monitor
<ul style="list-style-type: none"> Ensure safety by identifying possible health/safety risks and requiring proper field safety gear. 	<ul style="list-style-type: none"> Ensure contractor is complying with public and employee safety standards. Ensure safety requirements on State highways and roads are observed during debris operations (load limits, truck covers, etc.). 	<ul style="list-style-type: none"> Be familiar with and maintain/ implement all safety requirements. 	<ul style="list-style-type: none"> Check area for safety considerations, such as downed power lines, children playing in the area, traffic control needs, and safe operation of trucks and equipment. Implement all safety requirements.
		<ul style="list-style-type: none"> Check area for safety considerations, such as downed power lines, children playing in the area, traffic control needs, and safe operation of trucks and equipment. Implement all safety requirements. Before work begins, inspect areas to identify covered utility meters, transformers, fire hydrants, mail boxes, etc. (as a baseline to account for any damage as a result of the debris removal operations). Ensure that debris loads are contained properly before leaving the loading area. 	



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Table 2 Debris Monitor Duties and Responsibilities			
FEMA Debris Monitor	State/Tribal Debris Monitor	Applicant Field Supervisor	Applicant Debris Loading Monitor
Applicant Debris Tower/Site Monitor			
<ul style="list-style-type: none"> Verify compliance with FEMA Public Assistance Program requirements (i.e., provide guidance, timeframe requirements, and documentation and reporting requirements). 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Ensure that a reasonable level of effort is applied to the monitoring process, commensurate with the debris operations and the schedule. Ensure only eligible debris is collected for loading and hauling. 	<ul style="list-style-type: none"> Determine whether each load is to be claimed for reimbursement based on established criteria, and mark load tickets if ineligible for FEMA reimbursement. Validate eligible hazardous trees, including hangers, leaners, and stumps. Verify global positioning system (GPS) readings or an address/location for leaning trees, trees with hanging limbs, and uprooted/exposed stumps that constitute an immediate threat; a separate ticket should be written for these items if required in the contract. Do not issue tickets for trucks that arrive at pick-up sites already loaded, or partially loaded. Ensure that force account labor and debris contractor work is within the assigned scope of work.
			<ul style="list-style-type: none"> N/A



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Table 2 Debris Monitor Duties and Responsibilities				
FEMA Debris Monitor	State/Tribal Debris Monitor	Applicant Field Supervisor	Applicant Debris Loading Monitor	Applicant Debris Tower/Site Monitor
Compliance				
<ul style="list-style-type: none"> Spot check debris loading, staging, reduction, and disposal sites to ensure compliance with eligibility requirements Report any noncompliance, misconduct, or other negative actions to the assigned FEMA Debris Specialist for appropriate coordination and resolution with State and applicant officials. 	<ul style="list-style-type: none"> Ensure all work complies with local ordinances and state and federal regulations. Monitor environmental compliance on all debris management sites (TDSRs). Monitor preservation of places and buildings pertaining to the State's historic and archaeological treasures. 	<ul style="list-style-type: none"> Obtain and become familiar with the requirements outlined in all debris removal and disposal contracts to ensure the contract requirements are implemented correctly. Make unannounced visits to all loading and disposal sites within an assigned area. Take photographs of all trucks and trailers used in the debris operation, to establish a baseline inventory of equipment. 	<ul style="list-style-type: none"> Obtain and become familiar with the requirements outlined in all debris removal and disposal contracts to ensure the contract requirements are implemented correctly. Report to field supervisor if debris removal work does not comply with all local ordinances as well as state and federal regulations (i.e., improper disposal of hazardous wastes). 	<ul style="list-style-type: none"> Obtain and become familiar with the requirements outlined in all debris removal and disposal contracts to ensure the contract requirements are implemented correctly. Report to field supervisor if debris removal work does not comply with all local ordinances as well as state and federal regulations (i.e., improper disposal of hazardous wastes). Verify relevant permits were obtained for debris reduction methods such as burning.



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix H: Debris Monitoring Tools

Table 2 Debris Monitor Duties and Responsibilities			
FEMA Debris Monitor Debris Operations	State/Tribal Debris Monitor	Applicant Field Supervisor	Applicant Debris Tower/Site Monitor



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Appendix H: Debris Monitoring Tools

Table 2 Debris Monitor Duties and Responsibilities

FEMA		State/Tribal	Applicant	Applicant	Applicant
Debris Monitor	Debris Monitor	Debris Monitor	Field Supervisor	Loading Monitor	Debris Tower/Site Monitor
<ul style="list-style-type: none"> • Validate certification of trucks and trailers. • Evaluate operational efficiency. • Oversee documentation requirements. 	<ul style="list-style-type: none"> • Ensure trucks are measured, certified, and operated properly. • Ensure trucks are loaded properly and loads are accurately evaluated. • Verify load tickets are properly completed and controlled by the applicant. 	<ul style="list-style-type: none"> • Ensure only debris from approved public areas is removed. • Assist in measuring all debris hauling trucks and trailers with the appropriate contractor representatives, if applicable 	<ul style="list-style-type: none"> • Ensure that hazardous wastes are not mixed into loads. • Record the types of equipment used (for time-and-materials contracts). • Record the hours equipment was used, including down time of each piece of equipment by day (for time-and-materials contracts). • Ensure that only debris specified by the applicant is collected for loading and hauling. • Ensure only debris from approved public areas is removed. • Ensure the work area is clear of debris before equipment is moved to a new loading area. • Prepare complete and accurate load tickets. • Issue load tickets for each debris load to the truck driver. • Evaluate and record performance and productivity of debris removal crews. 	<ul style="list-style-type: none"> • Ensure that hazardous wastes are not mixed into loads. • Record the types of equipment used (for time-and-materials contracts). • Record the hours equipment was used, including down time of each piece of equipment by day (for time-and-materials contracts). • Accurately measure and document load hauling compartments for trucks and trailers to compute volume capacity in cubic yards for each truck and trailer prior to its commencement of debris hauling operations (recertify on regular basis). • Recertify truck capacities on a regular basis. • Ensure that truck loads are accurately credited (estimate the percentage of full capacity for each truck or trailer load). • Ensure trucks are not artificially loaded (e.g., debris is wetted, fluffed, or not compacted). • Collect load ticket from truck driver and initial each load ticket before permitting any truck to proceed from the tower entrance to dumping location. • Physically control load tickets. • Ensure that all debris is removed from trucks at TDSRs. • Monitor site development and restoration of TDSRs. • Oversee debris reduction (burning, chipping). 	



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

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Table 2 Debris Monitor Duties and Responsibilities				
FEMA Debris Monitor Management and Oversight	State/Tribal Debris Monitor	Applicant Field Supervisor	Applicant Debris Loading Monitor	Applicant Debris Tower/Site Monitor
<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Ensure debris sites are properly mobilized and administered. Ensure accurate recordkeeping and appropriate documentation conducted as mandated in contractor scope of work. 	<ul style="list-style-type: none"> Serve as the first line of management for debris monitors and assist with any questions or conflicts that arise. Prepare a daily written report of all activities observed and include photographs. Be familiar with all phases of debris management operations. 	<p>Communication</p> <ul style="list-style-type: none"> Remain in constant contact with debris management/ dispatch center or field supervisor. Report issues (such as safety concerns, contractor non-compliance, and improper equipment use) to field supervisor. Maintain a log of debris operations issues. Photograph and provide written documentation of any damage to utility components, driveways, road surfaces, private property, vehicles, etc. Perform other duties as directed by designated debris management personnel. 	<ul style="list-style-type: none"> Remain in constant contact with debris management/dispatch center or field supervisor. Report issues (such as safety concerns, contractor noncompliance, and improper equipment use) to field supervisor.



General Debris Monitoring Tips and Considerations

Equipment

- The most common unit of measurement for vegetative and construction and demolition (C&D) debris is the cubic yard (CY). Debris trucks are evaluated for capacity at the TDSRs or final disposal sites. Applicants should require contractors to use appropriate equipment to load debris efficiently so that the maximum level of compaction can be achieved to facilitate expeditious removal of debris from the public rights-of-way.
- All trucks and trailers will be measured and placarded with the measured capacity of the vehicle. The applicant should photograph all trucks/trailers to ensure that the capacity is not reduced by removing sideboards or tailgates on the truck as the debris removal operation unfolds.
- Equipment limitations affect the maximum loading capacity of some vehicles.
- Hand-loaded trucks and trailers cannot achieve compaction levels comparable to mechanically-loaded vehicles. This effectively reduces the capacity of the hand-loaded truck or trailer compared to a truck or trailer that is loaded mechanically. Therefore, FEMA only reimburses 50 percent of the debris monitor's observed capacity for a hand-loaded truck or trailer. For example, if a hand-loaded truck or trailer appears to be 100 percent full, that load should be recorded at 50 percent. Hand-loading debris in trucks or trailers does not achieve maximum compaction, and as a result, debris removal operations take longer to complete. A hand-loaded truck hauls less debris by weight per CY than a mechanically loaded truck. *Refer to FEMA Recovery Fact Sheet RP9523.12, Debris Operations – Hand-Loaded Trucks and Trailers.*
- A truck with no tailgate or no solid tailgate cannot be compacted to its full capacity; therefore, FEMA only considers a maximum of 85 percent of the certified truck capacity for reimbursement purposes.

Monitoring Tips

Monitors should be aware of situations that could impact an applicant's reimbursement under the Public Assistance Program. They should look for:

- **Inaccurate Truck Capacities:** Trucks should be measured before operating, and load capacities should be documented by truck number. Periodically, the applicant should pull trucks out of operation and re-measure.
- **Trucks Not Fully Loaded:** Do not accept the contention that loads are higher in the middle and if leveled would fill the truck. Monitors should check to see if that statement is valid.
- **Trucks Lightly Loaded:** Trucks may arrive loaded with treetops (or a treetop) with extensive voids in the load. Trucks need to be loaded to their full capacity with front-end loaders or other similar equipment to compress the debris materials and remove any voids.



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix H: Debris Monitoring Tools

- **Trucks Overloaded:** Trucks cannot receive credit for more than the measured capacity of the truck or trailer bed, even if material is above the sideboards. If a truck is measured to carry 18 CY, it cannot receive credit for more than 18 CY. However, it can receive credit for less if not fully loaded or lightly loaded as described above.
- **Changing Truck Numbers:** Typically, trucks are listed by an assigned vehicle number and capacity. There have been occasions when truck or trailer numbers with a smaller carrying capacity have been changed to one with a larger capacity. For instance, a 20 CY truck may have a number for a truck that can carry 30 CY. This can be detected if the applicant periodically re-measures the trucks or records actual license plate numbers in addition to a description of the truck. Maintaining truck and trailer certifications with attached photographs at the TDSRs tower can help eliminate such activities.
- **Reduced Truck Capacity or Increased Truck Weight:** On some occasions, trucks have had heavy steel grating welded 2 to 3 feet above the bed after being measured, thus reducing the capacity or inflating the weight of a load. This can be detected by periodically re-measuring the truck bed or recertifying the truck tare weight.
- **Wet Debris When Paid by Weight:** Excessive water added to debris increases the weight of the load. This can be detected during monitoring if there is excessive water dripping from the truck bed or by inspecting the truck bed immediately after unloading. The applicant should periodically recertify the truck tare weight.
- **Multiple Counting of the Same Load:** To prevent reentry with the same load, trucks should not exit the disposal site without unloading. This can be prevented by observing the time of departure and time of arrival recorded on the driver's load ticket. This check may also indicate problems with the applicant's debris monitors at the loading or unloading site. Tower monitors should ensure the load ticket is checked in and compared to the tower log-in sheet to determine if the truck's round-trip time is appropriate.
- **Picking up Ineligible Debris:** Debris monitors should be present at loading sites. Monitors should have a good understanding of eligible debris and any time limits imposed on picking up specific types of debris. Examples of ineligible debris activities include sweeping areas for abandoned cars and white goods; cleaning up illegal dump sites; removing cut trees from subdivisions under development; removing debris from private property; and removing/cutting trees from off rights-of-way in rural areas.

Debris Challenges

- **Vegetative Debris Challenges:** Hazardous leaners, stumps, and hangers can be difficult to measure consistently (particularly because monitors must determine if leaners are leaning at least 30 degrees and eligible to be cut). Debris monitors should have a map of all roads and work with the applicant's public works department to determine the length and location of the public right-of-way.
- **Construction and Demolition Debris Challenges:** Debris generated from prior construction work may be comingled with disaster-generated C&D debris by citizens.



Some citizens may claim that remodeling or renovation work is C&D material too. Many people will choose to remodel a house after a storm instead of demolishing it. The materials from the remodeling are not eligible; these are notable because they look like new materials instead of disaster-damaged materials. A rule of thumb is that no bricks or foundation material would be hauled or considered eligible for FEMA Public Assistance reimbursement.

- **Hazardous Waste Challenges:** Health issues, such as headaches and vomiting, can arise at a burning site if the debris stream includes mixed debris and hazardous chemicals. Soil and air contamination can occur at the pick-up location, along the transit route, and at the TDSRs. Appropriate precautionary measures should be implemented when hazardous materials are identified. Further, the applicant should implement proactive measures to ensure that all hazardous materials are identified.
- **White Goods Challenge:** When debris removal is extended beyond 90 to 180 days, some residents will try to discard their current appliances for free by claiming they are storm debris. The disposal requirements for white goods should include instruction on how to prepare the white goods, ensuring that materials on the curb do not present a safety hazard.

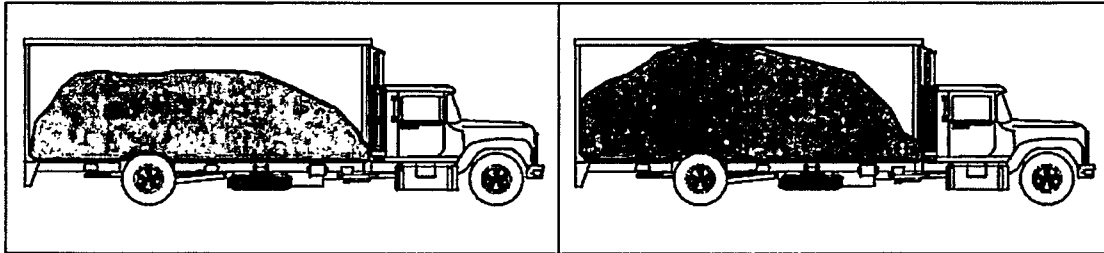
Monitoring Debris Trucks – Guidelines for Estimating Loads in Trucks

- Check the truck number on the placard.
- Check that the capacity (size) of the truck written on the ticket matches the size marked on the side of the truck.
- Walk around the truck. Make sure that the truck is loaded with disaster debris. Ensure that the truck is not falsely loaded.
- When the truck leaves, make sure it is completely empty.
- If there is no tailgate on a truck, the truck is not full. The maximum estimate of the capacity of the load is 85 percent full. However, the monitor must use good judgment to determine if the load is really 85 percent. It is more likely that the truck is between 40 and 60 percent full.
- There are other percentage variations of how a truck can be filled (see illustrations and photographs that follow).
- A truck is 100 percent full only when the debris is filled completely to the brim and the truck is heaped above the sideboards. The truck must have a tailgate that secures the entire back end of the truck.

Note: It is difficult, though not impossible, for a truck to be 100 percent loaded because woody debris, trees, branches, and rubble cannot be placed in a truck without having air holes. Applicant debris monitors and FEMA Debris Monitoring Specialists typically record estimated volumes in 5 percent increments. FEMA will allow a truck to be recorded as 100 percent full if debris volumes can reasonably (and safely) be estimated to meet or exceed certified truck container capacities.



Monitoring Debris Trucks – Guidelines for Estimating Loads in Trucks

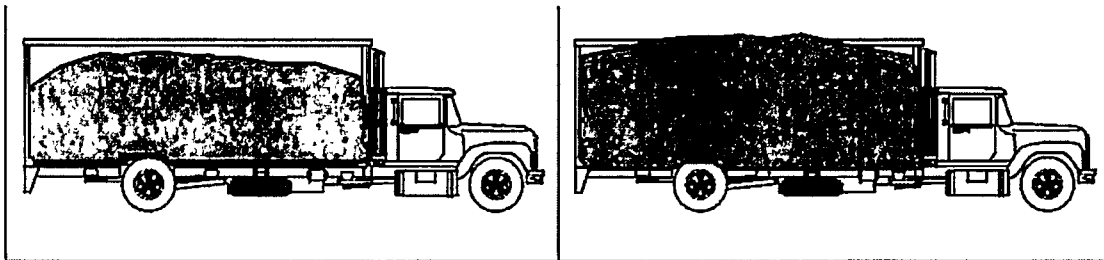


60 Percent Debris Load in Truck

If truck bed measures 20 cubic yards, this 60 percent load would be 12 CY.

75 Percent Debris Load in Truck

If truck bed measures 20 CY, this 75 percent load would be 15 CY.

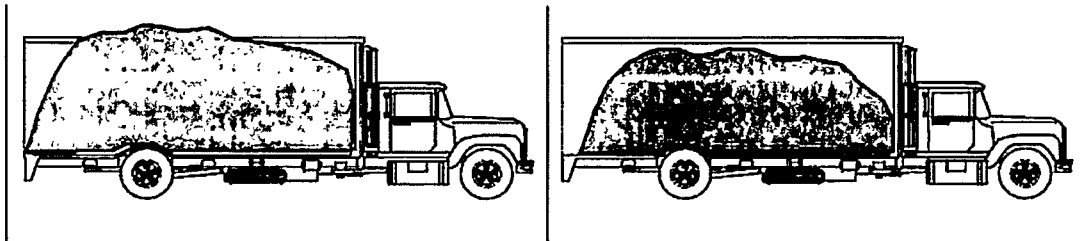


85 Percent Debris Load in Truck

If truck bed measures 20 CY, this 85 percent load would be 17 CY.

95 Percent Debris Load in Truck

If truck bed measures 20 CY, this 95 percent load would be 19 CY.



85 Percent Debris Load in Truck w/ No Tailgate

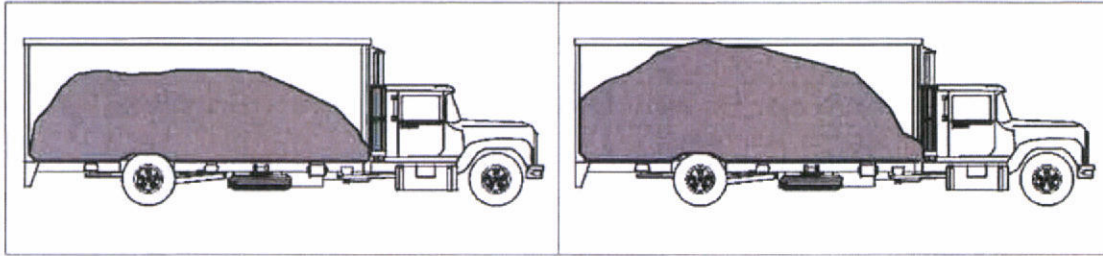
This truck has no structural tailgate—the capacity would automatically be reduced from 20 CY to 17 CY (85 percent reduction). Then the debris load itself is 85 percent of fully loaded—14.5 CY.

75 Percent Debris Load in Truck w/ No Tailgate

This truck has no structural tailgate—the capacity would automatically be reduced from 20 CY to 17 CY (85 percent reduction). Then the debris load itself is 75 percent of fully loaded—12.8 CY.



Monitoring Debris Trucks – Guidelines for Estimating Loads in Trucks

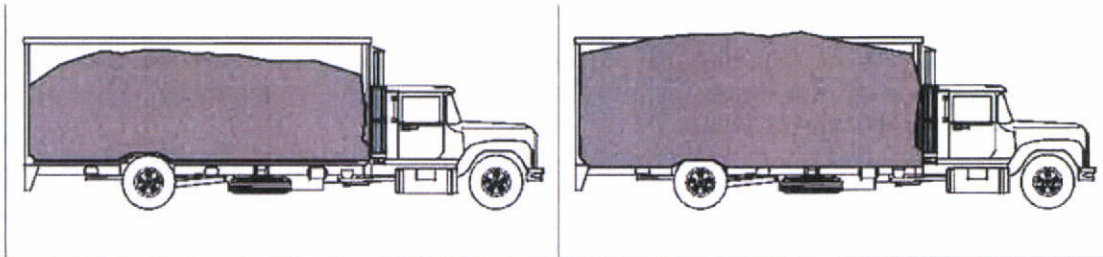


60 Percent Debris Load in Truck

If truck bed measures 20 cubic yards, this 60 percent load would be 12 CY.

75 Percent Debris Load in Truck

If truck bed measures 20 CY, this 75 percent load would be 15 CY.

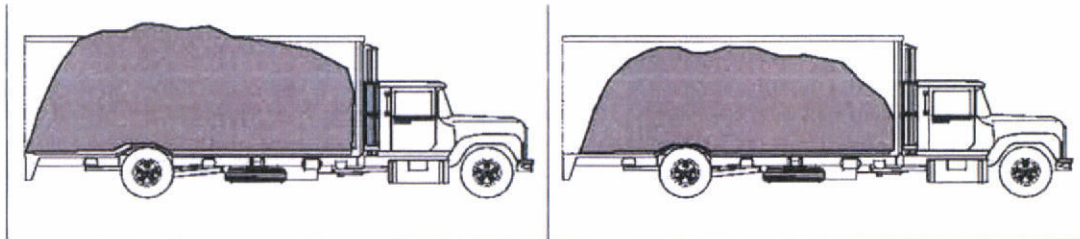


85 Percent Debris Load in Truck

If truck bed measures 20 CY, this 85 percent load would be 17 CY.

95 Percent Debris Load in Truck

If truck bed measures 20 CY, this 95 percent load would be 19 CY.



85 Percent Debris Load in Truck w/ No Tailgate

This truck has no structural tailgate—the capacity would automatically be reduced from 20 CY to 17 CY (85 percent reduction). Then the debris load itself is 85 percent of fully loaded—14.5 CY.

75 Percent Debris Load in Truck w/ No Tailgate

This truck has no structural tailgate—the capacity would automatically be reduced from 20 CY to 17 CY (85 percent reduction). Then the debris load itself is 75 percent of fully loaded—12.8 CY.



Debris Monitor Guidelines for Estimating Quantities

Monitoring Debris Trucks – Guidelines for Estimating Loads in Trucks



Truck without a structural tailgate. Its maximum load is automatically reduced to 85 percent of the rated truck size.



Truck without a tailgate. Its load capacity is automatically reduced to 85 percent. Slat-sided trucks may not be capable of being mechanically compacted. This means the truck capacity should be further reduced.



Truck without a tailgate. Its maximum load capacity is reduced to 85 percent. This truck is claimed to be “fully loaded” with branches sticking above the top and beyond the back of the truck bed—the actual load is only 75 percent.



Truck with branches extending above the top of the truck sides. Although claiming to be “fully loaded,” the load is filled with air pockets and the actual load is only 70 percent of the rated load capacity.



This 20-CY roll-off container has a tailgate (in open position). The load appears to be near top of truck sides and was estimated at 85 percent. The assessment was done from the ground; no monitor tower was used at this TDSR (see next photograph).



This is the actual load from the 20-CY container truck shown on left. It measures approximately 4 CY when on the ground.



Types of Debris Monitoring Considerations

Types of Debris	Description of Debris	Considerations for Monitoring Operations
<p>Vegetative</p>	<ul style="list-style-type: none"> ▪ Includes discarded household appliances such as refrigerators, freezers, air conditioners, heat pumps, ovens, ranges, washing machines, clothes dryers, and water heaters 	<ul style="list-style-type: none"> ▪ Verify that only eligible debris is counted for reimbursement purposes; keep a map of all roads and rights-of-way for area. ▪ Ineligible debris should be identified accordingly. ▪ Evaluate the loaded capacities of the trucks/trailers to determine the percentage of the rated capacity. ▪ Hand-loaded trucks/trailers are graded at 50 percent of a load because of the low compaction achieved by hand-loading, pursuant to Recovery Policy RP9523.15, Debris Operations – Hand-Loaded Trucks and Trailers. ▪ This type of debris may be recyclable or have salvage value; document separation and salvage operations when implemented. ▪ For special vegetative debris considerations, please see Fact Sheet DAP 9580.204, Documenting and Validating Hazardous Trees, Limbs, and Stumps.
<p>Construction and Demolition (C&D)</p>	<ul style="list-style-type: none"> ▪ Can be deposited on streets, sidewalks, storm and sanitary sewers, water treatment facilities, drainage canals and basins, parks, and public swimming pools. 	<ul style="list-style-type: none"> ▪ To be eligible for Public Assistance funding, C&D debris must present an immediate threat and must be disaster-generated.
<p>Hazardous Waste</p>	<ul style="list-style-type: none"> ▪ Waste that is potentially harmful to human health or the environment that exhibits at least one of the following four characteristics: <ul style="list-style-type: none"> ▪ Ignitability ▪ Corrosivity ▪ Reactivity ▪ Toxicity 	<ul style="list-style-type: none"> ▪ Hazardous wastes may require segregation and special handling. ▪ Document improper segregation. ▪ Notify appropriate authorities if unsafe practices are observed during handling and disposal (know required safety procedures for the circumstances). ▪ Monitor processing carefully and regularly to verify the proper precautions are taken and the chain-of-custody is maintained. ▪ Verify that hazardous wastes are delivered to an appropriate TDSRs, as they can require special handling, transportation, and final disposition.
<p>Household Hazardous Waste (HHW)</p>	<ul style="list-style-type: none"> ▪ Includes hazardous products and materials used and disposed of by residential consumers, such as some paints, stains, varnishes, solvents, pesticides, and other products or materials containing volatile chemicals that catch fire, react, or explode under certain circumstances or are corrosive or toxic. 	<ul style="list-style-type: none"> ▪ Verify and document that HHW is picked up and handled by specialists from the State's Department of Environmental Quality (DEQ) and/or the EPA and managed in designated areas within the TDSRs ▪ Verify and document that the chain-of-custody is maintained throughout the collection, handling, transport, and disposal of HHW.



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

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Types of Debris	Description of Debris	Considerations for Monitoring Operations
Electronic Waste (e-waste)	<ul style="list-style-type: none"> ▪ Includes electronics such as cathode ray tubes (computer monitors and televisions) that contain hazardous materials. 	<ul style="list-style-type: none"> ▪ Ensure e-waste is segregated. ▪ Ensure e-waste is removed intact, collected, and stored at the TDSRs for later processing. ▪ Document separation and salvage activities.
White Goods	<ul style="list-style-type: none"> ▪ Includes discarded household appliances such as refrigerators, freezers, air conditioners, heat pumps, ovens, ranges, washing machines, clothes dryers, and water heaters. 	<ul style="list-style-type: none"> ▪ Document that white goods are collected separately, cleaned, and processed to remove putrescent debris inside and to remove all oils, solvents, and refrigerants. ▪ Verify and document that the TDSRs has adequate space for processing white goods if collected without being cleaned. ▪ Document separation and salvage activities.
Soil, Mud, and Sand	<ul style="list-style-type: none"> ▪ Can be deposited on streets, sidewalks, storm and sanitary sewers, water treatment facilities, drainage canals and basins, parks, and public swimming pools. 	<ul style="list-style-type: none"> ▪ Document that only disaster-generated silt and soils are removed (must know pre-disaster condition and documented maintenance). ▪ Document any contaminated soil issues to ensure proper handling, processing, and disposition. ▪ Verify that any contaminated disaster-generated soils are addressed by specialists from the State's DEQ and/or the EPA and managed appropriately in designated areas.
Vehicles and Vessels	<ul style="list-style-type: none"> ▪ Includes vehicles and vessels meeting one of the following criteria: <ul style="list-style-type: none"> • Presents a hazard or immediate threat that blocks ingress/egress within a public use area. • It is abandoned. • Applicant followed local ordinance and state and federal laws in securing possession. • Applicant has verified chain-of-custody for the vehicle or vessel 	<ul style="list-style-type: none"> ▪ Verify that each vehicle or vessel identification number is documented and processed appropriately. ▪ Verify that collected vehicles and vessels are transported to a secure collection area. ▪ Verify that vehicles are processed to remove all minerals and fluids before processing or destruction. ▪ Document separation and salvage activities that are implemented.
Putrescent Debris	<ul style="list-style-type: none"> ▪ Includes debris that will decompose or rot, such as animal carcasses. 	<ul style="list-style-type: none"> ▪ Document that collection is in accordance with contract specifications or other requirements. ▪ Document actual volume of putrescent debris.
Infectious Waste	<ul style="list-style-type: none"> ▪ Includes waste capable of causing infection in humans including contaminated animal waste, human blood and blood products, medical waste, pathological waste, and discarded sharps. 	<ul style="list-style-type: none"> ▪ Document that collection and separation is performed in accordance with prescribed safety and medical practices. ▪ Document volume of debris. ▪ Verify that infectious waste debris quantities are well documented and chains-of-custody are maintained. ▪ Special handling, containerization, and disposal may be required.



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Appendix H: Debris Monitoring Tools

Types of Debris	Description of Debris	Considerations for Monitoring Operations
Chemical, Biological, Radiological, and Nuclear (CBRN)-Contaminated Debris	<ul style="list-style-type: none">▪ Includes debris contaminated by CBRN sources	<ul style="list-style-type: none">▪ Ensure that CBRN-contaminated debris is cleared by law enforcement officials before removal so as not to undermine integrity of the crime scene (as from a man-made disaster).▪ Be aware of the types of evidentiary material being sought in case debris is located outside of the identified crime scene.▪ Verify and document the separation, processing, and disposal to ensure it follows the prescribed procedures.



Debris Monitor Responsibilities for Load Tickets

Monitor Load Ticket Responsibilities		
Load Ticket Information	Loading Monitor	Tower/Site Monitor
Preprinted ticket number	Not Applicable	Not Applicable
Contract number	Contracts may be identified by a number or name	
Prime contractor's name		
Date	X	
Truck number	X	
Truck driver's name	X	
Vegetation	X	
Construction and Demolition Debris	X	
White Goods	X	
Household Hazardous Waste	X	
Other (required to be described applicable)	X	
Load location	X (GPS or address preferred)	
Loading date/time (departure from collection location)	X	
Loading Site Monitor name/signature	X	
Truck capacity in cubic yards or tons		X
Load size, either cubic yards (percent of capacity) or tons		X
Unloading location		X
Unloading date/time (arrival at disposal site)		X
Tower/Site Monitor name/signature		X



Types of Debris Removal Contracts and Monitoring Considerations

Contract Type	Description of Debris	Considerations for Monitoring Operations
Unit Price Contract	<ul style="list-style-type: none"> ▪ Used when individual work tasks are known but the total amount of work cannot be verified. ▪ Units of work can be measured in terms of weight, volume, or any other quantifiable measure. 	<ul style="list-style-type: none"> ▪ Documentation of the location, eligibility, and quantities of debris is essential because the unit price contract is based on an estimate of debris quantities. ▪ Closely monitor pick up, transportation, eligibility determination, segregation, staging, reduction, and final disposition. ▪ Maintain management of truck/trailer measurements; certify all trucks before use.
Lump-Sum Contract	<ul style="list-style-type: none"> ▪ Used when the scope of work can be identified and quantified; use for a well-defined scope of work with a finite contract period. 	<ul style="list-style-type: none"> ▪ Loading monitors must validate that only contract-identified debris is collected. ▪ Debris should only be obtained from eligible sources. ▪ TDSR site monitors should carefully review processing of materials (quantities collected for processing and quantities post-processing). ▪ Document truckloads and debris volumes to make sure final volume matches contract.
Time-and-Materials Contract	<ul style="list-style-type: none"> ▪ Used when the scope of work necessary to achieve an outcome is unknown—contractor is paid for actual time, equipment usage based on hourly rates, and materials used. ▪ FEMA typically only provides funding for the first 70 hours of work after a declared disaster using this type of contract; subsequently, applicant should be able to define scope definitely enough to obtain a lump-sum or unit price contract. 	<ul style="list-style-type: none"> ▪ Monitoring must be thorough. ▪ Inspection reports should be produced every day and should include the following information: <ul style="list-style-type: none"> – Number of hours worked. – Type and quantity of each type of truck/trailer/equipment used. – Verification of equipment hours—document active work hours only; “stand-by” time is not eligible for FEMA funding. – Verification of labor hours compared to equipment hours. – Document weather conditions as they might affect daily work. – Monitor production rates for each staging and reduction site. – Monitor performance. – Check quantities of debris hauled (cubic yards [CY]). – Load tickets can be used as a way of checking contractor efficiency if debris is hauled based on CY.



Sample Debris Monitoring Plan

The following Sample Debris Monitoring Plan is included in FEMA 327, Public Assistance Debris Monitoring Guide, which can be accessed at

http://www.fema.gov/pdf/government/grant/pa/fema_327_debris_monitoring.pdf.

Sample Forms and Tables are intended as examples and should be modified to meet State and local procurement rules and regulations.

General

The _____ has entered into a contract with _____ for the purpose of:

- Removing storm-generated debris from rights-of-way and hauling the debris to a TDSRs for volume reduction and/or to a final disposal site.
- Setting up and operating _____ () TDSRs located at _____
- Hauling chips/mulch from the debris volume reduction site(s) to a location of the Debris Manager's choosing.

The Debris Manager is responsible for monitoring the contractor's debris removal and disposal activities using debris monitoring contractor personnel to prepare debris load tickets and oversee the debris removal and disposal contractor's operations.

Purpose

The purpose of this plan is to outline the debris monitoring responsibilities of the debris monitoring contractor's personnel. This plan is subject to revision based on changing conditions.

Monitoring Operations

The debris removal and disposal contractor will be responsible for removing all eligible debris from maintained street rights-of-way and hauling the debris to designated TDSRs.

Contractor debris monitoring activities will be controlled by the Contractor's Project Manager, located at _____. Phone number is _____.

The debris monitor's work day is expected to be from 7 a.m. to 6 p.m., or a maximum of 10 hours per day, 7 days per week.

Debris monitors will be responsible for initiating debris load tickets at contractor debris loading sites and estimating and recording the quantity of debris, in CY on debris load tickets of all vehicles entering temporary TDSRs (Figure 1).

Loading Site Monitors

The loading site monitor is responsible for completing the debris load ticket, Daily Loading Site Monitor Log, and Daily Debris Issue Log. Each of these is described below.



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix H: Debris Monitoring Tools

Load Ticket		Ticket No. 0012345	
Municipality (Applicant)		Prime Contractor	
		Sub-Contractor	
Truck Information			
Truck No		Capacity	
Truck Driver (print legibly)			
Loading Information			
Loading	Time	Date	Inspector/Monitor
Location (Address or Cross Streets)			
<small>When Using GPS Coordinates use Decimal Degrees (N 31.123456)</small>			
N		W	
Unloading Information			
Debris Classification		Estimated %, CYs, or Actual Weight	
<input type="checkbox"/> Vegetation <input type="checkbox"/> C&D <input type="checkbox"/> White Goods <input type="checkbox"/> HHW <input type="checkbox"/> Other* See Below			
Unloading	Time	Date	Inspector/Monitor
DMS Name and Location			
*Other Debris Explanation		Original	Applicant
		Copy 1	_____
		Copy 2	_____
		Copy 3	_____

Figure 1 Sample Debris Load Ticket

Sample Debris Load Ticket

The loading site monitor will complete Section 1 of the load ticket (Figure 1) for all contractor debris-hauling vehicles. The monitor will keep one copy and give the original and remaining copies to the truck driver. The monitor's copy will be submitted to the debris monitoring contractor's Data Entry Supervisor or designated representative on a daily basis. Load ticket information will be entered into a database by the monitoring contractor's data entry staff.

The loading site monitor should be responsible for initiating load tickets (Figure 1) where trucks are loaded and verifying the estimated amount of debris hauled at the temporary storage area or landfill. The applicant monitors must provide a list of the measured truck capacities in CY and license plate number of all trucks to be used to move debris upon award of the debris removal contract.

Once a truck is loaded with debris at the loading site, the loading site monitor should fill out a load ticket. The load tickets issued by the loading site monitors are the basis for debris contractor payment. Each item in the load ticket must be completed, or the load ticket will not be considered valid.



Sample Daily Debris Loading Site Monitor Log

The Daily Debris Loading Site Monitor Log (Figure 2) is used by the applicant and/or FEMA debris loading site monitor to collect data at the debris pick-up sites. The loading site monitor monitors the removal and disposal crews at several loading sites. The number of crews monitored will depend on the geographical area and volume of debris.

It is important for the debris loading site monitor to document the pick-up site locations (using addresses, mile-markers, or GPS readings) to ensure that debris being picked up is eligible and contractors are working where they were assigned. When issues arise, they should be documented on the Daily Issues Log (see next section). Each loading site monitor should provide his or her name and company name on the form. The loading site monitor should record any issues noted for that day and provide comments concerning that day's operation; photographs should also be provided as needed. Photographs should be taken of any safety violations or other unusual events affecting the debris operation. The debris loading site monitor should document the type of debris being removed.

Time	Ticket Number	Truck Number	Full Truck Rated Capacity (CY)	Pickup Location	Vegetative Debris	C & D Debris	White Goods/ Metals	Other	Issues or Comments/ Pictures Disc

Figure 2 Debris Loading Site Monitor Log

Sample Daily Issue Log

The Daily Issue Log (Figure 3) is used by the applicant and/or FEMA debris loading site monitor to collect data at the location where any issue of significance should be recorded. When documenting information on the Daily Issue Log, the location, monitoring personnel, truck identification data, and details of the issue being resolved should be recorded. For any eligibility or capacity issues, photographs (identified by corresponding numbers on the log sheet) should accompany this log.

Issue Number	Truck Number	Load Ticket	Pick-Up Location	Contractor/ Sub-contractor	Applicant Monitor	Photo/ Disc	Issue/ Resolution

Figure 3 Daily Issue Log

Debris Disposal Tower/Site Monitors

Disposal tower/site monitors will be located at the entrance to the TDSRs or landfill where the inspection tower is located. They will be responsible for estimating and recording the CY of debris in appropriate location on the lower portion of the load ticket (Figure 1) for all incoming debris-hauling vehicles. The following procedures will be followed:

- The tower/site monitor will be stationed in the inspection tower and estimate the quantity of debris contained in the truck or trailer in CY. Each truck or trailer will have the measured hauling capacity in CY recorded on the side of the truck or trailer. That number should be validated with the quantity stated in appropriate location on the upper portion of the load ticket (Figure 1).



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- The tower/site monitor will record the name and the arrival time of the truck and confirm the type of debris in the truck.
- The tower/site monitor will record the estimated volume of debris contained within the bed of the truck or trailer, in CY, under "Unloading Information" on the load ticket. The monitor must print and sign his/her name in the designated block on the load ticket.
- The tower/site monitor may find it useful to use an estimating table such as shown in Table 1.

Table 1 Estimating Truck/Trailer Capacity

Truck/Trailer Size - CY	100% CY	90% CY	85% CY	80% CY	75% CY

Note: Truck/trailer without a tailgate is rated at 85 percent of capacity to start.

- The tower/site monitor will retain the original of the load ticket and give the remaining copies to the truck driver. The original load ticket will be submitted to the monitoring contractor's Data Entry Supervisor or designated representative on a daily basis. Load ticket information will be entered into a database by the monitoring contractor's data entry staff. Load tickets are controlled forms and cannot be lost since they will be used to verify the amount of money paid to the debris reduction site contractor and to the debris hauling contractor.

Sample Daily Debris Site/Monitoring Tower Log

The Daily Debris Tower Log (Figure 4) on the following page can be used by the applicant and/or FEMA tower/site monitor to record the truck data, document estimates of the load volumes, and describe what types of debris are being brought into the TDSRs or landfill. Documenting the tower and pick-up site locations is important so that debris can be correlated and tracked. Each tower/site monitor should provide his or her name and company name on the form. The tower/site monitor should record any issues noted for that day and provide comments concerning that day's operation; photographs should also be provided as needed. Photographs should be taken of any safety violations or other unusual things affecting the debris operation.

Time	Ticket Number	Truck Number	Full Truck Rated Capacity (CY)	Applicant QA Eligible Capacity (% CY/ Wt)	FEMA Eligible Capacity (% CY/ Wt)	Vegetative Debris	C & D Debris	White Goods/ Metals	Other	Issues or Comments/ Pictures Disc

Figure 4 Daily Debris Tower/Site Monitoring Log

Truck Certification Form

The applicant should ensure that every truck and trailer to be used in debris removal operations is measured and documented on a Truck Certification Form (Figure 5). Knowing the hauling



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capacity of each truck is necessary because debris, specifically vegetative debris, is often hauled and billed by volume. Accurately capturing all the truck capacity information and driver profile information is important; having a FEMA Public Assistance representative present when certifying debris trucks is recommended.

Truck documentation should include all trucks to be used, including City/County trucks and trailers. A Truck Certification Form allows the debris monitor to identify the truck itself and its hauling capacity in a standardized manner. The following information should be documented:

- Capacity of hauling bed (CY)
- License plate number
- Truck identification number assigned by the owner
- Brief physical description of the truck
- Photographs

Determining an accurate capacity for each truck is important. Refer to Truck Certification Form Calculation Instructions, below, for additional information.

The information on the Truck Certification Form should be entered into a database by the data entry staff. Copies of the Truck Certification Form should be on file with the applicant and kept in the truck throughout the operational period.

Debris monitors may need to be trained to measure truck capacities for certification purposes. The hauling trucks should be recertified on a random and periodic basis for contract compliance and reimbursement considerations.



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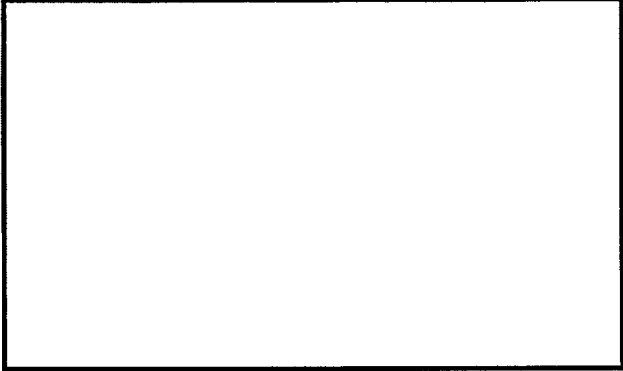
Truck Information			
Make	Year	Color	License
Truck Measurements	Performed		
	By:	Date:	
Volume	By:	Date:	
Calculated Both	Checked By:	Date:	
Driver Information			
	Name:		
	Address:		
	Phone		
Owner Information			
	Name:		
	Address:		
	Phone		
	Truck Identification:		
	Truck		
			
Photo			

Figure 5 Truck Certification Form



Truck Certification Form Calculation Instructions

Instructions to take the necessary dimensions of corner wedge (refer to Figure 6):

Along the side of the bed, measure the distance from the point where the rounded part of the bed starts, to the front corner of the bed.

Equal to "a."

"c" and "d": Along the side of the bed, mark the point where the rounded part of the bed starts, and along the front of the bed, also mark the point where the rounded part of the bed ends. Run a string between the two points and measure the distance between them; half of that distance is "c" and half of the distance is "d" ("c" and "d" are equal).

"e": Measure the distance from the mid-point of the string that was stretched from the side to the front of the bed in the previous step to the rounded part of the bed.

Extra trailer: The volume calculations for the extra trailer would be simply length x width x height if the extra trailer has a rectangular bed. However, if the extra trailer also has round corners at the front, the volume calculation would be the same as explained above.

Instructions to take the necessary dimensions of round bottom truck (refer to Figure 6):

The width of the bed.

The depth of the vertical portion (the side) of the bed.

"c" : and "d": Both are equal to half the width of the bed.

"e": Run a string between the lower ends of the vertical portions of the bed (the sides), and measure the distance from the mid-point of the string to the bottom of the bed.

Sample Debris Collection Summary Spreadsheet

The Debris Collection Summary Spreadsheet (Figure 7) is used to capture the total amount and types of debris removed and disposed of, as well as the cost for each. This information may also be helpful to FEMA to validate any debris prediction models that are run, as well as establishing reasonable costs for debris removal.

CY	Unit Price \$	CY	Unit Price \$	CY	Unit Price \$	CY	Unit Price \$	Average Haul Distance	Primary Disposal Method	CY to Landfill
Vegetative		C & D		HHW		White Goods				

Figure 6 Debris Data Collection Summary Spreadsheet

NOTE: All dimensions used in the above formulas must be in feet, with inches converted to fractions of feet, using the following conversions (for example, 8 feet, 5 inches should be written as 8.42 feet):



1 inch = .08 foot	7 inches = .58 foot
2 inches = .17 foot	8 inches = .67 foot
3 inches = .25 foot	9 inches = .75 foot
4 inches = .33 foot	10 inches = .83 foot
5 inches = .42 foot	11 inches = .92 foot
6 inches = .50 foot	

Sample Request for Proposal Cover Letter for Debris Monitoring Services

The following Sample Request for Proposal Cover Letter for Debris Monitoring Services is included in FEMA 327, Public Assistance Debris Monitoring Guide that can be accessed at http://www.fema.gov/pdf/government/grant/pa/fema_327_debris_monitoring.pdf.

Date:

Subject: Request for Proposals for Disaster Debris Monitoring

The _____ invites qualified firms to respond to this request for proposal (RFP) by providing their qualification and experience for consideration to provide Disaster Debris Monitoring Services on an as-needed basis.

Disaster Debris Monitoring Services

The scope of services shall include, but not be limited, to the following:

The _____ seeks qualified firm(s) to assist in the monitoring of disaster debris collection and disposal operations on behalf of the _____, ensuring compliance with federal requirements and applicant debris management plans as related to contractor oversight, truck measurements, load ticket preparation and issuing, report preparation, and project administration.

The Debris Monitoring Contractor shall provide personnel to monitor at least _____ debris loading sites and up to _____ personnel to monitor debris management sites (TDSRs)/disposal sites located in _____. Each site will operate approximately 12 to 14 hours per day, 7 days per week. The exact number and locations of sites will be determined by the Debris Manager.

The Debris Monitoring Contractor's on-site Project Manager shall also assign a field supervisor who will be assigned to provide oversight of up to 10 loading site and tower/site debris monitors.

The Debris Monitoring Contractor shall provide all management, supervision, labor, transportation, and equipment necessary to initiate load tickets at debris loading sites, estimate the volume of debris (in cubic yards,) being delivered by trucks to each TDSRs/disposal site, and support the operations of the field supervisor(s), debris loading and tower/site monitors, and clerical staff.



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Scope of Services for Debris Management to include field supervisors, debris loading monitors, tower/site debris monitors, and clerical staff is at Attachment 1.

The Bid Schedule (attached) must be completed and submitted with your proposal.

The RFP should be limited to 10 pages and address the following:

- Office location responsible for this project.
- Key personnel.
- Evidence of satisfactory completion of disaster debris monitoring in the past 5 years at similar jurisdictions.
- The scope, project budget, and operational duration (include the firm's contract manager, and phone number and e-mail address for each disaster response or project, if available).
- Summarized past relevant experience for each response should include the following:
 - Type of disaster—hurricane, tropical storm, tornado, etc.
 - Type of jurisdiction—city, county, district, or combination
 - Collection debris monitoring assignments
 - TDSRs debris monitoring assignments
 - Final disposal debris monitoring functions
 - FEMA reimbursement actions and issue resolution
 - List of references
 - Knowledge and experience with applicant solid waste regulations and the disaster debris management policies
 - Sub-consultant(s)/subcontractors that may be used on this project
 - 3-year claims/litigation history and status

Any material received that is not requested may be discarded. Bindery (except removable fasteners) in any form is not preferred, nor is specially prepared covers, dividers, tables of content, organizational charts, reference letters, etc.

The evaluations made as a result of reviewing the above information from each firm will be part of the basis for developing a short list of firms who may be scheduled to make presentations before the Selection/Negotiation Committee (S/NC), and may serve as continuing information for the final ranking.



Selection/Negotiation Process

An S/NC has been appointed by the _____ and will be responsible for recommending the most qualified firm(s) with whom to begin negotiation of an agreement for this project. The process for this procurement is anticipated, but not required, to proceed in the following manner:

Review of Written Submittals

Each firm should submit documents that provide evidence of capability to provide the Debris Monitoring services required for this project. Each short-listed firm will be contacted via telephone and a follow-up letter advising of date and time for presentations/interviews.

The _____ will not consider oral/written communications, prior to the conclusion of short listing firms that vary the terms of the submittals.

Presentations/Interviews

The S/NC may provide a list of subject matter for discussion. Each short-listed firm will be given equal time to make presentations, but the question-and-answer time may vary.

All inquiries are to be directed to _____ at _____.

Interested firms should submit four copies of materials that indicate interest and qualifications to:

Submittals **MUST BE RECEIVED** by the _____ no later than 5:00 p.m. on

_____, 20 ____ electronically transmitted and late or misdirected submittals will not be accepted.

Signature _____

Attachment 1 – Scope of Services Attachment 2 – Bid Schedule

This sample is intended as guidance and should be modified to meet state and local procurement rules and regulations

Sample Scope of Services for Debris Monitoring Services

General

Provide debris monitors and debris monitoring services to assist the City/County with monitoring the operations of the disaster debris removal and disposal contractor(s). The debris monitoring services to be provided are contract compliance supervision and inspection, not professional engineering services. All debris monitoring activities are to be in compliance with current FEMA guidance and local, state, and federal regulations.

Pre-Event Requirements

Contractor will provide assistance in preparation for disasters through participation in meetings and workshops and the establishment of data management and other integrated systems.

Contractor will, at no cost to the City/County/Tribe:



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Appendix H: Debris Monitoring Tools

- Provide City/County/Tribe full-time personnel with a half-day debris management training session. Training program must, at a minimum, meet the training requirement for debris monitors as outlined by current FEMA debris management guidance.
- Provide a list of key personnel and subcontractors that may be involved in the disaster debris monitoring activities, including fax and cell phone numbers, and e-mail addresses.
- Participate in annual workshops or planning meetings with City/ County/Tribe representative and debris hauling and disposal contractor(s) to establish/review applicable policies and procedures.

Post-Event Requirements

Contractor will assist with load inspections for storm debris cleanup being performed by one or more debris hauling and disposal contractors or City/County/Tribal agencies.

Contractor shall supply sufficient number of trained debris monitors and trained field supervisors to accommodate the volume of debris to be removed at loading sites and debris management sites or final disposal sites.

Contractor shall supply one field supervisor to oversee no more than 10 loading and tower/site debris monitors.

Contractor shall remove and replace employees immediately upon notice from the City/County/Tribal Debris Manager for conduct or actions not in keeping with this contract.

Personnel Requirement and Responsibilities

Debris Monitoring Field Supervisor

Consultant will provide one debris monitoring field supervisor for no more than 10 debris loading site debris monitors.

Services include, but are not limited to:

- Overseeing and supervising loading site and disposal site debris monitoring activities.
- Scheduling debris monitoring resources and deployment timing.
- Communicating and coordinating with City/County/Tribal personnel.
- Providing suggestions to improve the efficiency of collection and removal of debris.
- Coordinating daily activities and future planning.
- Remaining in contact with debris management/dispatch center or supervisor.



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- Identifying, addressing, and troubleshooting any questions or problems that could affect work area safety and eligibility.
- Supervising the accurate measurement of load hauling compartments and accurately computing volume capacity in CY.
- Documenting and recording measurements and computations.
- Documenting truck hauling compartment condition using digital photographs.
- Preparing a master log book of all hauling equipment used by the City/County/Tribe's debris removal contractor.
- Compiling, reconciling, and documenting daily, in an electronic spreadsheet format, all eligible debris hauled by the debris removal contractor(s).

Debris Monitors

Consultant will provide trained debris monitoring personnel to oversee the loading of eligible debris at collection sites and verification of load capacity and documentation at designated temporary debris management or final disposal sites. Services include, but are not limited to, the following.

Debris Loading Site Monitors

Consultant will perform on-site, street-level debris monitoring at all contractor loading sites to verify debris eligibility based on the monitoring contract's requirements and initiate debris removal documentation using load tickets. Services include, but are not limited to:

- Providing trained debris monitoring personnel at designated loading sites to check and verify information on debris removal operations.
- Monitoring collection activity of trucks.
- Issuing load tickets at loading site for each load.
- Checking the area for safety considerations such as downed power lines and children playing in area, and ensuring that traffic control needs are met and trucks and equipment are operated safely.
- Ensuring that Freon-containing appliances are sorted and ready for Freon removal on site or separating transport for Freon removal before final disposal.
- Performing a pre-work inspection of areas to identify potential problems such as covered utility meters, transformers, fire hydrants, mail boxes, etc. to mitigate damage from loading equipment.
- Documenting damage to utility components, driveways, road surfaces, private property, vehicles, etc., should it occur, with photographs (if possible, collect information about owner, circumstances of the damage [who, what, when, where] and report to field supervisor).



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- Ensuring the work area is clear of debris to the specified level before equipment is moved to a new loading area.
- Properly monitoring and recording performance and productivity of debris removal crew.
- Remaining in regular contact with debris management/dispatch center or supervisor.
- Ensuring that loads are contained properly before leaving the loading area.
- Ensuring that only eligible debris is collected for loading and hauling.
- Ensuring that only debris from approved public areas is loaded for removal.
- Performing other duties from time to time as directed by the debris management project manager or designated debris management personnel.

Debris Tower/Site Monitors

Consultant will provide debris tower and site monitors to verify estimated quantities of eligible debris hauled by contractor trucks and documented on load tickets. Services include, but are not limited to:

- Providing trained debris monitoring personnel to accurately measure load hauling compartments and accurately compute volume capacity in CY for all contractor trucks and trailers prior to commencement of debris hauling operations.
- Documenting measurements and computations.
- Completing record of contract haulers' cubic yardage and other recordkeeping as needed on the load ticket.
- Initialing each load ticket before permitting trucks to proceed from the check-in area to the tipping area.
- Remaining in regular contact with debris management/dispatch center or field supervisor.
- Performing other duties as directed by the dispatch/staging operation, debris management project manager, or other designated personnel.

Clerical/Data Entry Supervisor

Consultant will provide a clerical/data entry supervisor to coordinate data entry and information management systems. Services include, but are not limited to:

- Supervising the preparation of detailed estimates and submitting them to the City/County/Tribal debris manager.



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- Implementing and maintaining a disaster debris management system linking the load ticket and debris management site information, including reconciliation and photographic documentation processes.
- Providing daily, weekly, or other periodic reports for the City/County/Tribal debris manager noting work progress and efficiency, current/revised estimates, project completion, and other schedule forecasts/updates.

Clerical Staff/Data Entry Clerk

Consultant will provide clerical staff/data entry clerk(s) as required to enter load ticket information into the contractor's information management systems and respond to specific directions from the data entry supervisor.

Terms

The work shall begin on notice to proceed and continue for no longer than 60 days, unless extended by the City/County/Tribe with 10 days written notice.

Deployment

Consultant must be prepared to deploy debris monitors within 24 hours from the notice to proceed. When additional debris monitoring is needed to meet requirements of the monitoring contract, consultant shall be prepared to increase the number of debris monitors for the City/County/Tribe to use as needed.

This sample is intended as guidance and should be modified as appropriate to address the conditions of the operation.



Appendix I Debris Types and Strategies for Removal

Summary of Types of Debris by Type of Disaster

Type of Disaster	Typical Debris Streams											
	Vegetative	Construction & Demolition	Personal Property	Hazardous Waste	Household Hazardous Waste	Electronic Waste	White Goods	Brown Goods	Soil, Mud, Sand, and Snow	Regulated Medical Waste	Vehicles and Vessels	Putrescent
Flooding	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
Earthquake		✓	✓		✓		✓		✓	✓		✓
Wildfire	✓		✓		✓		✓		✓			
Winter Storm	✓				✓				✓			✓
Windstorm	✓	✓	✓	✓							✓	✓
Chemical, Biological, Radiological, Nuclear, Explosive		✓		✓		✓		✓				✓

Debris Descriptions

The following general descriptions of Typical Debris Streams are taken directly from Federal Emergency Management Agency (FEMA) 325. Refer to FEMA 325 for more information, including in-depth descriptions and eligibility.

Note: Only FEMA has the authority to make eligibility determinations for Public Assistance grant funding; contractors cannot make eligibility determinations. Information on eligibility can be found in FEMA 321 – Public Assistance Policy Digest, FEMA 322 – Public Assistance Guide, FEMA 323 – Public Assistance Applicant Handbook, and FEMA 325 Debris Management Guide.

- **Vegetative** – Vegetative debris consists of whole trees, tree stumps, tree branches, tree trunks, and other leafy material.
- **Construction & Demolition** – Construction and demolition (C&D) debris can be defined as damaged components of buildings and structures such as lumber and wood, gypsum wallboard, glass, metal, roofing material, tile, carpeting and floor coverings, window coverings, pipe, concrete, fully cured asphalt, equipment, furnishings, and fixtures.
- **Private Property** – Debris, generally C&D debris, located on private property.



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- **Hazardous Waste** – Hazardous waste is waste with properties that make it potentially harmful to human health or the environment. Hazardous waste is regulated under the Resource Conservation and Recovery Act (RCRA). In regulatory terms, a RCRA hazardous waste is a waste that appears on one of the four hazardous waste lists or exhibits at least one of the following four characteristics: ignitability, corrosivity, reactivity, or toxicity.
- **Household Hazardous Waste** – Household Hazardous Waste (HHW) refers to hazardous products and materials that are used and disposed of by residential rather than commercial or industrial consumers. HHW includes some paints, stains, varnishes, solvents, pesticides, and other products or materials containing volatile chemicals that catch fire, react, or explode under certain circumstances, or that are corrosive or toxic.
- **Electronic waste, or e-waste**, refers to electronics that contain hazardous materials such as cathode ray tubes. Examples include computer monitors and televisions.
- **White Goods** – White goods are defined as discarded household appliances such as refrigerators, freezers, air conditioners, heat pumps, ovens, ranges, washing machines, clothes dryers, and water heaters.
- **Brown Goods** – Brown goods are furniture items such as couches, mattresses, tables, and chairs.
- **Soil, Mud and Sand** – Floods, landslides, and storm surges often deposit soil, mud, and sand on improved public property and public rights-of-way. Facilities commonly impacted by this type of debris may include streets, sidewalks, storm and sanitary sewers, water treatment facilities, drainage canals and basins, parks, and swimming pools.
- **Regulated Medical Waste** – Cultures and stocks of infectious agents, human pathological wastes, human blood and blood products, sharps (e.g., needles, blades), and animal wastes; does not include medical waste created at home.
- **Vehicles and Vessels** – Vehicles and vessels that are damaged, destroyed, relocated, or lost as a result of the disaster.
- **Putrescent** – Putrescent debris is any debris that will decompose or rot, such as animal carcasses and other fleshy organic matter.

Categories and Types of Debris

The following is an example list of categories and the types of debris that can be found within each category. When developing Disaster Debris Management Plans, each jurisdiction should consider any unique categories and types of debris based on their specific solid waste and recycling organizations.



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■ Paper

- Uncoated Corrugated Cardboard
- Paper Bags
- Newspaper
- White or Colored Ledger
- Computer Paper
- Other Office Paper
- Magazines and Catalogs
- Phone Books and Directories
- Other Miscellaneous Paper
- Remainder/Composite Paper

■ Glass

- Clear, Green, Brown or other Colored Glass Bottles and Containers
- Flat Glass
- Remainder/Composite Glass

■ Metal

- Tin/Steel or Aluminum Cans
- Major Appliances
- Used Oil Filters
- Other Ferrous
- Other Nonferrous
- Remainder/Composite Metal

■ Electronics

- Computer-Related Electronics
- Other Small Consumer Electronics
- Televisions and other items with Cathode-Ray Tubes

■ Plastic

- PETE and HDPE Containers
- Miscellaneous Plastic Containers
- Trash Bags
- Grocer and Other Merchandise Bags
- Non-Bag Commercial Industrial Packaging Film
- Film Products
- Durable Plastic Items
- Remainder/Composite Plastic

■ Other Organic

- Food
- Pruning and Trimmings, Including Leaves and Grass
- Branches and Stumps
- Agricultural Crop Residues
- Manures
- Textiles
- Carpet
- Remainder/Composite Organic

■ Inerts and Other

- Concrete
- Asphalt Paving and Roofing
- Lumber
- Gypsum Board
- Rock, Soil, and Fines
- Remainder/Composite Construction and Demolition



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■ Household Hazardous Waste

- Paint
- Vehicle and Equipment Fluids
- Used Oil
- Batteries
- Remainder/Composite Household Hazardous

■ Special Waste

- Ash
- Sewage Solids
- Industrial Sludge
- Treated Medical Waste
- Bulky Items
- Tires
- Remainder/Composite Special Waste

■ Mixed Residue

Source: San Francisco Debris Management Plan

Strategy by Debris Type

This section was adapted from the Washington County Debris Management Annex.

Vegetative Debris

Vegetative debris directly obstructing the public right-of-way will be removed. Vegetative debris that is not directly obstructing a public right-of-way and exists on improved public property that is within the declared area and is considered hazardous may be collected and removed if the following criteria are observed:

- Condition must be a direct result of the disaster.
- Diameter of 6 inches or greater at breast height.
- Greater than 50 percent of the crown is damaged or destroyed.
- Trunk is split or broken branches expose the heartwood.
- Tree has fallen or been uprooted within a public-use area.
- Tree is leaning at an angle of 30 degrees or more.

Hazardous Limbs are defined as:

- Greater than 2 inches in diameter at the point of breakage.
- Still hanging in a tree and threatening a public-use area (e.g. trails, sidewalks, golf cart paths, etc.).

Hazardous Tree Stumps are defined as:

- 50 percent or more of the root-ball exposed.
- Greater than 24 inches in diameter, as measured above the ground.

Hazardous stump removal for stumps measuring 24 inches in diameter or less does not require special equipment; therefore, these stumps will be removed on a reasonable unit cost per cubic



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yard along with other debris. More information regarding hazardous stump removal can be found in *FEMA Disaster Assistance Policy 9523.11, Hazardous Stump Extraction and Removal Eligibility*.

Vegetative debris is bulky and consumes a significant amount of space if not reduced. If vegetative debris is taken to a TDSR, efforts will be made to reduce the volume of vegetative debris by chipping and grinding, which reduces the debris volume by 75%. Additionally, vegetative debris must be mechanically loaded into trucks and compacted, or the volume will be reduced by half for Public Assistance program reimbursement purposes.

The chips/mulch produced by grinding vegetative debris has agricultural value as well as being easily converted to pelletized fuel. Chipping requires on-site storage and disposal of the chips/mulch. Grinding and chipping will be utilized as a viable reduction method. The Region will contract with a grinding operation if deemed necessary due to large quantities of stumps, leaves and limbs.

Once vegetative debris is removed, it will be taken to a currently permitted facility or, if no such facilities are operational, a TDSR site or a holding site.

Construction and Demolition Debris

C&D debris generated from a large scale event is likely to be concentrated in the major urban areas of Reno and Sparks. Structures most vulnerable to large scale events include unreinforced masonry buildings (with brick facades or concrete structures lacking internal rebar) and buildings existing on soils vulnerable to liquefaction.

Certain types of C&D debris are reusable or recyclable. To conserve landfill space, it is prudent to separate materials for reuse or recycling, which is typically conducted at a pre-existing disposal site or TDSR. Some C&D debris may be hazardous, such as asbestos roofing and floor tile, lead pipes, and wood contaminated with lead based paints. All other local, state, and federal laws and regulations, including environmental and hazardous waste ordinances, must be followed when collecting asbestos containing materials. Documentation of the debris origin, any processing (reduction or recycling), and the final disposition will be required.

C&D debris comprises all types of mixed wastes, including concrete, bricks, bituminous concrete, asphalt paving, untreated or chemically treated wood, glass, masonry, roofing, siding, and plaster, as well as soils, rock, stumps, boulders, brush, and other similar materials, many of which may be recycled if separated.

It will be assumed that C&D debris taken to a TDSR site will eventually be removed from the temporary site and taken to a recovery facility for sorting and final disposal or to a landfill. Actions taken at the TDSR site will be limited to the removal of very large debris by heavy equipment sorting. Large piles of mixed C&D debris will not be sorted at a TDSR site.

Once C&D debris is removed from the public right-of-way, it will be taken to a currently permitted facility or, if no such facilities are operational, a TDSR site.

Asbestos Containing Material

Any material that is found to be classified as hazardous or toxic waste, such as lead or asbestos, shall be reported immediately to a designated coordinating agency representative. At the coordinating agency representative's direction, this material shall be segregated from the remaining debris in such a way as to allow the remaining debris to be loaded and transported.



Staff handling asbestos must have passed an asbestos worker training course from an asbestos training provider that the Nevada Division of Environmental Protection has approved.

Any asbestos-containing waste material (ACWM) that is discovered needs to be immediately segregated with minimal handling (to prevent releases of asbestos fibers) and kept hosed and wet until an abatement contractor can properly dispose of it. Non-friable asbestos can become friable when mishandled, damaged, disturbed, worn, or ground. Operators must take care to keep non-friable asbestos in the non-friable state. Prior to removal, debris should be evaluated to identify any ACWM. The solid waste letter of authorization (SWLA) for a TDSR site will require that the operator have someone trained in asbestos awareness that can recognize suspect ACWM and can take appropriate steps to isolate and manage any potential ACWM. Air quality asbestos staff may be able to ask an asbestos certified trainer to provide emergency training for the temporary site operators.

Solid waste staff, in consultation with air quality asbestos staff, may consider allowing a temporary site to accept ACWM on a case-by-case basis depending on the need to address asbestos as well as the abilities of the site operator to properly segregate, handle, and ultimately dispose of ACWM waste safely. The site operator will need to prepare a Special Waste Management Plan as part of the SWLA application.

If houses are being torn down after the disaster, citizens could inadvertently be bringing materials containing asbestos to the public right-of-way, disposal site, or public debris collection site. Procedures for identifying and managing ACWM will be developed in conjunction with the Washoe County Health District prior to removal of materials that could potentially contain asbestos.

Hazardous and Other Special Waste

The County may be required to address widespread hazardous materials contamination. Necessary measures may include retrieval and proper disposal of orphan drums, pumping water contaminated with hazardous materials, control or stabilization of oil or other hazardous material releases, and cleanup and disposal of hazardous materials. Certified hazardous waste technicians will handle, capture, recycle, reuse, and dispose of hazardous waste. The Region must comply with local, state, and federal environmental requirements for handling hazardous waste.

HHW or hazardous waste from Conditionally Exempt Generators is often generated when hazards affect populated areas. This may include electronic waste as well. The outcome of improper handling of hazardous waste during a disaster response may result in potential contamination of surface water, groundwater, soil and air resulting in exposure to people.

Hazardous Waste

Hazardous waste handling and removal will be coordinated by the Nevada Division of Environmental Protection, Bureau of Waste Management Hazardous Waste Program, in consultation with the Regional Partners and, potentially, the Office of the State Fire Marshal, and state and/or federal Emergency Support Function #10 – Oil and Hazardous Materials Response.

Items classified as commercial or industrial hazardous waste WILL NOT be accepted at debris management sites. Individuals with material of this nature will be referred to the state for technical assistance.



Household Hazardous Waste

HHW handling and removal will be coordinated by the DMT, and potentially state and/or federal Emergency Support Function (ESF) #10 in consultation with the Region.

HHW may consist of common household chemicals, propane tanks, oxygen bottles, batteries, and industrial and agricultural chemicals. These items may be mixed into the debris stream and will require close attention throughout the debris removal and disposal process.

An RHMERT or HHW contractor will accomplish removal of hazardous waste. HHW identification and segregation will be completed before any building demolition begins. Regular demolition contractors/workers cannot remove contaminated debris.

Once debris is removed from the public rights-of-way, it will be taken to a currently permitted facility or, if no such facilities are operational, a specially designated holding area that is permitted to handle HHW.

White Goods

Many white goods contain ozone-depleting refrigerants, mercury, or compressor oils, requiring waste handlers to follow all applicable local, state, and federal requirements.

White goods must be kept separate from other disaster-related debris because of the hazardous materials they contain. White goods will be hauled directly to a disposal site or to a white goods holding area. Source segregation is the optimal collection strategy when white goods are a common component of the disaster-generated debris; therefore, public information efforts will be made to encourage citizens to segregate white goods from other debris types.

Private contractors will be encouraged to collect white goods, which is common practice due to the value of the scrap metal. Private contractors typically undertake this effort with little or no charge to local jurisdictions.

Soil, Mud, and Sand

The Region has a legal responsibility to remove soil, mud, and sand from public rights-of-way, as well as clear out materials from sewer lines. Unimproved property will not be cleared of soil, mud, and sand. Stream channels may be cleared of soil, mud, and sand if it is necessary for the normal operation of a roadway or if the blockage will alter stream flow characteristics so as to potentially create a flooding threat.

Removal of soil, mud, and sand will be limited to the quantity that was deposited due to the disaster. Large amounts of soil can be recovered if the material is put through a screen system. The resulting soil can be given back to the agricultural community, returned to its original location, used as fill in reconstruction projects, or used as cover material in landfills. The soil could also be transported to a staging area and reduction site, where it could be combined with organic material that will decompose. Soil recycling would require large earthmoving equipment such as dump trucks, conveying equipment, and screening equipment.

In agricultural areas where chemical fertilizers are used heavily, or in the event other hazardous materials have leached into the soil, recovered soil may be too contaminated for use on residential or existing agricultural land. Monitoring and testing of the soil would be necessary depending on where the debris originated and may result in the soil being disposed of in a landfill permitted to accept contaminated soils.



Vehicles and Vessels

Vehicles and vessels damaged or destroyed during a disaster may become debris that must be managed. Vehicles and vessels considered disaster debris in the context of this plan are ones that were damaged as a result of the disaster and are deemed to be a hazard or obstruction.

County Code allows a law enforcement officer to take a vehicle into custody and that the vehicle shall be impounded and immediately towed from public right-of-way, public parks, or other public roads, property or premises if:

- No other licensed driver is immediately available to take possession of the vehicle and the officer reasonably believes no other reasonable disposition of the vehicle is available.
- The officer taking the person into custody reasonably believes that the vehicle constitutes a hazard.

Putrescent Debris

Putrescent debris will be kept separate from other non-putrescent debris. All other putrescent disaster-generated debris, such as rotting food items within inoperable refrigeration units, will be kept separate from other non-putrescent debris. Putrescent debris removed from refrigeration units at white goods disposal sites will be disposed of at a currently permitted facility that accepts putrescent waste. Collection and segregation of putrescent waste at a holding area will be conducted through the use of drop-box or roll-off type containers. Material that is removed from refrigeration units will be bagged in clear plastic bags prior to placement in drop-box or roll-off type container.

Infectious Waste

Methods for managing infectious waste vary depending on the type of waste. Infectious waste may include pathological waste, biological waste, sharps, and culture and stocks. Handling requirements for each type of infectious waste are included in sections 6.2.8.1 through 6.2.8.4 of this plan.

Pathological Waste

Pathological waste is defined as consisting of human tissue from surgery and lab procedures and lab animals. Pathological waste must be contained within a red bag marked bio-hazardous and incinerated.

Biological Waste

Biological waste is defined as consisting of blood and other body fluids that cannot go directly into the sanitary sewer system or waste materials that are saturated (dripping) with bodily fluids, not including diapers soiled with urine or feces. Biological waste must be contained within a red bag marked bio-hazardous and either incinerated or sterilized in an auto-clave type vessel and transported to a municipal solid waste landfill. Liquids and semi-solids may be discharged into the sanitary sewer system.

Sharps

Sharps are defined as needles, IV tubing with needles attached, scalpel blades, lancets, glass tubes, and syringes out of their original sterile containers. Sharps must be contained within a red box that is puncture proof, marked bio-hazardous, and either



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incinerated, sterilized in an auto-clave type vessel or disposed of in a segregated area of a permitted landfill.

Cultures and Stocks

Cultures and stocks are defined as specimen cultures and dishes, serums, and vaccines, excluding throat and urine cultures. Cultures and stocks must be contained within red bags marked bio-hazardous and either incinerated or sterilized in an auto-clave type vessel and transported to a municipal solid waste landfill.

Chemical, Biological, Radiological, and Nuclear (CBRN)-Contaminated Debris

CBRN-contaminated debris is any debris contaminated by chemical, biological, radiological, or nuclear materials as a result of a natural or man-made disaster, such as a weapon of mass destruction event. The clearance, removal, and disposal of CBRN-contaminated debris should be performed in accordance with applicable federal statutes, regulations, policies, and other guidance documents.

In the event of a radioactive disaster, staff should consult with the Washoe County Health District on how to handle the debris so that no one is exposed to radiation. Solid waste staff could consider permitting a temporary transfer station away from high-density population areas.

Considerations for monitoring operations:

- Man-made disasters may create debris that is considered evidence as part of a crime scene. Law enforcement officials may need to clear the activities before debris operations can begin. Monitors should ensure the CBRN-contaminated debris is cleared by law enforcement officials before removal so as not to undermine the integrity of the crime scene. Debris operations may also proceed concurrently with incident investigations.
- Be aware of the types of evidentiary material being sought in case CBRN-contaminated debris is encountered outside of the identified crime scene area.
- CBRN-contaminated debris may be either disposed of or taken to a special collection area for further processing. Verify and document that separation, processing, and disposal follow the prescribed procedures.

Garbage

The Region will coordinate the restoration of garbage and recycling collection services during response operations, if they were disrupted by the event. Residents will be informed of when debris operations will take place in their neighborhoods and of any debris-related health issues, though public information efforts.

The collection, hauling, and disposal of garbage is not reimbursable by the FEMA Public Assistance program, as it is not considered disaster-generated debris. Because of the health hazard garbage poses, every effort will be made to restore normal garbage and recycling operations as quickly as possible.

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Appendix J Example Scopes of Work

This document contains incomplete contracts and is to be used for informational purposes and as a guide only.

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This document contains incomplete contracts and is to be used for informational purposes and as a guide only.

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- Some attachments need to be supplied by the local community.
- Specific issues which are not included in this standard example should be added. Examples include hazardous/toxic waste handling, debris classification, etc.

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Appendix J-1 Equipment Leasing for Clearing of Debris Related to Disaster

**Scope of work for equipment leasing for clearing of debris related to
[name/nature of disaster]
at, in, or near
[location of recovery efforts]**

1 General

The purpose of this contract is to provide debris clearing and removal response assistance to [LOCATION; i.e., "Washoe County in Nevada "] which have been declared disaster areas by the President because of the effects of [NAME OF DISASTER].

2 Services

2.1 The Contractor shall provide specified equipment, with operators, and laborers for debris removal. The contractor shall provide all labor and materials necessary to fully operate and maintain (including fuel, oil, grease and repairs) the following:

[INSERT QUANTITY AND DESCRIPTION FROM EQUIPMENT LIST]

2.2. The Contractor shall provide the crews for [INITIAL TIME; i.e., "two weeks"] with a Government option to extend for up to an additional [EXTENSION TIME; i.e., "one week"].

2.3. All hourly equipment rates include the cost of the operator, supervision, maintenance, fuel, repairs, overhead, profit, insurance, and any other costs associated with the equipment and personnel.

2.4. All hourly manpower rates include the cost of protective clothing (to include hard-hats and steel toed boots), fringe benefits, hand tools, supervision, transportation and any other costs.

2.5. The work shall consist of clearing and removing any and all "eligible" debris (see section 3.0 for a definition of eligible debris) as directed by the Contracting Officer's Representative (COR). Work will include: 1) loading the debris, 2) hauling the debris to an approved dumpsite, and 3) dumping the debris at the dumpsite. Ineligible debris will not be loaded, hauled, or dumped under this contract. This work will involve primarily clearing the right-of-way (ROW) of streets and roads.

2.6. The Contractor shall not move from one designated work area to another designated work area without prior approval from the COR.

2.7. The Contractor shall conduct the work so as not to interfere with the disaster response and recovery activities of federal, state, and local governments or agencies, or of any public utilities.

2.8. The Contractor shall comply with U.S. Army Corps of Engineers' Safety and Health Requirements Manual (EM 385-1-1).



3 Debris Classification

3.1. Eligible Debris. Debris that is within the scope of this contract falls under three possible classifications Burnable, Non-Burnable, and Recyclable. Debris that is classified Hazardous or Toxic is not to be transported by this contract.

3.2. Burnable Debris. Burnable debris includes all biodegradable matter except that included in the following definitions of other categories of debris. It includes, but is not limited to, damaged and disturbed trees; bushes and shrubs; broken, partially broken and severed tree limbs; tree stumps with base cut measurements less than two (2) feet; untreated structural timber; untreated wood products; and brush.

3.3. Non-Burnable Debris. Non-burnable debris includes, but is not limited to, treated timber; plastic; glass; rubber products; metal products; sheet rock; cloth items; non wood building materials; and carpeting; recyclable debris including metal products (i.e. Mobile Trailer parts, Household appliances (White Metal), and similar items), or uncontaminated soil.

3.4. Hazardous Toxic Waste (HTW). Hazardous or toxic materials or waste such as petroleum products, paint products, asbestos, electrical transformers, and known or suspected hazardous materials shall be removed by others. Coordination for hazardous debris removal is the responsibility of the Government.

4 Dumpsites

4.1. The Contractor shall use only debris dumpsites designated and approved by the COR.

4.2. All dumping operations shall be directed by the dumpsite operator. The Contractor shall cooperate with the dumpsite operator to facilitate effective dumping operations.

5 Performance Schedule

5.1. The Contractor shall commence mobilization immediately upon award of the contract and designation of work areas by the COR and will commence debris removal operations within 24 hours of Notice to Proceed.

5.2. The Contractor shall work during daylight hours for [INSERT] hours per day, [INSERT] days per week.

6 Equipment

6.1. All trucks and other equipment must be in compliance with all applicable federal, state, and local rules and regulations. Any truck used to haul debris must be capable of rapidly dumping its load without the assistance of other equipment; be equipped with a tailgate that will effectively contain the debris during transport and permit the truck to be filled to capacity; and measured and marked for its load capacity. Sideboards or other extensions to the bed are allowable provided they meet all applicable rules and regulations, cover the front and both sides, and are constructed in a manner to withstand severe operating conditions. The sideboards are to be constructed of 2" by 6" boards or greater and not to extend more than two feet above the metal bed sides. All extensions are subject to acceptance or rejection by the Contracting Officer's representative. Equipment will be inspected prior to its use by the Contractor using applicable Corps of Engineers Forms (<http://www.publications.usace.army.mil/USACE>)



Publications/EngineerForms.aspx). The Forms will be provided to the Government after completion.

6.2. Trucks and other heavy equipment designated for use under this contract shall be equipped with two signs, one attached to each side. A total of [QUANTITY] signs will be provided by the Government and are to be returned to the Government prior to issuance of final payment. A fee of \$[AMOUNT] will be accessed against the final payment for each lost sign.

6.3. Prior to commencing debris removal operations, the Contractor shall present to the Government's representative all trucks or trailers that will be used for hauling debris, for the purpose of determining hauling capacity. Hauling capacity, in cubic yards, will be recorded and marked on each truck or trailer. Each truck or trailer will also be numbered for identification. The government reserves the right to re-measure trucks and trailers at any time during the contract and to use re-measurements as the basis for calculating loads for payment purposes.

6.4. Trucks or equipment which are designated for use under this contract shall not be used for any other work during the working hours of this contract. The Contractor shall not solicit work from private citizens or others to be performed in the designated work area during the period of this contract. Under no circumstances will the Contractor mix debris hauled for others with debris hauled under this contract.

7 Reporting

7.1. The Contractor shall submit a report to the COR by close of business each day of the term of the contract. Each report shall contain, at a minimum, the following information:

- Contractor's Name
- Contract Number
- Daily and cumulative hours for each piece of equipment
- Daily and cumulative hours for personnel, by position

8 Other Considerations

8.1. The Contractor shall supervise and direct the work, using qualified labor and proper equipment for all tasks. Safety of the Contractor's personnel and equipment is the responsibility of the Contractor. Additionally, the Contractor shall pay for all materials, personnel, taxes, and fees necessary to perform under the terms of this contract.

8.2. The Contractor must be duly licensed in accordance with the state's statutory requirements to perform the work. The Contractor shall obtain all permits necessary to complete the work. The Contractor shall be responsible for determining what permits are necessary to perform under the contract. Copies of all permits shall be submitted to the COR prior to issuance of a notice to proceed.

8.3. The Contractor shall be responsible for taking corrective action for any notices of violations issued as a result of the Contractors or any subcontractors actions or operations during the performance of this contract. Corrections for any such violations shall be at no additional cost to the Government.



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix J: Example Scopes of Work

8.4. The Contractor shall be responsible for control of pedestrian and vehicular traffic in the work area. The Contractor shall provide all flag persons, signs, equipment, and other devices necessary to meet federal, state, and local requirements. The traffic control personnel and equipment shall be in addition to the personnel and equipment required in other parts of this contract. At a minimum, one flag person should be posted at each approach to the work area.

9 Payment

9.1. The Contractor will be entitled to invoice for 60% of the mobilization and demobilization line item after all equipment is delivered to the designated work site. The remaining 40% will be due after all equipment is removed from the work site, all vehicle signs have been returned to the government, and the contractor has submitted a proper invoice.

9.2. Payment for work completed will be based on verified hours worked from the daily operational report. Equipment down time resulting from equipment failure, routine maintenance and fueling that exceeds fifteen (15) minutes of a work hour will be considered unacceptable work and non-payment for one half of that hour and the number of work hours will be reduced to exclude the down time (the minimum reduction shall be one-half hour).

9.3. All payments made under this contract will be in accordance with PAYMENTS clauses located in other sections of this contract.

10 Options

10.1 The option items listed in Schedule B (the bid Schedule) are for the purpose of extending this contract for seven (7) days at a time. These options will be exercised at the discretion of the Government in accordance with the OPTION TO EXTEND SERVICES clause located elsewhere in this contract.

11 Attachments

11.1 Daily Report Format

11.2 Sample Bidding Schedule

11.3 Operations Report

Daily Report						
CONTRACTOR:					DATE OF REPORT:	
CONTRACT NO.:						
Truck No.	Capacity	Burn Site Trips	C.Y. Totals	Landfill Trips	C.Y. Totals	
1						
2						



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix J: Example Scopes of Work

3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
DAILY GRAND TOTAL				C.Y.		C.Y.

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WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix J: Example Scopes of Work

Bidding Schedule					
CONTRACT NO.:					
ITEM	DESCRIPTION	HOURS	U/I	U/P	AMOUNT
001	Mobilize Equipment/Demobilize Equipment	JOBS			
002	One (1) Truck, Dump, 16-20 yd ³ capacity, with Operator	140.00			
003	One (1) Truck, Dump, 16-20 yd ³ capacity, with Operator	140.00			
004	One (1) Truck, Dump, 16-20 yd ³ capacity, with Operator	140.00			
005	One (1) Truck, Dump, 16-20 yd ³ capacity, with Operator	140.00			
006	One (1) Truck, Dump, 16-20 yd ³ capacity, with Operator	140.00			
007	One (1) Truck, Dump, 16-20 yd ³ capacity, with Operator	140.00			
008	One (1) Truck, Dump, 16-20 yd ³ capacity, with Operator	140.00			
009	One (1) Truck, Dump, 16-20 yd ³ capacity, with Operator	140.00			
010	One (1) Truck, Dump, 16-20 yd ³ capacity, with Operator	140.00			
011	One (1) Truck, Dump, 16-20 yd ³ capacity, with Operator	140.00			
012	One (1) Truck, Dump, 16-20 yd ³ capacity, with Operator	140.00			
013	One (1) Truck, Dump, 16-20 yd ³ capacity, with Operator	140.00			
014	One (1) Loader, Front-end, 3-5 yd ³ capacity, with Operator	140.00			
015	One (1) Loader, Front-end, 3-5 yd ³ capacity, with Operator	140.00			
016	One (1) Knuckleboom, 10 ton lifting capacity, with Operator	140.00			
017	Four (4) Laborers with Chainsaws, 16" min bar, traffic flags, and misc. small tools (axes, shovels, safety equip.)	140.00			



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix J: Example Scopes of Work

Bidding Schedule					
CONTRACT NO.:					
ITEM	DESCRIPTION	HOURS	U/I	U/P	AMOUNT
018	One (1) Truck, Pickup, 1/2-1 Ton, with crew foreman, and cellular phone	140.00			
019	One (1) Track Hoe, 2-3 yd ³ bucket with operator	100.00			
020	One (1) Low Bed Equipment Trailer , 20 Ton capacity, and Tractor Truck with operator	70.00			
TOTAL					

**WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN**

Appendix J: Example Scopes of Work

Bidding Schedule			
CONTRACT NO.:			
ITEM	DESCRIPTION	HOURS	U/I U/P AMOUNT
FIRST OPTION PERIOD			
021	One (1) Truck, Dump, 16-20 yd ³ capacity, with Operator	70.00	
022	One (1) Truck, Dump, 16-20 yd ³ capacity, with Operator	70.00	
023	One (1) Truck, Dump, 16-20 yd ³ capacity, with Operator	70.00	
024	One (1) Truck, Dump, 16-20 yd ³ capacity, with Operator	70.00	
025	One (1) Truck, Dump, 16-20 yd ³ capacity, with Operator	70.00	
026	One (1) Truck, Dump, 16-20 yd ³ capacity, with Operator	70.00	
027	One (1) Truck, Dump, 16-20 yd ³ capacity, with Operator	70.00	
028	One (1) Truck, Dump, 16-20 yd ³ capacity, with Operator	70.00	
029	One (1) Truck, Dump, 16-20 yd ³ capacity, with Operator	70.00	
030	One (1) Truck, Dump, 16-20 yd ³ capacity, with Operator	70.00	
031	One (1) Truck, Dump, 16-20 yd ³ capacity, with Operator	70.00	
032	One (1) Truck, Dump, 16-20 yd ³ capacity, with Operator	70.00	
033	One (1) Loader, Front-end, 3-5 yd ³ capacity, with Operator	70.00	
034	One (1) Loader, Front-end, 3-5 yd ³ capacity, with Operator	70.00	
035	One (1) Knuckleboom, 10 ton lifting capacity, with Operator	70.00	
036	Four (4) Laborers with Chainsaws, 16" min bar, traffic flags, and misc. small tools (axes, shovels, safety equip.)	70.00	
037	One (1) Truck, Pickup, 1/2 -1 Ton, with crew foreman, and cellular phone	70.00	
038	One (1) Track Hoe, 2-3 yd ³ bucket, with operator	50.00	
039	One (1) Low Bed Equipment Trailer, 20 Ton capacity, and Tractor Truck, with operator	35.00	
TOTAL			



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix J: Example Scopes of Work

Operational Report		
CONTRACTOR:		
GOV'T INSPECTOR CERTIFICATION		
Equipment	Total Hours Worked This Day	Total Hours Idle This Day
Dump Truck #		
Dump Truck #		
Dump Truck #		
Dump Truck #		
Dump Truck #		
Dump Truck #		
Dump Truck #		
Dump Truck #		
Dump Truck #		
Dump Truck #		
Dump Truck #		
Dump Truck #		
F.E. Loader #		
F.E. Loader #		
Dozer #		
Track Hoe #		
Knuckleboom #		
Knuckleboom #		
Knuckleboom #		
Pickup Truck #		
Labor Crew #		



Appendix J-2 Site Management for Debris Reduction

**Scope of Work for Site Management for Debris Reduction
Related To
[Name/Nature of Disaster]
At, In, Or Near
[Location of Recovery Efforts]**

1 General

- 1.1 The purpose of this contract is to provide site management and reduction of debris generated as a result of [NAME OF DISASTER] in [DISASTER LOCATION; i.e., "Washoe County in Nevada "] which have been declared disaster areas by the President because of the effects of [NAME OF DISASTER].
- 1.2 The Contractor shall manage and operate the debris reduction site located at [SITE LOCATION]. The site is approximately [SIZE] acres in total area. An outline of the site location is shown in the attached map.
- 1.3 Contractor shall provide all management, supervision, labor, machines, tools, and equipment necessary to accept, process, reduce, incinerate, and dispose of disaster related debris. The debris to be processed consists primarily of burnable debris, with variable amounts of non-burnable included. Segregation of debris into various categories will be required.
- 1.4 Reduction of burnable debris shall be through air-curtain incineration. [INCLUDE OR DELETE NEXT TWO SENTENCES] Reduction of burnable debris may also be accomplished through chipping/grinding. Reduction by this means, however, 1) must be at the same rate as indicated for incineration, and 2) disposal of the chips/mulch would be the responsibility of the Contractor, and 3) shall be done at no increased cost to the Government.

2 Services

- 2.1 Contractor will establish lined temporary storage areas for ash, hazardous and toxic waste, fuels, and other materials that can contaminate soils, runoff, or groundwater. Contractor shall set up plastic liners under stationary equipment such as generators and mobile lighting plants unless otherwise directed by the Contracting Officer's Representative (COR).
- 2.2 Contractor shall be responsible for establishing site layout.
- 2.3 Contractor will be responsible for traffic control, dust control, erosion control, fire protection, on-site roadway maintenance, and safety measures. The Contractor shall comply with U.S. Army Corps of Engineers' Safety and Health Requirements Manual (EM 385-1-1).
- 2.4 Contractor shall manage the site to accept debris collected under other contracts. Contractor shall direct traffic entering and leaving the site, and shall direct dumping operations at the site.
- 2.5 Contractor shall be responsible for sorting and stockpiling of debris at the site. Debris shall be segregated into 1) burnable debris, 2) non-burnable debris, 3) hazardous and toxic waste, and 4) ash residue. Further segregation of non-burnable debris, such as recyclable material or durable goods may be necessary. Debris classifications are defined in Section 3.0.



2.6 Contractor shall be responsible for disposal of non-burnable debris and ash residue.

Non burnable debris and ash shall be hauled to [NAME OF SITE OR LANDFILL, NOTE: SITE MUST HAVE SCALES.] for disposal. [SELECT ONE OF THE FOLLOWING SENTENCES] Tipping fees will be [PRICE PER TON] and will be the responsibility of the contractor for payment. [OR] Tipping fees will be the responsibility of the government. Removal of hazardous and toxic waste from the reduction site, including loading of hazardous and toxic waste at the site, will be performed under a separate contract.

2.7 Upon completion of the debris reduction process, the Contractor will clear the site of all debris (excluding hazardous and toxic waste) and restore the site to the satisfaction of the COR.

2.8 The Contractor shall conduct the work so as not to interfere with the disaster response and recovery activities of federal, state, and local governments or agencies, or of any public utilities.

3 Debris Classification

3.1 Eligible Debris. Debris that is within the scope of this contract falls under three possible classifications Burnable, Non-Burnable, and Hazardous and toxic waste.

3.2 Burnable Debris. Burnable debris includes all biodegradable matter except that included in the following definitions of other categories of debris. It includes, but is not limited to, damaged and disturbed trees; bushes and shrubs; broken, partially broken and severed tree limbs; untreated structural timber; untreated wood products; and brush.

3.3 Non-Burnable Debris. Non-burnable debris includes, but is not limited to, treated timber; plastic; glass; rubber products; metal products; sheet rock; cloth items; non wood building materials; and carpeting. Some non-burnable debris is recyclable. Recyclable debris includes metal products (i.e. Mobile Trailer parts, Household appliances (White Metal), and similar items), or uncontaminated soil.

3.4 Hazardous Toxic Waste (HTW). Hazardous or toxic materials or waste such as petroleum products, paint products, asbestos, electrical transformers, and known or suspected hazardous materials shall be removed by others. Coordination for hazardous debris removal is the responsibility of the Government.

3.5 Stumps. Tree stumps with base cut measurements less than two (2) feet in diameter will be disposed of with the same methods used for other burnable debris. Tree stumps larger than two (2) feet in diameter will be disposed of by either splitting and burning, or chipping/grinding. The method will be at the discretion of the Contractor.

3.6 Ash. Ash is the residue produced by incineration of the burnable debris. When handling ash, it will be required to "wet down" the ash to prevent dust problems.

3.7 Chips/Mulch. Chips and mulch are the end product of chipping or grinding wood products. Proper disposal of chips and mulch is to find environmentally-friendly (non-landfill disposal) use for the material.

3.8 Hazardous Toxic Waste (HTW) Debris. Hazardous or toxic materials or waste such as petroleum products, paint products, asbestos, electrical transformers, and known or suspected hazardous materials that mistakenly enter the waste stream shall be placed in an appropriate storage area for removal by others.



4 Performance Schedule

4.1 Immediately following Bid Opening, the apparent low bidder will meet with the COR to discuss matters of judgment, safety, quality control, coordination, payment, record keeping, and reporting.

4.2 Schedule. The Contractor shall begin preparation for mobilization immediately after Notice to Proceed and be fully operational within [HOURS] hours after Notice to Proceed.

4.3 Production. The Contractor is required to process a minimum of [RATE], [*NOTE: MOST INCENERATORS BURN 150 TO 180 CY PER HOUR, ALLOW 4 HOURS DOWN TIME FOR SERVICE/ASH REMOVAL PER 24 HOURS*] cubic yards of debris per calendar day. The minimum required reduction/disposal rate shall be achieved no later than the second calendar day after receipt of Notice to Proceed. This minimum production rate is increased to [INCREASED RATE] in the event that the Government exercises the option for additional reduction capacity. Liquidated damages shall be assessed at \$[AMOUNT] per calendar day for any day in which the minimum processing rate is not met, unless non-compliance is due to insufficient debris amounts being delivered to the site.

4.4 Completion. All work, including site restoration prior to close-out, shall be completed within [DAYS] calendar days after receiving notice from the COR that the last load of debris has been delivered, unless the Government initiates additions or deletions to the contract by written change orders. Subsequent changes in completion time will be equitably negotiated by both parties pursuant to applicable state and federal law. Liquidated damages shall be assessed at \$ [AMOUNT] per calendar day for any time over the maximum allowable time established above.

5 Equipment

5.1 The Contractor shall provide all equipment necessary to prepare the site, stockpile the debris, feed the air-curtain incinerator(s), remove ash from the incinerator(s), load and haul for disposal all non-burnable debris and ash residue, and any other equipment which may be necessary for the performance of this contract. The Contractor shall comply with EM 385-1-1.

5.2 All equipment must be in compliance with all applicable federal, state, and local rules and regulations. All equipment and operator qualifications will meet the requirements of EM 385-1-1. Equipment will be inspected prior to its use by the Contractor using the applicable Corps of Engineers Forms (i.e. SAD Form 1666R). The completed forms will be provided to the Government.

5.3 Prior to commencing debris reduction and disposal operations, the Contractor shall present to the Contracting Officer or his representative, the COR, for approval, a detailed description of all equipment to be used for debris handling, sorting, processing, incinerating, loading, and hauling, stating brand name, model and horsepower,(including all air-curtain incinerators).

5.4 Equipment which is designated for use under this contract shall not be used for any other work during the working hours of this contract. The Contractor shall not solicit work from private citizens or others to be performed in the designated work area during the period of this contract. Under no circumstances will the Contractor mix debris hauled or processed for others with debris hauled or processed under this contract.



5.5 Reduction of burnable debris may be by either air-curtain pit burning or portable-air curtain incinerators. Section 6.0 specifies requirements for air-curtain pit burning. Section 7.0 specifies requirements for portable air-curtain incinerators.

[DELETE NEXT SECTION IF CHIPPING/GRINDING/MULCHING NOT ALLOWED IN CONTRACT]

5.6 Reduction of burnable wood debris may also be accomplished by chipping and grinding, provided the processing rate given in Section 4.3 can be maintained. Section 8.0 specifies requirements for chipping and grinding procedures.

6 Air-Curtain Pit Burning

[SELECT ONE OF THE NEXT TWO PARAGRAPHS AND DELETE THE OTHER, DEPENDENT UPON WHETHER THE PIT IS TO BE CONSTRUCTED ABOVE GROUND OR DUG DOWN, BASED ON WATER TABLE]

[BELOW-GRADE PIT; LOW WATER TABLE]

6.1 The air-curtain pit burning method incorporates an earthen pit, constructed by digging below grade, and a blower. The blower and pit make up an engineered system which must be precisely configured to properly function. The blower must have adequate air velocity to provide a "curtain effect" to hold smoke in and to feed air to the fire below. The pit configuration must have a precise width, depth and length to compliment the blower. The composition and operation of the air-curtain pit incinerator(s) shall conform generally to the drawings in Figures 1 and 2 of this scope of work.

[ABOVE-GRADE PIT; HIGH WATER TABLE]

6.2 The air-curtain pit burning method incorporates an earthen pit, constructed by building above grade, and a blower. The blower and pit make up an engineered system which must be precisely configured to properly function. The blower must have adequate air velocity to provide a "curtain effect" to hold smoke in and to feed air to the fire below. The pit configuration must have a precise width, depth and length to compliment the blower. The composition and operation of the air-curtain pit incinerator(s) shall conform generally to the drawings in Figures 1 and 2 of this scope of work.

6.3 Minimum required air velocity measured at the nozzle is 8,800 ft/min (100 mph). Minimum air flow rate measured at the nozzle is 900 cubic feet per min per linear foot of pit length. (As an example, a 20 ft long pit would require a blower with a nozzle velocity of 8,800 ft/min and nozzle output rate of 18,000 cfm. This example is intended for explanation purposes only, and does not imply a recommended pit length for actual operations.)

6.4 The pit should be a maximum of 8 feet wide, and should be from 12 to 20 feet deep. The actual pit dimensions should be such that the system functions properly.

6.5 Pits must be constructed out of a highly compactable material that will hold its shape and support the weight of the loading equipment. There shall be an impervious layer of clay or limestone on the bottom of the pit to provide a barrier for ground water protection. This layer shall be a minimum of one (1) foot thick and be repaired as necessary after each ash removal operation.



- 6.6 There is to be a minimum distance of 100 feet between the burn area and the nearest debris piles. There is to be a minimum distance of 1000 feet between the burn area and the nearest building. Contractors are responsible for assuring that the public and workers are kept a safe distance from the burn site.
- 6.7 The burn will be extinguished at least two hours before removal of the ash mound. Wetting of the ash will be necessary to reduce dust while removing ash.
- 6.8 The burn pits must be made of limestone or other highly compactable material and be capable of supporting the wheel weight of the loading equipment. There should be an impervious layer of clay or limestone on the bottom of the pit to attempt to seal the ash from the aquifer. This impervious layer should be at least one foot thick, and should be repaired or replaced if scraped by bulldozers, excavators, or other equipment.
- 6.9 The ends of the pits must be sealed with dirt ash or other material to a height of four feet.
- 6.10 A twelve-inch dirt seal must be placed on the lip of the burn pit area to seal the blower nozzle. The nozzle should be three-to-six inches from the edge of the pit.
- 6.11 There should be one-foot high warning stops running the length of the pits to alert equipment operators when they are close to the pit. The warning stops should be constructed of fireproof material.
- 6.12 No hazardous or contained-ignitable material is to be dumped into the pit.
- 6.13 The air flow should hit the wall of the pit at about two feet below the edge of the pit and the debris should not break the path of the air flow, except during dumping.
- 6.14 The length of the pit should be no longer than the length of the blower system, and the pit should be loaded uniformly along the length.
- 6.15 The contractor is responsible for ensuring that the public is protected from the burn operation. Signs, fences, and other measures can be used depending on site conditions.
- 6.16 Emissions must meet state and federal standards for burning operations.
- 6.17 The Contractor shall be responsible for dust control while handling ash materials.

7 Portable Air Curtain Incinerators

- 7.1 Portable incinerators use the same principles as air-curtain pit systems. The primary difference being portable incinerators utilize a pre-manufactured pit in lieu of an on-site constructed earth or limestone pit. The pits are engineered to precise dimensions to compliment the blower systems. The composition and operation of the air-curtain pit incinerator(s) shall conform generally to the drawings in Figures 1 and 2 of this scope of work.
- 7.2 Minimum required air velocity measured at the nozzle is 8,800 ft/min (100 mph). Minimum air flow rate measured at the nozzle is 900 cubic feet per min per linear foot of pit length. (As an example, a 20 ft long pit would require a blower with a nozzle velocity of 8,800 ft/min and nozzle output rate of 18,000 cfm. This example is intended for explanation purposes only, and does not imply a recommended pit length for actual operations.)
- 7.3 There is to be a minimum distance of 100 feet between the portable incinerator and the nearest debris piles. There is to be a minimum distance of 1000 feet between the portable



incinerator and the nearest building. Contractors must assure that the public and workers are kept a safe distance from the incinerator.

7.4 The burn will be extinguished at least two hours before removal of the ash.

7.5 There should be one-foot high warning stops running the length of the pits to alert equipment operators when they are close to the pit. The warning stops should be constructed of fireproof material.

7.6 No hazardous or contained-ignitable material is to be dumped into the pit.

7.7 The contractor is responsible for ensuring that the public is protected from the burn operation. Signs, fences, and other measures can be used depending on site conditions.

7.8 Emissions must meet state and federal standards for burning operations.

7.9 The Contractor shall be responsible for dust control while handling ash materials.

[DELETE ENTIRE NEXT SECTION IF CHIPPING/GRINDING NOT ALLOWED; IF THIS SECTION IS DELETED, REMAINING SECTION NEED TO BE RE-NUMBERED]]

8 Chipping and Grinding

8.1 If the Contractor chooses to use chipping/grinding as a method of debris reduction, it is the Contractor's responsibility to acceptably dispose of the chips or mulch, at no additional cost to the Government. Because the volume reduction achieved by chipping/grinding is not as great as the volume reduction achieved by incineration, disposal of the chips or mulch in a landfill is not an acceptable means of disposal. For disposal, the chips or mulch must be put to some benefit or use. The Contractor may provide or sell the chips or mulch to be recycled for use in agricultural mulch, fuel, or wood products.

8.2 The average chip size produced will be dependent on the needs of the end user, but typically should not exceed 4 inches in length and 1/2 inch in diameter.

8.3 Contamination: Contaminates are all materials other than wood products. Contaminates must be held to 10% or less for the chips or mulch to be acceptable. Plastics should be eliminated completely. To help eliminate contaminants, root rake loaders should be used to feed or crowd material to the chipper/grinder. Bucket loaders tend to scoop up earth, which is a contaminate. The use of hand laborers must be utilized to pull out contaminants prior to feeding the chipper/grinders. The more contaminants, the more numerous the laborers. Shaker screens are required when processing stumps with root balls or when large amounts of soil are present in the vegetative debris.

8.4 Storage: Chips/mulch should be stored in piles no higher than 15 feet, and meet all State and Local laws.

9 Reporting

9.1 The Contractor shall submit a report to the COR no later than [TIME] each day. Each report shall contain, at a minimum, the following information:

- a) Contractor's Name
- b) Contract Number



- c) Daily and cumulative totals of debris processed, to include method(s) of processing and disposal location(s).
- d) Daily estimate of HTW debris segregated, and cumulative amount of HTW placed in the designated holding area.
- e) Any problems encountered or anticipated.

10 Site Considerations

10.1 Site Plan. The Contractor will provide a site operations plan for review and approval by the COR prior to beginning work. At a minimum, the plan will address the following:

- a) Access to site
- b) Site management, to include point-of-contact, organizational chart, etc.
- c) Traffic control procedures
- d) Site security
- e) Site safety
- f) Site layout/segregation plan
- g) HTW materials plan
- h) Environmental mitigation plan, including considerations for smoke, dust, noise, traffic, buffer zones, and storm water runoff as appropriate.

10.2 Site Preparation. The Contractor shall be responsible for preparing the site(s) to accept the debris. This preparation shall include clearing, erosion control, grading, construction and maintenance of haul roads and entrances. The Contractor shall provide utility clearances and sanitation facilities, if needed. The Contractor shall protect existing structures at the sites and repair any damage caused by his operations at no additional cost to the Government.

10.3 Site Security. The Contractor shall be responsible for installing site security measures and maintaining security for his operations at the site.

10.4 Fire Protection. The Contractor shall manage the site to minimize the risk of fire.

10.5 Ash Containment Area. The Contractor shall be responsible for the storage, removal, and containment of ash from all burning operations. The containment area will be "wetted down" periodically under this contract to prevent particles from becoming airborne.

10.6 Inspection Tower. The contractor shall construct an inspection tower. The tower shall be constructed using pressure treated wood. The floor elevation of the tower shall be 10 foot above the existing ground elevation. The floor area shall be 8' by 8', constructed of 2"x 8" joists, 16" O.C. with 3/4" plywood supported by four 6" x 6" posts. The perimeter of the floor area shall be protected by a 4 foot high wall constructed of 2" x 4" studs and 1/2" inch plywood. The floor area shall be covered with a corrugated tin roof. The roof shall provide a minimum of 6'-6" of head room below the support beams. Access shall be provided by wooden steps with a hand rail

10.7 Traffic Control. The Contractor shall be responsible for control of pedestrian and vehicular traffic in the work area. Contractor shall provide all flag persons, signs, equipment,



and other devices necessary to meet federal, state, and local requirements. The traffic control personnel and equipment shall be in addition to the personnel and equipment required in other parts of this contract. As a minimum, one flag person shall be posted at each entrance to direct traffic to the site.

10.8 Site Closure. The Contractor shall be responsible for the closure of the debris site within [INSERT] calendar days of receiving the last load of disaster-related debris. This closure shall include removal of site equipment, debris, and all remnants from the processing operation (such as temporary toilets, observation towers, security fence, etc.), and grading the site, and restoring the site to pre-work conditions. The site will be restored in accordance with all State and Local requirements. The Contractor is responsible for the proper disposal of non-burnable debris, ash, and wood chips. Disposal of the HTW debris is not the responsibility of the Contractor under this contract. The Contractor shall receive approval from the COR as to the final acceptance of a site closure. Final payment shall be released to the Contractor upon acceptance by the Contracting Officer.

11 Hazardous or Toxic Waste Issues

11.1 The Contractor will be required to construct a containment area at the reduction site. This containment area will consist of a earthen berm with a non-permeable soil liner. The HTW containment area must be covered at all times with a non-permeable cover.

11.2 Any material which is found to be classified as HTW shall be reported immediately to the designated COR. This material shall be segregated from the remaining debris using a method which will allow the remaining non-HTW debris to be processed. All HTW debris will be moved and placed in the designated HTW containment area.

11.3 Disposal of the HTW debris will be by separate contract.

12 Contractor HTW Spills

12.1 The Contractor shall be responsible for reporting to the COR and cleaning up all hazardous materials or waste spills caused by the Contractor's operations at no additional cost to the Government.

12.2 Immediate containment actions shall be taken as necessary to minimize effect of any spill or leak. Cleanup shall be in accordance with applicable federal, state, and local laws and regulations.

12.3 Spills other than on-the-site shall be reported to the National Response Center, and the Contracting Officer immediately following discovery. A written follow-up shall be submitted to the COR not later than 7 days after the initial report. The written report shall be in narrative form, and as a minimum shall include the following:

- a) Description of the material spilled (including identity, quantity, manifest number, etc.).
- b) Determination as to whether or not the amount spilled is EPA/State reportable, and when and to whom it was reported.
- c) Exact time and location of spill, including description of the area involved.
- d) Receiving stream or waters.
- e) Cause of incident and equipment and personnel involved.



- f) Injuries or property damage.
- g) Duration of discharge.
- h) Containment procedures initiated.
- i) Summary of all communications the Contractor has had with press, agencies, or Government officials other than COR.
- j) Description of cleanup procedures employed or to be employed at the site, including disposal location of spill residue.

13 Other Considerations

13.1 The Contractor shall supervise and direct the work, using qualified labor and proper equipment for all tasks. Safety of the Contractor's personnel and equipment is the responsibility of the contractor. Additionally, the Contractor shall pay for all materials, personnel, taxes, and fees necessary to perform under the terms of this contract.

13.2 The Contractor must be duly licensed in accordance with the state's statutory and regulatory requirements to perform the work. The Contractor shall obtain all permits necessary to complete the work. The Contractor shall be responsible for determining what permits are necessary to perform under the contract. Copies of all permits shall be submitted to the COR.

13.3 The Contractor shall be responsible for correcting any notices of violations issued as a result of the Contractors or any subcontractors actions or operations during the performance of this contract. Corrections for any such violations shall be at no additional cost to the Government.

14 Measurements

14.1 Measurements of debris processed is based upon Cubic Yard measurements of debris delivered to the site.

14.2 Measurement of non-burnable debris and ash is based upon Ton measurements measured at the landfill or final disposal site.

14.3 All efforts required in mobilization, site set-up, site close-out, and demobilization shall be considered as a total Job.

15 Payment

15.1 Payment for all debris sorted, segregated, processed, reduced, and disposed by burning will be made at the unit price per cubic yard.

15.2 Payment for managing and operating the debris sites; furnishing plant, material, labor, tools and equipment necessary to process/reduce/dispose of debris; and providing for traffic control, dust control, erosion control, inspection tower, lighting, ash containment, fire protection, permits, environmental monitoring, and safety measures; are all incorporated in the bidder's unit price for burning.

15.3 Payment for loading and hauling non-burnable debris to the final disposal site will be by the Ton.



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix J: Example Scopes of Work

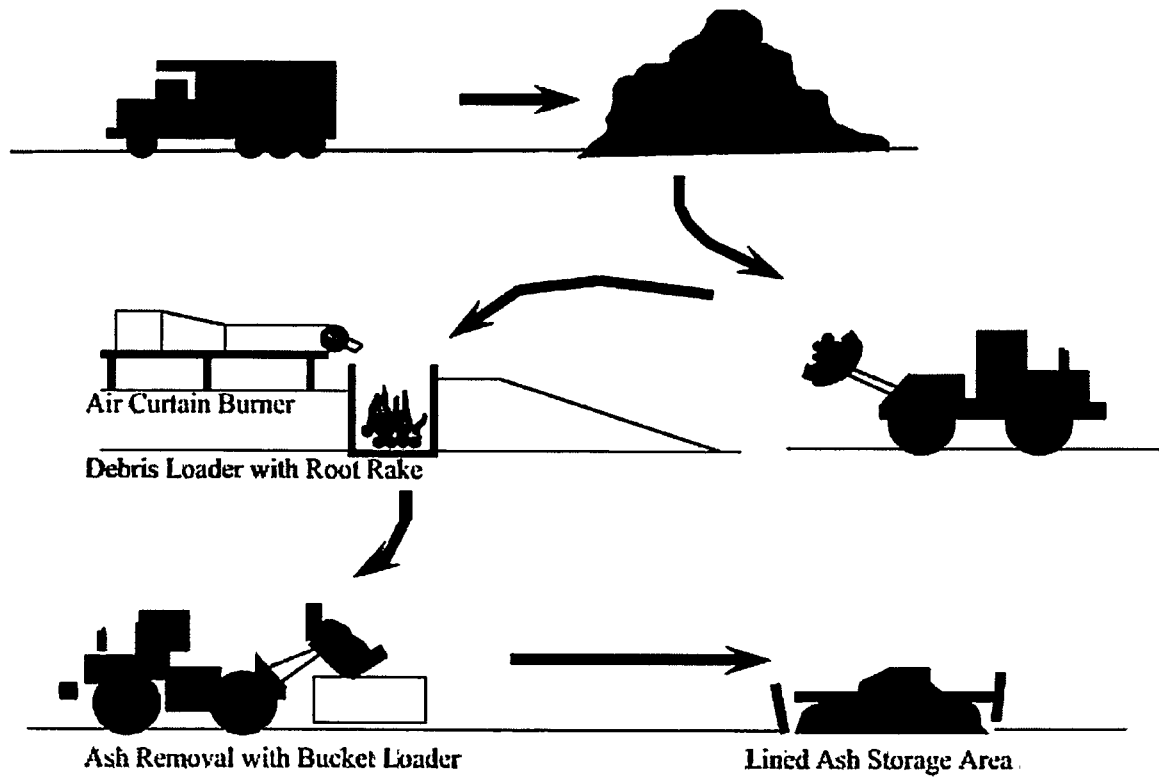
15.4 The Contractor will be entitled to invoice for mobilization after all equipment is delivered to and operational at the work site. Demobilization cost will be due after all equipment is removed from the work site. Payment for mobilization and demobilization will be per job.

15.5 Payment for site preparation and site closure will be per job.

Bidding Schedule					
CONTRACT NO.:					
ITEM	DESCRIPTION	QTY	UNIT OF ISUE	UNIT PRICE	AMOUNT
1.	Mobilization	1	Job	XXX	\$
2.	Reduction of Burnable Debris through the Air Curtain Incineration.		Cu. Yd.	\$	\$
3.	Disposal of Non- Burnable Debris and Ash		Ton	\$	\$
4.	Site Preparation and Site Closure		Job	XXX	\$
[DELETE THE NEXT BID ITEM IF CHIPPING & GRINDING IS NOT ALLOWED IN THE CONTRACT.]					
5.	Reduction of Burnable Debris by Chipping and Grinding		Cu. Yd.	\$	\$
6.	Reduction of Stumps greater than 24" in diameter, but less than 36" in diameter		Stump	\$	\$
7.	Reduction of Stumps 36" in diameter, but less than 48" in diameter as		Stump	\$	\$
8.	Reduction of Stumps 48" in diameter or greater		Stump	\$	\$
9.	Demobilization	1	Job	XXX	

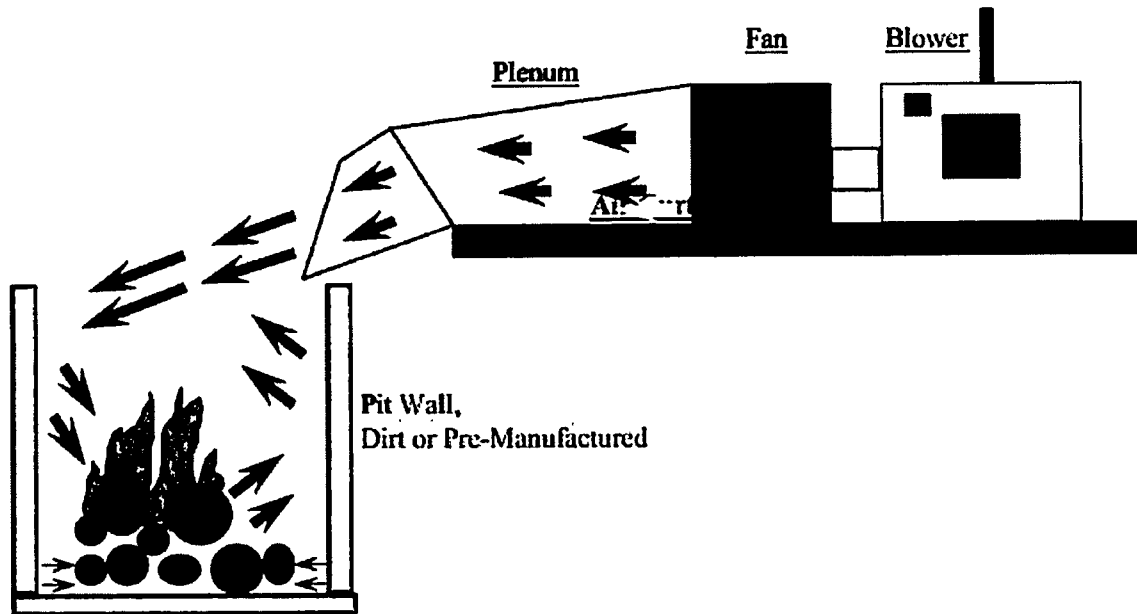


Flow Diagram for a Burning Operation





Overview of an Air Curtain Operation



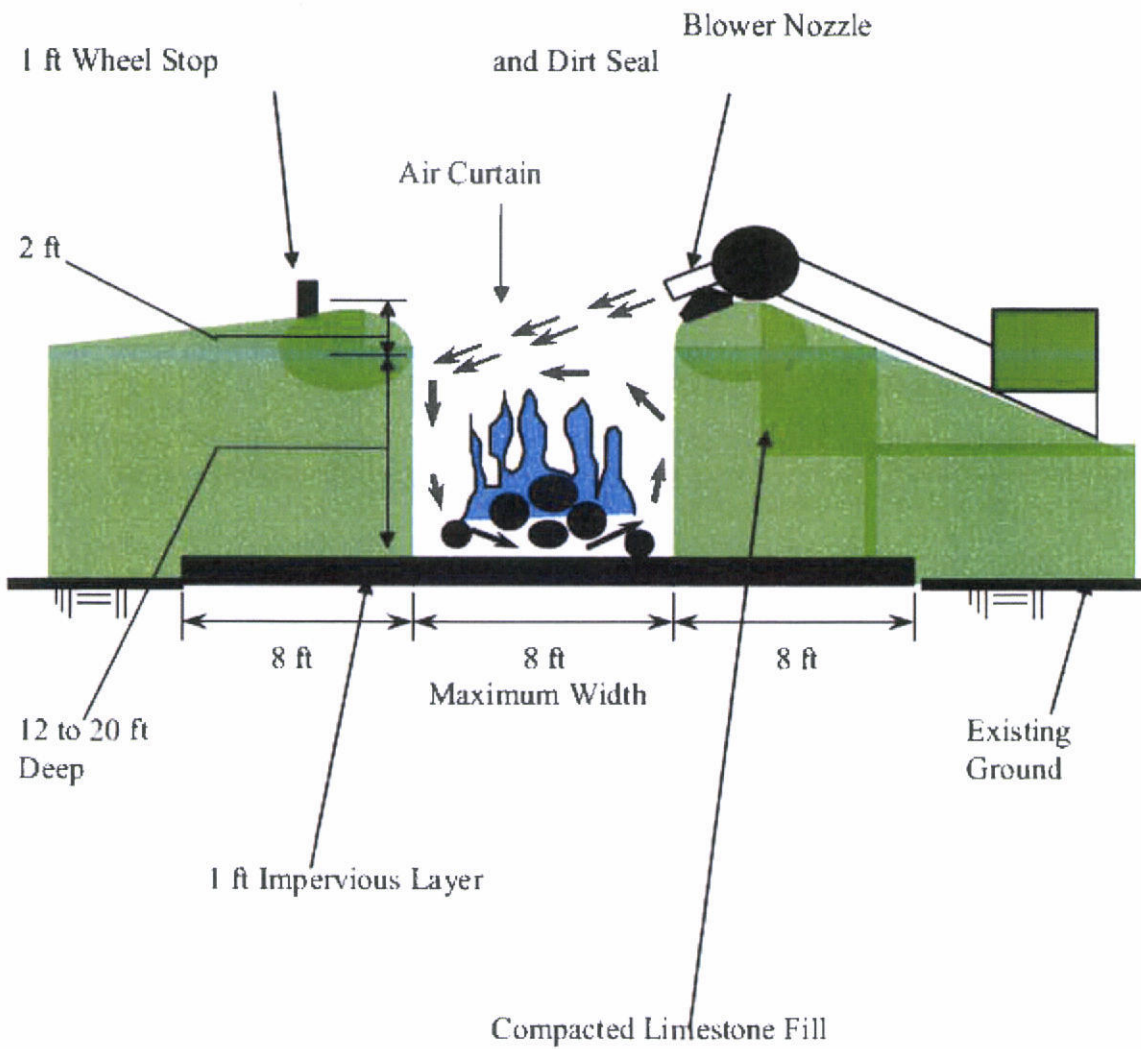
A power source, either electric motor or diesel power unit, drives a fan which in turn creates an air curtain by forcing air through a plenum and nozzle. This high velocity air travels across the top of the pit which a fire has been started.

The air curtain traps smoke and small particles and re-circulates them to enhance combustion and reduce smoke. The very large volume of air accelerates combustion and provides for high pit temperatures between 1800 degrees F and 2200 degrees F.

The pit provides a safe combustion chamber that helps prevent heat loss.

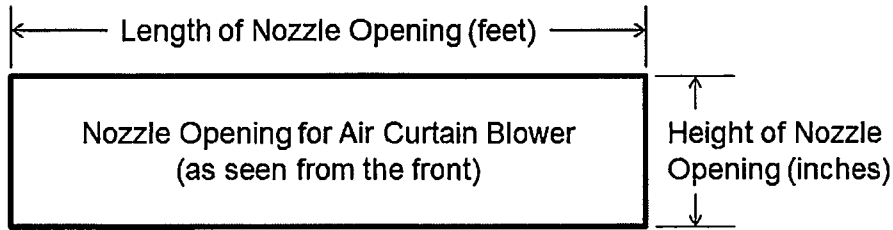


Air Curtain Pit Burner





Minimum Velocity and Volume Requirements for Air Curtain Blowers



Measure the velocity of the air curtain 1 inch in front of the nozzle opening using a hot-wire anemometer or other high accuracy velocity measuring instrument. The instrument must be capable of measuring velocities of up to 11,000 feet/minute. The instrument must be placed properly (parallel to the airflow) to obtain correct and reliable readings.

Take 5 air velocity readings, evenly distributed across the face of the opening. The minimum velocity for any of the 5 readings should not be less than 8,800 feet/minute. An average velocity can then be calculated with the following formula:

$$\text{Average Velocity (V)} = \frac{\text{Reading 1} + \text{Reading 2} + \text{Reading 3} + \text{Reading 4} + \text{Reading 5}}{5}$$

The volume rate of airflow exiting the air curtain nozzle can then be found by multiplying the average velocity with the area of the nozzle opening. Assuming that the velocity is measured in feet/minute, the nozzle length is measured in feet, and the nozzle height is measured in inches, then the volume rate of airflow can be calculated using the following formula:

$$VA = \frac{V \times L \times H}{12}$$

- where: L = length of opening (feet)
- H = height of nozzle opening (inches)
- V = average velocity (feet/minute)
- VA = volume rate of airflow (cubic feet/minute)

The volume rate of air flow should not be less than:

- 18,000 cfm for a 20 ft nozzle length
- 22,000 cfm for a 25 ft nozzle length
- 27,000 cfm for a 30 ft nozzle length
- 36,000 cfm for a 40 ft nozzle length



Appendix J-3 Unit Price Contract for Debris Removal

Scope of Work for Unit Price Contract for Debris Removal

Related To
[Name/Nature of Disaster]
At, In, Or Near
[Location of Recovery Efforts]

1 General

1.1 The purpose of this contract is to provide debris clearing and removal response assistance to [LOCATION; i.e., "Washoe County in Nevada"] which have been declared disaster areas by the President because of the effects of [NAME OF DISASTER].

2 Services

2.1 The Contractor shall provide for debris removal from the area(s) outlined on the attached maps, and described as: [DESCRIPTION OF WORK AREA].

2.2 The debris shall be taken to the dumpsite(s) indicated on the attached maps, located at [LOCATION(S) OF DUMPSITE(S)].

2.3 The total amount of debris to be removed under this contract is estimated to be [QUANTITY].

2.4 The work shall consist of clearing and removing any and all "eligible" debris (see section 4.0 for a definition of eligible debris) primarily from the public right-of-way (ROW) of streets and roads, as directed by the Contracting Officer's Representative (COR). Work will include 1) examining debris to determine whether or not debris is eligible, burnable or non-burnable, 2) loading the debris, 3) hauling the debris to an approved dumpsite or landfill, and 4) dumping the debris at the dumpsite or landfill. Ineligible debris will not be loaded, hauled, or dumped under this contract. Burnable debris will be loaded separately from non-burnable debris. Mixed loading of burnable and non-burnable will be kept to a minimum. The COR will determine the appropriate dump site for mixed loads.

2.5 Debris removal shall include all eligible debris found on the ROW within the area designated by the COR. The COR may specify any eligible debris within the ROW which should not be removed, or which should be removed at a later time. The Contractor shall make as many passes through the designated area as required by the COR. The Contractor shall not move from one designated work area to another designated work area without prior approval from the COR. Any eligible debris, such as fallen trees, which extends onto the ROW from private property shall be cut at the point where it enters the ROW, and that part of the debris which lies within the ROW shall be removed. The Contractor shall not enter onto private property during the performance of this contract.

2.6 The Contractor shall conduct the work so as not to interfere with the disaster response and recovery activities of federal, state, and local governments or agencies, or of any public utilities.



2.7 All work shall be accomplished in a safe manner in accordance with [INSERT HEALTH AND SAFETY CODE].

3 Load Tickets

3.1 "Load tickets" will be used for recording volumes of debris removal.

3.2 Each ticket will contain the following information:

1. Ticket Number
2. Contract Number
3. Date
4. Contractor Name
5. Site Departure Time
6. Dump Arrival Time
7. Debris Classification
8. Debris Quantity

3.3 [SELECT ONLY ONE OF THE FOLLOWING PARAGRAPHS, AND DELETE THE OTHERS]

Load tickets will be issued by a COR prior to departure from the loading site. The COR will keep one copy of the ticket, and give three copies to the vehicle operator. Upon arrival at the dumpsite, the vehicle operator will give the three copies to the COR at the dumpsite, the COR will validate, retain one copy and give two copies to driver for the Contractor's records, (one copy for the sub-contractor and one copy for the prime contractor).

Load tickets will be issued by a COR prior to departure from the loading site. The COR will keep one copy of the ticket, and give two copies to the vehicle operator for the Contractor's records.

Load tickets will be issued by a COR to a vehicle operator upon arrival at the dumpsite. The COR will keep one copy of the ticket, and give two copies to the vehicle operator for the Contractor's records.

4 Debris Classification

4.1 Eligible Debris. Debris that is within the scope of this contract falls under three possible classifications Burnable, Non-Burnable, and Recyclable. Debris that is classified Hazardous or Toxic is not to be transported by this contract.

4.2 Burnable Debris. Burnable debris includes all biodegradable matter except that included in the following definitions of other categories of debris. It includes, but is not limited to, damaged and disturbed trees; bushes and shrubs; broken, partially broken and severed tree limbs; untreated structural timber; untreated wood products; and brush.

4.3 Non-Burnable Debris. Non-burnable debris includes, but is not limited to, treated timber; plastic; glass; rubber products; metal products; sheet rock; cloth items; non wood building



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix J: Example Scopes of Work

materials; metal products (i.e. Mobile Trailer parts, Household appliances (White Metal), and similar items), or uncontaminated soil; roofing materials; and carpeting.

4.4 **Hazardous Toxic Waste (HTW).** Hazardous or toxic materials or waste such as petroleum products, paint products, asbestos, electrical transformers, and known or suspected hazardous materials shall be removed by others. Coordination for hazardous debris removal is the responsibility of the Government.

4.5 **Stumps.** Tree stumps located within the ROW with are one-half or more of the root ball exposed will be removed. Tree stumps with base cut diameter measurements less than or equal to 24 inches (measured 24 inches up from where the tree originally exited the ground) will be considered to be burnable debris and removed of with the same methods used for other burnable debris. Tree stumps larger than 24 inches in diameter will be removed of as burnable and paid for in accordance to the MEASURMENT and PAYMENT paragraphs in this contract.

5 Dumpsites

5.1 The Contractor shall use only debris dumpsites designated in Section 2.2, unless otherwise approved by the COR. The Contractor shall haul non-burnable debris to the site designated for non-burnable debris and burnable debris to the burn sire designated.

5.2 All dumping operations shall be directed by the dumpsite operator. The Contractor shall cooperate with the dumpsite operator to facilitate effective dumping operations.

5.3 The Government makes no representations regarding the turn-around time at the dumpsites.

6 Performance Schedule

6.1 The Contractor shall commence performance on [DATE].

6.2 The Contractor shall, with the CORs direction, provide a work plan showing where operations will begin and which streets/roads will be cleared on a 2, 7, & 14 day projection. The plan will be updated every two days.

6.3 Maximum allowable time for completion will be [ENTER] calendar days, unless the Government initiates additions or deletions to the contract by written change orders. Subsequent changes in completion time will be equitably negotiated by both parties pursuant to applicable state and federal law. Liquidated damages shall be assessed at \$[AMOUNT] per calendar day for any time over the maximum allowable time established by the contract.

7 Equipment

7.1 All trucks and other equipment must be in compliance with all applicable federal, state, and local rules and regulations. Any truck used to haul debris must be capable of rapidly dumping its load without the assistance of other equipment; be equipped with a tailgate that will effectively contain the debris during transport and permit the truck to be filled to capacity; and measured and marked for its load capacity. Sideboards or other extensions to the bed are allowable provided they meet all applicable rules and regulations, cover the front and both sides, and are constructed in a manner to withstand severe operating conditions. The sideboards are to be constructed of 2" by 6" boards or greater and not to extend more than two feet above the metal bed sides. All extensions are subject to acceptance or rejection by the



COR. All equipment will be inspected by the Contractor prior to use by using the applicable Corps of Engineers Forms. The Forms will be provided to the Government after completion.

7.2 Trucks and other heavy equipment designated for use under this contract shall be equipped with two signs, one attached to each side. These signs will be furnished to the Contractor by the Army Corps of Engineers. The signs remain the property of the United States Government, and will be returned to the Corps of Engineers at the conclusion of the contract.

7.3 Prior to commencing debris removal operations, the Contractor shall present to the Government's representative all trucks or trailers that will be used for hauling debris, for the purpose of determining hauling capacity. The hauling capacity will be based on the interior dimensions of the truck's metal dump bed. Hauling capacity, in cubic yards, will be recorded and marked on each truck or trailer with permanent markings. Each truck or trailer will also be numbered for identification with a permanent marking.

7.4 Trucks or equipment which are designated for use under this contract shall not be used for any other work during the working hours of this contract. The Contractor shall not solicit work from private citizens or others to be performed in the designated work area during the period of this contract. Under no circumstances will the Contractor mix debris hauled for others with debris hauled under this contract.

7.5 Equipment used under this contract shall be rubber tired and sized properly to fit loading conditions. Excessive size equipment (6 CY and up) and non-rubber tired equipment must be approved by the COR.

8 Reporting

8.1 The Contractor shall submit a report to the COR during each day of the term of the contract. Each report shall contain, at a minimum, the following information:

1. Contractor's Name
2. Contract Number
3. Crew
4. Location of work
5. Day of Report
6. Daily and cumulative totals of debris removed, by category

8.2 Discrepancies between the daily report and the corresponding load tickets will be reconciled no later than the following day.

9 Other Considerations

9.1 The Contractor shall supervise and direct the work, using skillful labor and proper equipment for all tasks. Safety of the Contractor's personnel and equipment is the responsibility of the Contractor. Additionally, the Contractor shall pay for all materials, personnel, taxes, and fees necessary to perform under the terms of this contract.

9.2 The Contractor must be duly licensed in accordance with the state's statutory requirements to perform the work. The Contractor shall obtain all permits necessary to complete



the work. The Contractor shall be responsible for determining what permits are necessary to perform under the contract. Copies of all permits shall be submitted to the COR.

9.3 The Contractor shall be responsible for taking corrective action in response to any notices of violations issued as a result of the Contractors or any subcontractors actions or operations during the performance of this contract. Corrections for any such violations shall be at no additional cost to the Government.

9.4 The Contractor shall be responsible for control of pedestrian and vehicular traffic in the work area. The Contractor shall provide all flag persons, signs, equipment, and other devices necessary to meet federal, state, and local requirements. The traffic control personnel and equipment shall be in addition to the personnel and equipment required in other parts of this contract. At a minimum, one flag person should be posted at each approach to the work area. Work shall be accomplished in a safe manner in accordance with EM 385-1-1.

10 Measurement

10.1 Measurement for burnable debris removed will be by the cubic yard as predetermined through truck bed measurement. Trucks with less than full capacities will be adjusted down by visual inspection by the COR. Measurement will be documented by Load tickets.

10.2 Measurement for non-burnable debris removed will be by the cubic yard as predetermined through truck bed measurement. Trucks with less than full capacities will be adjusted down by visual inspection by the COR. Measurement will be documented by Load tickets

10.3 Measurement for payment of stumps removed with 25 to 36 inch diameters base cuts (measured 24 inches up from where the tree originally exited the ground) shall be per stump.

10.4 Measurement for payment of stumps removed with 37 to 48 inch diameters base cuts (measured 24 inches up from where the tree originally exited the ground) shall be per stump.

10.5 Measurement for payment of stumps removed with 49 inch and larger diameters base cuts (measured 24 inches up from where the tree originally exited the ground) shall be per stump.

10.6 Measurement for mobilization and demobilization will be by the job.

11 Payment

11.1 Payment for the removal of burnable debris (including stumps 24 inches and smaller) to include all cost associated with loading, hauling and dumping will be paid for under the contract bid item for Burnable Debris.

11.2 Payment for the removal of non-burnable debris to include all cost associated with loading, hauling and dumping will be paid for under the contract bid item for Non-burnable Debris.

11.3 Payment for the removal of stumps, 25 inches and larger, to include all cost associated with loading, hauling and dumping will be paid for under the contract bid item for the appropriate size category for Stumps.

11.4 Payment for mobilization and demobilization will be paid for under the contract bid item for Mobilization and Demobilization.



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix J: Example Scopes of Work

11.5 Payment for work completed may be invoiced on a bi-weekly basis. Invoices will be based on verified quantities from the daily operational reports.

11.6 The Contractor will be entitled to invoice for 60% of the mobilization and demobilization line item after all equipment is delivered to the designated work site. The remaining 40% will be due after all equipment is removed from the work site, all vehicle signs have been returned to the government, and receipt of a proper invoice.

11.7 All payments made under this contract will be in accordance with PAYMENTS clauses located in other sections of this contract

12 Other Contracts

12.1 Other contracts may have been issued.

12.2 The Government reserves right to issue other contracts or direct other contractors to work within the area included in this contract.

13 Enclosures/Attachments

13.1 Bid Schedule

13.2 Daily Report



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix J: Example Scopes of Work

Bidding Schedule					
CONTRACT NO.:					
ITEM	QTY	DESCRIPTION	UNITS	UNIT PRICE	AMOUNT
1.	1	Mobilization and Demobilization	Lump Sum	\$	\$
2.	xxxx	Removal of Burnable Debris	Cubic Yard	\$	\$
3.	xxxx	Removal of Non-Burnable Debris	Cubic Yard	\$	\$
4.	xxxx	Removal of Stumps - 26 to 36 inch	Each	\$	\$
5.	xxxx	Removal of Stumps - 37 to 48 inch	Each	\$	\$
6.	xxxx	Removal of Stumps - 49 inch and larger	Each	\$	\$

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WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix J: Example Scopes of Work

Daily Report						
CONTRACTOR:				DATE OF REPORT:		
CONTRACT NO.:						
Truck No.	Capacity	Burn Site Trips	C.Y. Totals	Landfill Trips	C.Y. Totals	
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
DAILY GRAND TOTAL				C.Y.		C.Y.

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WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix J: Example Scopes of Work

Daily Report: Processing Sites				
CONTRACTOR:			DATE OF REPORT:	
CONTRACT NO.:				
	Processing Site	Stumps 24-36 in.	Stumps 36-48 in.	Stumps > 49"
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
DAILY GRAND TOTAL				

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Sample Load Ticket

LOAD TICKET			
Ticket no.:			
Contract no.:			
Contractor:			
Date:			
DEBRIS QUANTITY			
Truck No:		Capacity (CY):	
Load Size (Cy):		Tons:	
Truck Driver:			
DEBRIS CLASSIFICATION			
	Burnable		
	Non-burnable		
	Mixed		
	Other		
LOCATION			
Section/Area:		Dumpsite:	
	Time	Inspector	
Loading			
Dumping			
[Logo] [NAME OF MUNICIPALITY]	Original: Yellow: Pink: Gold:	Municipality Contractor Driver Sub-Contractor	

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Appendix J-4 Letter Contract for Debris Removal

**Scope of Work for Letter Contract for Debris Removal
Related To
[Name/Nature of Disaster]
At, In, Or Near
[Location of Recovery Efforts]**

1 General

1.1 The Contractor shall provide all labor, plant equipment, machines, and tools necessary to perform debris removal. Removal shall consist of loading [EVENT NAME] generated debris, as well as hauling and dumping the loaded debris in designated locations. The Contractor shall establish burning sites for road debris and coordinate with [CITY, COUNTY, ETC.]. The Contractor shall establish staging and waste reduction sites for construction and demolition debris in compliance with all applicable State and local ordinances and laws. All debris reduction sites must be approved by the Contracting Officer before the removal of road debris may begin. Burnable road debris will consist predominately of trees and vegetation in the public right-of-way. Burnable road debris will be hauled to a designated burning site and burned. Burnable road trash does not include construction and demolition debris. Construction and demolition debris will be hauled separately to different locations.

Construction and demolition debris will be separated into burnable and non-burnable according to instruction by the COR.

1.2 The Contracting Officer has the right to increase or reduce the contractor's area of operation.

2 Mobilization

2.1 Contractor is to immediately mobilize personnel and equipment for this task and shall be fully mobilized in 7 days within Work Area [NAME OF AREA]. Work within this area will be prioritized. Upon receipt of this task, the contractor will execute entire scope within 30 calendar days.

3 Schedule

3.1 Contractor is to provide an interim schedule within 48 hours and final plan within 5 days. This plan should include a plan for subcontracting activities and a safety plan.

3.2 Daily reporting is required with updates on the scheduled activities. This reporting shall include the following: name of the Contractor, contract number, number of trucks in use, number of front end loaders, and number of personnel working. The report should include daily and cumulative to date statistics on the number of truck loads and the number of cubic yards of debris hauled off. Each piece of operating equipment must be clearly identified.



4 Scope

4.1 Work within this area will be prioritized. The Contractor shall be prepared to respond within the frame work of the established schedule to priorities as they are established by the Government.

4.2 Many Government agencies will be working in the area, however, all coordination and direction shall be made through the COR.

4.3 The Contractor shall provide all labor, plant, equipment, machines and tools necessary to clear and remove burnable debris from roadway. Equipment should be in good working condition, and if equipment becomes inoperable, it shall be repaired within 4 hours or replace in kind within 24 hours.

4.4 The Contractor shall use only rubber-tired equipment in the performance of this contract. The Contractor shall not use equipment authorized for debris removal under this contract for private work during the working hours designated under this contract. Also, the Contractor's personnel shall not solicit work from private citizens or others with manpower and equipment designated under this contract. The Contractor shall be responsible for filling to grade with like material all surface damage, such as rutting and cracks, caused by the Contractor's equipment during debris removal. The Contractor shall repair all damage to existing grade, road shoulders, trees, shrubs, and grassed areas caused by the Contractor's equipment or personnel. The Contractor shall preserve and protect all existing vegetation such as trees, shrubs, and grass on or adjacent to the area of work. The contract duration will be established during the "definitization" process.

4.5 After being loaded in the work area, trucks shall have their loads trimmed so that no debris extends horizontally beyond the bed in any direction. All loose debris, such as tree limbs, shall be reasonably compacted on the hauling vehicle by use of the loading equipment. All debris shall be adequately secured while being transported to the designated reduction locations and any equipment that is hauling debris to the designated reduction site shall be capable of rapidly dumping its load without assistance from other equipment. Sideboards or other extensions to the bed are allowable provided they meet all applicable rules and regulations, cover the front and both sides, and are constructed in a manner to withstand severe operating conditions. The sideboards are to be constructed of 2"x 6" boards or greater and not to extend more than two feet above the metal bedsides. All extensions are subject to acceptance or rejection by the Contracting Officer's representative.

All trucks utilized in hauling debris will be provided with a tailgate that will effectively contain the debris on the vehicle while hauling and also permit the vehicle to be loaded to capacity

4.6 The Contractor is responsible for coordinating delivery of debris and access to the reduction locations. The Contractor shall coordinate, with [CITY, COUNTY, ETC.], set-up of the appropriate burning debris reduction locations. Contractor will be required to coordinate with [CITY, COUNTY, ETC.] in obtaining all applicable permits. The Contractor shall provide a burn management plan for review by the COR. The plan shall include a strategy for controlling and monitoring burning operations. The plan shall also include a firefighting capabilities design.

4.7 The Contractor shall remove all eligible debris from the designated areas and shall not move from one designated work area to another work area prior to receiving authorization from the COR.



4.8 Material will be separated into burnable, non-burnable and ineligible debris. Except as directed by COR. Ineligible debris, including hazardous waste, hazardous substance and toxics will be separated from burnable and non-burnable debris and left in place. Except those items directed by COR.

4.9 Definitions

4.9.1 Burnable debris: Burnable debris will be of two types (road debris and construction/demolition debris) with separate burn locations. Separate hauling of debris will be required.

4.9.1.1 Burnable road debris includes, but is not limited to, damaged and disturbed trees; bushes and shrubs; broken, partially broken and severed tree limbs and bushes. Burnable road debris consists predominately of trees and vegetation in the public right-of-way. Burnable road debris will be hauled to a designated burning site and burned. Burnable road trash does not include construction and demolition debris.

4.9.1.2 Burnable construction and demolition debris consists of non-creosote structural timber, wood products, and other materials designated by the COR.

4.9.2 Non-burnable Debris: Non-burnable construction and demolition debris include, but is not limited to, creosote timber; plastic; glass; rubber and metal products; sheetrock; and other building materials as may be designated by the COR.

4.9.3 Stumps: Tree remnants exceeding 24 inches in diameter, but no taller than 18 inches above grade, to include the stump ball. Any questionable stumps shall be referred to the designated COR for determination of its disposition.

4.9.4 Ineligible Debris: Ineligible debris to remain in place include, but is not limited to, chemicals, petroleum products, paint products, asbestos, power transformers.

4.10 Any material which is found to be classed as hazardous or toxic waste (HTW), as listed under ineligible debris above, shall be reported immediately to designated COR.

4.11 Inoperable automobiles, trucks, trailers, boats and boat trailers that obstruct or impede debris removal shall be removed by acceptable and approved towing methods. Removal shall be accomplished without causing further damage to item. Items shall be stored on site as directed by the designated COR. Contractor is to notify the COR and receive approval prior to removal of any personal property.

4.12 Standing broken utility poles; damaged and downed utility poles and appurtenances; transformers and other electrical material will be reported to COR.

4.13 The Contractor is to notify the COR of any situation which possess a health or safety risk to workers on site.

5 Demobilization

5.1 The Contractor shall provide a plan for demobilization upon completing 75% of designated task.

5.2 All equipment and staff will be removed from the zone within 7 days of completion of the work.

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Appendix J-5 Tree Removal

**Scope of Work for Tree Removal
Related To
[Name/Nature of Disasters]
At, In, Or Near
[Location of Recovery Efforts]**

1 General

1.1 The purpose of this contract is to provide tree removal response assistance generated as a result of [NAME OF DISASTER] in [DISASTER LOCATION, i.e., "Washoe County in Nevada "] which have been declared disaster areas by the President of the United States because of the effects of [NAME OF DISASTER].

1.2 The contractor should provide crews made up of a combination of equipment, operators and laborers as defined in the solicitation request. The total number of hours worked by each crew will be according to the needs of the Government. It is estimated that [SPECIFY NO. OF HOURS] hours of work will be performed by each crew. At the option of the Government, there may be additional crew hours, estimated at not more than [SPECIFY NO. OF HOURS] hours per crew, added to this contract.

1.3 The Contractor shall offer at least [SPECIFY NO. OF CREWS] crews, and may offer any greater number of crew.

1.4 The Contractor shall conduct the work so as not to interfere with the response and recovery activities of state and local governments, or of public utilities.

2 Work Area

2.1 The work area includes [SPECIFY DISASTER LOCATION; i.e., "Washoe County in Nevada "] which have been declared disaster areas due to the effects of [SPECIFY NAME OF DISASTER]. These counties are generally located in the [SPECIFY LOCATIONS] portions of the state. The Contractor may be required to work in any of these counties.

2.2 After contract awards, the Contractor shall commence work in an area at a location to be directed by the Contracting Officer's Representative (COR).

2.3 All work shall be performed in a safe manner in accordance with EM 385-1-1, Section 31, Tree Maintenance and Removal, in particular.

3 Performance Schedule

3.1 The Contractor shall commence performance within twenty-four (24) hours immediately after contract award and designation of work areas by the COR.

[DELETE THE FOLLOWING SECTION IF NOT APPLICABLE]

3.2 Consistent with curfew restrictions, the Contractor shall work during the daylight hours, not to exceed ten (10) hours per day, seven (7) days per week.



4 Equipment Use

4.1 The Contractor shall provide all equipment necessary for the performance of this contract.

4.2 All equipment must be in compliance with all applicable federal, state, and local rules and regulations. Equipment and Operator qualifications shall be in compliance with EM 385-1-1. Equipment will be inspected prior to its use by the Contractor using the applicable Corps of Engineers Forms. The Forms will be provided to the Government after completion.

4.3 Equipment which is designated for use under this contract shall not be used for any other work during the working hours of this contract. The Contractor shall not solicit work from private citizens or others to be performed in the designated work area during the period of this contract. Under no circumstances will the Contractor mix debris hauled or processed for others with debris hauled or processed under this contract.

5 Tree Removal

Trees that have fallen on homes or are threatening to fall on homes as a result of (Disaster) shall be removed under this contract. Trees removed under this contract shall be placed adjacent to streets adjoining the property and within the right-of-way of said adjacent street but not infringing upon the travel way of the street. The Contractor shall not move from one designated area to another designated work area prior to receiving authorization from the COR. The Contractor shall not enter onto private property during performance of this contract prior to receipt of an executed right-of-way entry that will be obtained by a Government Real Estate Specialist that will be accompanying or preceding the Contractor in the same area that the Contractor is working.

6 Traffic Control

The Contractor shall be responsible for control of pedestrian and vehicular traffic in the work area. The Contractor shall provide all flag persons, signs, equipment, and other devices necessary to meet federal, state, and local requirements. The traffic control personnel and equipment shall be in addition to the personnel and equipment required in other parts of this contract. At a minimum, one flag person shall be posted at each entrance to direct traffic to the site.

7 Reporting

The Contractor shall submit a report to the Contracting Officer's Representative no later than [SPECIFY TIME] each day. Each report shall contain at a minimum, the following information.

- a) Contractor's Name
- b) Contract Number
- c) Number of the various pieces of equipment in use
- d) Number of personnel working on the contract
- e) Daily and cumulative totals of hours each person and each piece of equipment worked.
- f) Daily and cumulative totals of trees removed per hour under the contract.
- g) Any problems encountered or anticipated.



8 Contract Award

8.1 The Government reserves the rights to award additional contracts within the counties referred to in paragraph entitled "WORK AREA". Awards under this solicitation will be made to responsive, responsible offerors, based on the lowest cost to the Government, considering the price and number of crews offered by the next lowest offerer, and continuing sequentially to the offer(s) of the subsequently next lower offer(s) until the Government's needs are met.

8.2 Prior to award, offerors may be required to provide evidence of responsibility and ability to timely perform the contract work. This may include the requirement to provide written documentation of ownership or confirmed rental or other immediate access to the offered equipment and personnel within the work area.

9 Other Considerations

9.1 The Contractor shall supervise and direct the work, using skillful labor and proper equipment for all tasks. Safety of the Contractor's personnel and equipment is the responsibility of the Contractor. Additionally, the Contractor shall pay for all materials, personnel, taxes, and fees necessary to perform under the terms of this contract.

9.2 The Contractor must be duly licensed to perform the work in the state per statutory requirements. The Contractor shall obtain all permits necessary to complete the work. The Contractor shall be responsible for determining what permits are necessary to perform under the contract. Copies of all permits shall be submitted to the Contracting Officer's Representative.

9.3 The Contractor shall be responsible for correcting any notices of violations issued as a result of the Contractors or any subcontractors' actions or operations during the performance of this contract. Corrections for any such violations shall be at no additional cost to the Government.

10 Payment

10.1 Payment for all trees removed will be made at the unit price per crew hours based on the contract bid price as specified in the bidding schedule.

10.2 Payment for managing and operating the sites, furnishing plant, material, labor, tools and equipment necessary to remove the trees, and providing for traffic control and safety measures, are all incorporated in the bidder's unit prices.

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WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix J: Example Scopes of Work

Bidding Schedule					
CONTRACT NO.:					
ITEM	QTY	DESCRIPTION	U/I	U/P	AMOUNT
1		Provide services for tree removal in accordance within the scope of work under this contract.	CREW HOURS	\$	\$

As a minimum, each crew shall consist of:

- 2 Labors
- 10 personnel with tree climbing capabilities
- 1 knuckle boom (or equivalent) or lift truck
- 2 chain saws
- Miscellaneous ropes, facale, and small tools

The Contractor shall state the number of crews available for this contract (2 crew minimum – second crew shall be available within 36 hours after contract award.)

Hours are limited. Payment will be made for actual crew hours worked.

The Contractor shall specify the number of crews available for this contract.

(no. of crews available)

Note: each crew is estimated to work 1000 hours

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Appendix J-6 Sunken Vessel Removal Operations

Scope of Work For
[Specify Name/Nature of Disaster]
Sunken Vessel Removal Operations
[Specify Name(S) of Vessels]
[Specify Location of Recovery Efforts]

1 General

1. The purpose of this contract is to provide removal and disposal of the sunken vessel(s) [specify name of vessel(s)] from [specify location of recovery efforts]. The exact location of the vessel(s) is shown on the contract drawing. The complete physical and structural condition of the vessel(s) is currently unknown. Some information as to vessel(s) type, size, and construction is described in the paragraph "Condition of Vessel(s)". The Contractor shall provide all plant, labor, equipment, materials, supplies, divers and services as necessary to remove and dispose of the sunken vessel(s). The Contractor may use any standard salvage method which complies with local and/or Federal laws and regulations. The intent of the contract is to have the vessel(s) raised and legally disposed of in accordance with applicable laws and regulations

2 Site Investigation and Conditions Affecting The Work

2.1 The Contractor acknowledges that he has taken steps reasonably necessary to ascertain the nature and location of the work, and that he/she has investigated and satisfied him/her self as to the general and local conditions which can affect the work or its cost. This includes but not limited to (1) conditions bearing upon transportation, disposal, handling, and storage of materials; (2) the availability of labor, water, electric power, and roads; (3) uncertainties of weather, river stages, tides, or similar physical conditions at the site; (4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during work performance. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the Government.

2.2 The Government assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Government. Nor does the Government assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

2.3 All work shall be accomplished in accordance with EM 385-1-1 and appropriate U. S. Coast Guard and other Federal, State and Local regulations. The Contractor shall comply with all appropriate safety practices, regulations and policies, to include personal flotation devices and water safety for all Contractor and Government personnel in or around the work area.



safety and health precautions to protect the work, the workers, the public, and the property of others. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work.

8 Bridge to Bridge Communications

Because this work will occur within a channel with heavy traffic, and in order that radio communication may be made with passing vessels, all tugs or salvage vessels that work under this contract shall be equipped with bridge-to-bridge radio telephone equipment. The radio equipment shall operate on a single channel of very high frequency (VHF) FM, on a frequency of [specify MC] MC per second with low power output having a communication range of approximately ten miles. The frequency has been approved by the Federal Communications Commission. Channels [specify channels] must be monitored at all times.

9 Contract Prices - Bidding Schedules

Payment for the work specified in the Bidding Schedule shall constitute full compensation for furnishing all plant, labor, equipment, supplies, and materials, and for performing all operations required to complete the work in accordance with the drawings and specifications. All costs for work not specifically mentioned in the Bidding Schedule shall be included in the contract price.

10 Misplaced Material

Should the Contractor, during the progress of the work, lose, dump, throw overboard, sink, or misplace any material, plant, machinery, or debris, the Contractor shall recover and remove the same with the utmost dispatch. The Contractor shall give immediate notice, with description and location of such obstructions, to the Contracting Officer or inspector, and when required shall mark or buoy such obstructions until the same are removed. Should the Contractor refuse, neglect or delay compliance with the above requirements, such obstructions may be removed by the Government, and the cost of such removal will be deducted from any money due or to become due the Contractor, or will be recovered under his bond. The liability of the Contractor for the removal of a vessel wrecked or sunk without fault or negligence shall be limited to that provided in Sections 15, 19, and 20 of the River and Harbor Act of March 3, 1899 (33 U.S.C. 419 et seq.).

11 Superintendence by the Contractor

At all times during performance of this contract and until the work is completed and accepted, the Contractor shall directly supervise the work and have on the work site a competent superintendent who has the authority to act and sign for the Contractor. All guidelines established in the paragraph "Contractor Quality Control" shall be followed.

12 Unidentified Objects

Should the Contractor, during salvage operations, encounter any objects or vessels on the channel bottoms, he shall notify the Contracting Officer immediately as to the location of object, and any other pertinent information necessary for the Contracting Officer's information and action as he determines to be necessary.



13 Inspection by the Government

13.1 Government personnel will inspect the salvage operations when in progress. The Contractor is required and shall furnish Government personnel transportation from shore to the site of salvage operations as necessary.

13.2 The Government intends to document the removal and disposal operations. The Contractor will be required to perform the work in an orderly fashion.

14 Payment

The Government will pay 60% of the mobilization and demobilization lump sum price when the Contractor has mobilized and arrived at the work site with the necessary plant and equipment to perform the job. The remaining portion of the mobilization and demobilization costs shall be paid in full when the Contractor has completed the job and submitted a proper invoice. The Contractor shall include, in the prices for the items listed in the Bidding Schedule, all costs for work in the scope of work, whether or not specially listed in the Bidding Schedule.

15 Work Schedule

The Contractor will be required to work as a minimum a ten (10) hour day six (6) days a week. Work day shall be normal daylight hours. The Contractor may work more than ten (10) hours per day if desired. Work hours and schedules to be discussed and approved by Contracting Officers Representative.

16 Commencement, Prosecution, and Completion Of Work

The Contractor shall be required to (a) commence removal operations under this contract within [specify no. of days] calendar days after the date the Contractor receives the Notice to Proceed, (b) prosecute the work diligently, and (c) to complete the work (raising, towing, re-sinking) in its entirety not later than [specify no. of days] calendar days after the date the Contract or receives the Notice to Proceed. The time stated for completion shall include final.

17 Removal and Disposal

17.1 Because of the lack of information available on the vessel(s) construction, the Contractor will have to perform a complete physical assessment of the vessel(s) structural stability prior to removal. The Contractor may utilize any standard removal method to complete the work defined in this contract. The Government does require that certain actions occur during the removal and disposal operation. If any of the said conditions are not met, then the Contractor will not have met the contract expectations and will be in violation of the Contract agreement. The Contractor shall be required to correct all deficiencies at no additional cost to the Government and without any further time extension.

17.2 Any deviations from these general guidelines must be discussed with and approved by the Contracting Officer prior to taking action.

18 Protection of Existing Structures, Equipment, and Utilities

18.1 The Contractor shall preserve and protect all structures, equipment, vegetation, and utilities at or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required at the work site. The Contractor shall repair any damage to those facilities, including those that are property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in



performing the work. If the Contractor refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

18.2 The Contractor will be responsible for verifying the locations and depths of all utility crossings and take precautions against damages which might result from his operations. If any damage occurs as a result of his operations, the Contractor will be required to suspend work until the damage is repaired and approved by the Contracting Officer. Costs of such repairs and downtime of the operation and attendant plant shall be at the Contractor's expense.

19 Environmental Concerns

The Contractor shall comply with all applicable local, county, territorial, state and Federal regulations and laws concerning environmental issues. The contractor shall take proper steps to protect the uplands, beach, and open waters from environmental damages of any kind. The Contractor shall comply with all requirements under the terms and conditions set forth in the permits list in the paragraph entitled, "PERMITS AND RESPONSIBILITIES".

20 Obstruction of Navigable Waterways

20.1 The Contractor shall:

20.1.1 Promptly recover and remove any material, plant, machinery, or appliance which the Contractor loses, dumps, throws overboard, sinks, or misplaces, and which, in the opinion of the Contracting Officer, may be dangerous to or obstruct navigation.

20.1.2 Give immediate notice, with the description and locations of any such obstructions, to the Contracting Officer.

20.1.3 When required by the Contracting Officer, mark or buoy such obstructions until the same are removed.

20.2 The Contracting Officer may:

20.2.1 Remove the obstruction by contract or otherwise should the Contractor refuse, neglect, or delay compliance with this paragraph; and

20.2.2 Deduct the cost of removal from any monies due or to become due to the Contractor; or 20.2.3 Recover the cost of removal from the Contractor's bond.

20.2.4 The Contractor's liability for the removal of a vessel wrecked or sunk without fault or negligence is limited to that provided in sections 15, 19, and 20 of the River and Harbor Act of 1899 (33 U.S.C. 410 et. seq)

21 Notification of Coast Guard

The Contractor must notify the area Coast Guard prior to commencement of the work. Information pertaining to contract work schedule, location of rig and equipment during work, and potential hazards of the operation should be provided. The individual to be contacted locally is [name of local contact]. All vessels that are regulated by the U. S. Coast Guard shall have current inspections and certificates issued by the U. S. Coast Guard before being placed in service for use for this contract. A copy shall be posted in a public area aboard the vessel.



22 Final Examination

The Contractor and Government will inspect the areas where the vessel(s) and debris have been removed. Any items found at the work sites will be removed by the Contractor at no additional cost to the Government. Inspection may include side-scan sweeping, diving, and/or visual if necessary to insure all wreckage and debris have been removed. The Contractor shall leave the work area in a clean, neat, and orderly condition satisfactory to the Contracting Officer.



Appendix J-7 Equipment Leasing for Debris Removal

Part I: Scope of Work for Equipment Leasing for Debris Removal

1 General

1.1 The purpose of Part I of this scope of work is to define the requirements for debris removal operations after any natural or man-made catastrophe or major disaster in any one of the following States: Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, and Virginia. An Indefinite delivery - indefinite quantity contract (ID-IQ) may be issued for any of the seven states. Prospective offerors can compete for any of the aforementioned states but offerors will be limited to award of a single contract. The initial contract will provide for primary performance in the given state but does not prevent the government from issuing other contracts for additional work that the primary contractor cannot provide. Each contract will include a performance period of one (1) year base period and provide for two (2) option years. Offers must be held open through 30 November 1999 with the government reserving the right to exercise option years until 30 November of subsequent years, regardless of when the base year or option years expire.

2 Services

2.1 The Contractor shall provide specified equipment, operators, and laborers for debris removal operations as specified in the bidding schedule or as negotiated under any task order. The contractor shall provide all labor and materials necessary to fully operate and maintain (including fuel, oil, grease and repairs) all equipment under this contract.

2.2 The Contractor shall provide debris removal crews under the first task order issued for each disaster event for an estimated 21 days. The Government reserves the right to extend operations on a weekly basis.

2.3 All hourly equipment rates include the cost of the maintenance, fuel, repairs, overhead, profit, insurance, and any other costs associated with the equipment except labor and operator. All labor costs are identified separately.

2.4 All hourly manpower rates include the cost of protective clothing (to include hard-hats and steel toed boots), fringe benefits, hand tools, supervision, transportation and any other costs.

2.5 The work shall consist of clearing and removing storm generated debris as directed by the Contracting Officer's Representative (COR). Work will include: 1) loading the debris, 2) hauling the debris to an approved dumpsite, and 3) dumping the debris at the dumpsite.

2.6 The Contractor shall not move from one designated work area to another designated work area without prior approval from the COR.

2.7 The Contractor shall conduct the work so as not to interfere with the disaster response and recovery activities of federal, state, and local governments or agencies, or of any public utilities.

3 Dumpsites

3.1 The Contractor shall use only debris dumpsites designated by the COR.



3.2 All dumping operations shall be directed by the dumpsite operator. The Contractor shall cooperate with the dumpsite operator to facilitate effective dumping operations.

4 Performance Schedule

4.1 The Contractor shall commence mobilization immediately upon award of the task order and designation of work areas by the COR and will commence debris removal operations within 24 hours of issuance of delivery order award.

4.2 The Contractor shall work during daylight hours for 10 hours per day, 7 days per week.

5 Equipment

5.1 All trucks and equipment must be in compliance with all applicable federal, state, and local rules and regulations. Any truck used to haul debris must be capable of rapidly dumping its load without the assistance of other equipment; be equipped with a tailgate that will effectively contain the debris during transport and permit the truck to be filled to capacity; and measured and marked for its load capacity. Sideboards or other extensions to the bed are allowable provided they meet all applicable rules and regulations, cover the front and both sides, and are constructed in a manner to withstand severe operating conditions. The sideboards are to be constructed of 2" by 6" boards or greater and not to extend more than two feet above the metal bed sides. All extensions are subject to acceptance or rejection by the Contracting Officer's representative.

5.2 Trucks and other heavy equipment designated for use under this contract shall be equipped with two magnetic signs, one attached to each side. Signs will be provided by the government. All signs will be returned to the government upon completion of the contract. The contractor will be assessed a fee of \$20 per sign for each sign not returned.

5.3 Prior to commencing debris removal operations, the Contractor shall present to the Government's representative all trucks or trailers that will be used for hauling debris, for the purpose of determining hauling capacity. Hauling capacity, in cubic yards, will be recorded and marked on each truck or trailer. Each truck or trailer will also be numbered for identification.

5.4 Trucks or equipment which are designated for use under this task order shall not be used for any other work during the working hours of this delivery order. The Contractor shall not solicit work from private citizens or others to be performed in the designated work area during the period of this delivery order. Under no circumstances will the Contractor mix debris hauled for others with debris hauled under this task order.

6 Reporting

6.1 The Contractor shall submit a report to the COR by close of business each day of the term of the task order. Each report shall contain, at a minimum, the following information:

- Contractor's Name
- Contract Number
- Daily and cumulative hours for each piece of equipment
- Daily and cumulative hours for personnel, by position



7 Other Considerations

7.1 The Contractor shall supervise and direct the work, using skilled labor and proper equipment for all tasks. Safety of the Contractor's personnel and equipment is the responsibility of the Contractor. Additionally, the Contractor shall pay for all materials, personnel, taxes, and fees necessary to perform under the terms of this task order.

7.2 The Contractor must be duly licensed to perform the work in the affected state (s) statutory requirements. The Contractor shall obtain all permits necessary to complete the work. The Contractor shall be responsible for determining what permits are necessary to perform under the task order. Copies of all permits shall be submitted to the COR prior to issuance of a notice to proceed.

7.3 The Contractor shall be responsible for correcting any notices of violations issued as a result of the Contractor's or any subcontractor's actions or operations during the performance of this task order. Corrections for any such violations shall be at no additional cost to the Government.

7.4 The Contractor shall be responsible for control of pedestrian and vehicular traffic in the work area. At a minimum, one flag person should be posted at each approach to the work area.

8 Payment

8.1 The Contractor will be entitled to invoice for 60% of the mobilization and demobilization line item after all equipment is delivered to the designated work site. The remaining 40% will be due after all equipment is removed from the work site, all vehicle signs have been returned to the government, and receipt of a proper invoice is received by the government.

8.2 The number of hours of work required to complete this contract are estimated. The actual number of hours of work required may be more or less than the estimated amount shown in the contract. Payment for labor and equipment will be made at the rates bid. The hours worked will be verified by the COR in the daily operational report. Preventative maintenance not in excess of fifteen (15) minutes in a normal work day, will be paid at the regular hourly rate. Preventative maintenance or down time resulting from equipment failure, routine maintenance and fueling that exceeds fifteen (15) minutes of a work hour will be considered unacceptable work and non-payment of that time will be rounded off to the to the half hour of all hours where delays occur. Preventative maintenance is defined as the usual field maintenance to keep equipment in operating condition without the use of extensive shop equipment. Fueling of equipment will be considered as part of preventative maintenance.

8.3 All payments made under this task order will be in accordance with PAYMENTS clauses located in other sections of this contract.

**WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN**

Appendix J: Example Scopes of Work

Base year Part I: Bidding Schedule Debris Removal					
CONTRACT NO.:					
ITEM	DESCRIPTION	HOURS	U/I	U/P	AMOUNT
001	Mobilize Equipment/Demobilize Equipment - Travel to and from Site (200 miles est. each way).				
001aa	Truck, Dump, 16-20 yd ³ capacity. (Qty. Est. 1-60 Trucks)	24,000	Mile		
001ab	Truck, Dump, 21-30 yd ³ capacity. (Qty. Est. 1-60 Trucks)	24,000	Mile		
001ac	Loader, Front-end, 4 yd ³ capacity (Qty. Est. 1-20 Loaders)	8,000	Mile		
001ad	Knuckleboom, 10 ton lifting capacity (Qty. Est. 1-10)	4,000	Mile		
001ae	Truck, Pickup, .5 Ton (Qty. Est. 1-10)	4,000	Mile		
002	Truck, Dump, 16-20 yd ³ capacity. (Qty. Est. 1-60 Trucks)	12,600	Hrs		
003	Operator for 16-20 yd ³ capacity Dump Truck (Qty. Est. 1-60 Operators)	12,600	Hrs		
004	Truck, Dump, 21-30 yd ³ capacity. (Qty. Est. 1-60 Trucks)	12,600	Hrs		
005	Operator for 21-30 yd ³ capacity Dump Truck (Qty. Est. 1-60 Operators)	12,600	Hrs		
006	Loader, Front-end, 4 yd ³ capacity (Qty. Est. 1-20 Loaders)	4,200	Hrs		
007	Operator for Front-end Loader (Qty. Est. 1-20 Loader Operators)	4,200	Hrs		
008	Knuckleboom, 10,000 ton lifting capacity (Qty. Est. 1-10)	2,100	Hrs		
009	Operator for Knuckleboom (Qty. Est. 1-10)	2,100	Hrs		



Base year Part I: Bidding Schedule Debris Removal					
CONTRACT NO.:					
ITEM	DESCRIPTION	HOURS	U/I	U/P	AMOUNT
010	Laborers with Chainsaws, 16"min bar, traffic flags, and misc. small tools (axes, shovels, safety equip.) (Qty. Est. 1-40)	8,400	Hrs		
011	Truck, Pickup, .5 Ton (Qty. Est. 1-10)	2,100	Hrs		
012	Crew foreman with cellular phone. (Qty. Est. 1-10)	2,100	Hrs		
013	Loader, Front-end, 2-1/2 yd. Capacity (Qty. Est. 1-10 loaders)	2,100	Hrs		
TOTAL					

Note: An estimated ten crews may be used. A typical crew is composed of the following:

- 6 dump trucks (16-20 yd³ capacity)
- 6 dump trucks (21-30 yd³ capacity)
- 2 front end loaders
- 1 foreman
- 4 laborers
- 1 knuckleboom



Appendix J-8 Equipment Leasing for Dumpsite Management and Debris Reduction

Part II: Scope of Work for Equipment Leasing for Dumpsite Management and Debris Reduction

1 General

1.1 The purpose of Part II of this scope of work is to define the requirements for dumpsite management and debris reduction operations after any natural or man-made catastrophe or major disaster in any one of the following States: Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, and Virginia. An Indefinite delivery - indefinite quantity contract (ID-IQ) may be issued for any of the seven states. Prospective offerors can compete for the contract for any or all of the aforementioned states but offerors will be limited to award of a single contract. The initial contract will provide for primary performance in the given state but does not prevent the government from issuing other contracts for additional work that the primary can not provide. Each contract will include a performance period of one (1) year base period and provide for two (2) option years. Offers must be held open through 30 November 1999 with the government reserving the right to exercise option years until 30 November of subsequent years, regardless of when the base year or option years expire.

2 Services

2.1 The Contractor shall provide specified equipment, operators, and laborers for dumpsite management and debris reduction operations as specified in the bidding schedule or negotiated under a delivery order. The contractor shall provide all labor and materials necessary to fully operate and maintain (including fuel, oil, grease and repairs) all equipment specified under a delivery order.

2.2 The Contractor shall provide labor and equipment under Part II of this contract as specified in delivery orders. It is contemplated that the delivery orders will be for 30 days with a Government option to extend operations on a weekly basis.

2.3 All hourly equipment rates include the cost of the maintenance, fuel, repairs, overhead, profit, insurance, and any other costs associated with the equipment except labor and operator. All labor costs are identified separately.

2.4 All hourly manpower rates include the cost of protective clothing (to include hard-hats and steel toed boots), fringe benefits, hand tools, supervision, transportation and any other costs.

2.5 The work shall consist of managing the operations of the dumpsite and performing debris reduction by air curtain incineration and or chipping of storm generated debris as directed by the Contracting Officer's Representative (COR).

2.6 The Contractor shall conduct the work so as not to interfere with the disaster response and recovery activities of federal, state, and local governments or agencies, or of any public utilities.



3 Performance Schedule

3.1 The Contractor shall commence mobilization immediately upon award of the delivery order and designation of work areas by the COR and will commence debris removal operations within 24 hours of award of the delivery order.

3.2 The Contractor shall manage dumpsite operations during daylight hours for 10 hours per day, 7 days per week. Management and execution of burning operations will be 24 hours per day, 7 days per week, unless directed otherwise by the contracting Officer.

4 Equipment

4.1 All equipment must be in compliance with all applicable federal, state, and local rules and regulations.

5 Reporting

5.1 The Contractor shall submit a report to the COR by close of business each day of the term of the task order. Each report shall contain, at a minimum, the following information:

- a) Contractor's Name
- b) Contract Number
- c) Daily and cumulative hours for each piece of equipment
- d) Daily and cumulative hours for personnel, by position

6 Other Considerations

6.1 The Contractor shall supervise and direct the work, using skilled labor and proper equipment for all tasks. Safety of the Contractor's personnel and equipment is the responsibility of the Contractor. Additionally, the Contractor shall pay for all materials, personnel, taxes, and fees necessary to perform under the terms of this task order.

6.2 The Contractor must be duly licensed to perform the work in the state per statutory requirements. The Contractor shall obtain all permits necessary to complete the work. The Contractor shall be responsible for determining what permits are necessary to perform under the contract. Copies of all permits shall be submitted to the COR prior to issuance of a notice to proceed.

6.3 The Contractor shall be responsible for correcting any notices of violations issued as a result of the Contractor's or any subcontractor's actions or operations during the performance of this task order. Corrections for any such violations shall be at no additional cost to the Government.

6.4 The Contractor shall be responsible for control of pedestrian and vehicular traffic in the work area.

7 Special Bid Items

7.1 Dumpsite Foreman.



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Appendix J: Example Scopes of Work

7.1.1 The dumpsite foreman is responsible for management of all operations of the site to include, traffic control, dumping operations, segregation of debris into burnable, mixed, and metal materials, burning and chipping, and safety.

7.1.2 The dumpsite foreman will be responsible for monitoring and documenting equipment and labor time and providing the daily operational report to the contracting officers representative.

7.1.3 The hourly manpower rate includes the cost of a cellular telephone, protective clothing (to include hard-hats and steel toed boots), fringe benefits, hand tools, supervision, transportation and any other costs.

7.2 Night Foreman.

7.2.1 The night foreman is responsible for managing all night operations which will be limited to primarily to burning.

7.2.2 The night foreman will be responsible for monitoring and documenting equipment and labor time and providing the daily operational report to the contracting officers representative.

7.2.3 All hourly manpower rates include the cost of a cellular telephone, protective clothing (to include hard-hats and steel toed boots), fringe benefits, hand tools, supervision, transportation and any other costs.

7.3 Site Management Plan.

7.3.1 Once the dumpsite is located, the contractor will provide a Site Management Plan. Five (5) copies of the plan are required. The plan shall be drawn to a scale of 1" = 50' and address following functions:

- a) Access to site
- b) Site preparation - clearing, erosion control, and grading
- c) Traffic control procedures
- d) Safety- fire
- e) Segregation of debris
- f) Location of ash disposal area, hazardous material containment area, contractor work area, and inspection tower
- g) Location of burning operations, chipping operation (if required). Burning operations require a 100 foot clearance for the stockpile and a 1000 foot clearance for structures.
- h) Location of existing structures or sensitive areas requiring protection

7.3.2 This item includes all labor and materials costs associated with developing this plan.



7.4 Inspection Tower.

7.4.1 The contractor shall construct an inspection tower. The tower shall be constructed using pressure treated wood. The floor elevation of the tower shall be 10 foot above the existing ground elevation. The floor area shall be 8' by 8', constructed of 2"x8" joists, 16" O.C. with 3/4" plywood supported by four 6" x 6" posts. The perimeter of the floor area shall be protected by a 4 foot high wall constructed of 2" x 4" studs and 1/2" inch plywood. The floor area shall be covered with a corrugated tin roof. The roof shall provide a minimum of 6'-6" of head room below the support beams. Access shall be provided by wooden steps with a hand rail.

7.4.2 This item includes all labor and materials costs associated with constructing this tower. 7.5 Hazardous Materials Containment Area.

7.5.1 The contractor shall construct a hazardous material containment area. This area shall be 30' x 30'. The perimeter shall be lined with hay bales and staked in place. The area shall be lined with a heavy gage plastic to provide a water proof barrier. Additional plastic sufficient to cover the area is required to prevent rain from entering the containment. Site run-off must be redirected from the containment area by site grading.

7.5.2 This item includes all labor and materials costs associated with constructing this containment area.

8 Payment

8.1 The Contractor will be entitled to invoice for 60% of the mobilization and demobilization line item after all equipment is delivered to the designated work site. The remaining 40% will be due after all equipment is removed from the work site, all vehicle signs have been returned to the government, and receipt of a proper invoice.

8.2 Payment for work completed will be based on verified hours worked from the daily operational report. Equipment down time resulting from equipment failure, routine maintenance and fueling that exceeds fifteen (15) minutes of a work hour will be considered unacceptable work and non-payment for one half of that hour.

8.3 All payments made under this task order will be in accordance with PAYMENTS clauses located in other sections of this task order.



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Appendix J: Example Scopes of Work

Base year Part II: Bidding Schedule Debris Removal					
CONTRACT NO.:					
ITEM	DESCRIPTION	HOURS	U/I	U/P	AMOUNT
001	Mobilize Equipment/Demobilize Equipment – Travel to and from site (200 miles est. each way).				
001aa	Air Curtain Burner (Qty. Est. 1-3)	1,200	mile		
001ab	Backhoe, with loader, 1.5 yd ³ capacity, with thumb attachment (Qty. Est. 1-3)	1,200	mile		
001ac	Dozer, tracked 2-3 yd ³ Blade capacity (Qty. Est. 1-3)	1,200	mile		
001ad	Dozer, tracked with root rake blade (Qty. Est. 1-3)	1,200	mile		
001ae	Water truck (Qty. Est. 1-3)	1,200	mile		
001af	Lowbed trailer with tractor (Qty. Est. 1-3)	1,200	mile		
001ag	Grader, Motor, 12 foot blade, 130-140 net Hp (Qty. Est. 1-3)	1,200	mile		
001ah	Chipper/Tub Grinder (Qty. Est. 1-3)	1,200	mile		
002	Air Curtain Burner, self-contained system including power plant, hydraulic drive system blower fan with a minimum 15,500 cfm centrifugal fan, air output approx.. 165 MPH at fan. 35 foot length. Must meet or exceed air quality standards applicable to the US-EPA regulations	1,200	Hrs		
003	Backhoe, with loader, 1.5 yd ³ capacity, with thumb attachment (Qty. Est. 1-3)	1,200	Hrs		
004	Backhoe Operator (Qty. Est. 1-3)	1,200	Hrs		
005	Dozer, tracked 2-3 yd ³ Blade capacity (Qty. Est. 1-3)	900	Hrs		
006	Operator for Tracked Dozer (Qty. Est. 1-3)	900	Hrs		

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Appendix J: Example Scopes of Work

Base year Part II: Bidding Schedule Debris Removal					
CONTRACT NO.:					
ITEM	DESCRIPTION	HOURS	U/I	U/P	AMOUNT
007	Dozer, tracked with root rake blade (Qty. Est. 1-3)	1,200	Hrs		
008	Operator for Tracked Dozer with root rake (Qty. Est. 1-3)	1,200	Hrs		
009	Water Truck (Qty. Est. 1-3)	180	Hrs		
010	Lowbed trailer with tractor (Qty. Est. 1-3)	120	Hrs		
011	Inspection Tower, treated wood. (Qty. Est. 1-3)	1	Each		
012	Construction of Hazard and Toxic Waste Containment Area (Qty. Est. 1-3)	1	each		
013	Nighttime Site Operation Generator and Lighting (Qty. Est. 1-3)	900	Hrs		
014	Site Management Foreman (Qty. Est. 1-3)	1,080	Hrs		
015	Site Management Night Foreman (Qty. Est. 1-3)	1,080	Hrs		
016	Laborer with misc. Small hand tools, hand saw, hammer, shovel, Day Duty (Qty. Est. 1-15)	16,200	Hrs		
017	Grader, Motor, 12 foot blade, 130-140 net Hp (Qty. Est. 1-3)	180	Hrs		
018	Operator for Water truck, Lowbed tractor trailer, Motor Grader (Qty. Est. 1-3)	360	Hrs		
019	Chipper/Tub Grinder, 8ft. Dia. Tub 300-400, Hp engine (Qty Est. 1-3)	300	Hrs		
020	Chipper/Tub Grinder, 12 ft. Dia. Tub 800-100, Hp engine (Qty. Est. 1-2)	200	Hrs		
TOTAL					

Note: An estimated three crews may be used. A typical crew is composed of the following:



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Appendix J: Example Scopes of Work

- Site Management Foreman
- Night Site Management Foreman
- Five Laborers with small hand tools (3 for daytime, 2 for nighttime)
- Night Operation Lights and Generator
- Inspection Tower
- HTW area
- Air Curtain Incinerator
- Backhoe with thumb/operator
- Dozer with Rootrake/operator
- Dozer with Blade/operator
- Roadgrader/Operator
- Watertruck
- One Chipper/Grinder
- Lowbed Trailer/ Tractor



Appendix J-9 Disaster Debris Monitoring for Cities

Debris Monitors Request for Proposal

The [CITY OF] is seeking proposals for Field Debris Monitoring Services and Fixed Site Monitoring Services to assist the City with disaster debris removal. The consultant will be compensated on a flat hourly rate of pay per person dedicated and working on the city job.

The consultant will provide services in accordance with the established "Disaster Debris Monitoring Scope of Services."

Proposals must be turned in no later than [TIME] on [DATE]. All proposals must be clearly marked "Field Debris Monitoring Services and Fixed Site Monitoring Services" and should be submitted to the attention of [PURCHASING AGENT], [DATE].

The [CITY OF] reserves the right to reject any one proposal, or all proposals, or any part of a proposal, to waive any informality in any proposal, and to award the task as deemed to be in the best interest of the city.

The [CITY OF] does not discriminate on the basis of race, color, national origin, sex, religion, age, or handicap status in employment or provisions of service.

For questions, contact [name and contact information]



Disaster Debris Monitoring Scope of Services

Provide Fixed Site Debris Monitors and Field Debris Monitors and Debris Monitoring Supervision and Management to assist the [CITY OF] (City) with [INCIDENT] debris removal services. The services to be provided are contract compliance supervision and inspection not professional engineering services. The consultant will provide:

1 Fixed Site Debris Monitors

Consultant will provide personnel to oversee the inspection of the disposal or unloading sites by providing the monitoring, verification of load capacity, and documentation at designated temporary disposal sites. Services include:

- a) Provide disposal site monitors and inspectors personnel
- b) Complete record of contract haulers' cubic yardage and other record keeping as may be needed on the provided load ticket
- c) Initial each load ticket before permitting truck to proceed from the check-in area to the tipping area
- d) Remain in contact with debris management/dispatch center or supervisor
- e) Perform other duties as directed by the dispatch/staging operation, debris management project manager, or designated City personnel.
- f) Accurately measure load hauling compartments and accurately compute volume capacity in cubic yards. Document and record measurements and computations

2 Field Debris Monitors

Consultants will perform roving on-site, street-level work area inspections of debris cleanup and collection. Consultant will provide loading site (field) monitors to inspect and control debris collection utilizing manifest load tickets. Services include:

- a) Provide field monitor personnel at designated areas to check and verify information on debris removal
- b) Monitor collection activity of trucks
- c) Issue manifest load tickets at loading site for each load
- d) Check the area for safety considerations such as — downed power lines, children playing in area, are traffic control needs met, are trucks and equipment being operated safely
- e) Ensure Freon containing appliances are sorted and ready for Freon removal on site or separate transport for Freon removal before final disposal
- f) Perform a pre-work inspection of areas to check debris piles to identify covered utility meters, transformers, fire hydrants, mail boxes, etc. to help prevent damage from loading equipment and to look for potential problems.
- g) Should damages occur to utility components, driveways, road surfaces, private property, vehicles, etc. document the damage with photos if possible, collect information about



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Appendix J: Example Scopes of Work

owner, circumstances of the damage (who, what, when, where) and report to your supervisor.

- h) Ensure the work area is clear of debris to the specified level before equipment moves to a new loading area.
- i) Accurately measure load hauling compartments and accurately compute volume capacity in cubic yards. Document and record measurements and computations.
- j) Properly monitor and record performance and productivity of debris removal crew
- k) Remain in constant contact with debris management/dispatch center or supervisor
- l) Ensure that loads are contained properly before leaving the loading area
- m) Ensure only eligible debris is collected for loading and hauling
- n) Ensure only debris from approved public areas is loaded for removal
- o) Perform other duties from time to time as directed by the debris management project manager or designated County debris management personnel.

3 Senior Technician/Field Supervisor/Emergency Operations Manager

Consultant will provide project management to oversee debris monitoring activities in the field.

Services will include:

- a) Oversight and Supervision of Monitor field activity
- b) Scheduling of Monitoring resources and deployment timing
- c) Communication with City personnel
- d) Make suggestions to improve the efficiency of collection and removal of debris
- e) Coordinate daily activities and future planning
- f) Remain in contact with debris management/dispatch center or supervisor
- g) Identify, address, and troubleshoot any questions or problems that could impact work area safety and eligibility.
- h) Accurately measure load hauling compartments and accurately compute volume capacity in cubic yards. Document and record measurements and computations

4 Terms

The work shall begin on notice to proceed and go for no longer than ninety (90) days, unless extended by the City with ten (10) days written notice.



5 Deployment

Consultant must be prepared to effect placement of field monitors within 24 hours from the notice to proceed. When additional debris monitoring is needed to meet FEMA monitoring requirements, consultant shall be prepared to ramp up monitors for the City to use as needed.

6 Communication

Project communication and payment to Contractor should be addressed to:

[NAME, ADDRESS, AND PHONE NUMBER]



Appendix J-10 Local Governments Debris Removal (Unit Price by Cubic Yards)

Scope of Work for Debris Removal

Related To

[Disaster Information]

In

[County Or City Name], [State]

Unit Price by Cubic Yards

1 General

1.1 The purpose of this contract is to remove and dispose of all eligible debris from [City Name and/or County Name], [and/or State Name] Rights-of-Way (ROW) [and applicant owned property] within [County Name, City name, or State Name]. The area to be included as part of this contract is located within the [city limits, attached drawings, etc.].

2 Services

2.1 The Contractor shall provide for debris removal and disposal of all eligible debris from the [City] [County] [State] ROW [and applicant owned property].

2.2 The debris shall be taken to an approved dumpsite(s) indicated [on the attached maps]. All necessary permits shall be obtained by the [Contractor] [City] [County] [State].

2.3 The estimated amount of debris to be removed under this contract is shown on the individual bid schedules, but not guaranteed. The unit price on the individual bid schedules will be used for payment.

2.4 The Contractor shall document the current conditions of all roadways, sidewalks and all structures to remain in the debris removal area. In addition, all roadways along the haul routes shall be documented. A representative of the [County] [City] [State] shall be present during this inspection. The Contractor shall provide photographic and/or video documentation. The documentation shall be submitted to the [County] [City] [State] prior to beginning the work.

2.5 Haul and Dispose. The work shall consist of clearing, [separating,] and removing any and all eligible debris (see definitions of eligible debris) from public property only, including ROW of streets and roads. Work shall include: 1) examining [and sorting] debris to determine whether or not debris is eligible and to determine whether eligible debris is [burnable or non-burnable (or other categories specific to the project site)]; 2) loading [and sorting] the debris; 3) hauling the eligible debris to an approved dumpsite(s). Ineligible debris shall not be loaded, hauled, or dumped under this contract. The Contractor is liable for all ineligible debris handled during the life of this contract. The [contracting officers representative (COR) or other contracting term used by the local community. This should be changed throughout the contract] shall be immediately notified of any ineligible debris placed at the right of way for collection.

[Specifics on hauling of certain types of debris should be inserted into this section. This would occur when different types of debris are transported to different locations.]



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix J: Example Scopes of Work

2.6 The Contractor shall make a maximum of [# of passes (three is typical)] passes with a minimum of one weekend between each pass. The contractor shall not move from one designated work area to another designated work area without prior approval from the contracting officers representative (COR) or other contracting term used by the local community. This should be changed throughout the contract].

2.7 Any eligible debris, such as fallen trees, which extend onto the public ROW from private property, shall be cut at the point where it enters the ROW. Only that part of the debris that lies within the ROW shall be removed. Hazardous limbs are considered eligible debris and are defined as limbs greater than two inches in diameter that are still hanging in the tree and are threatening a public use area, such as a trail, sidewalk, road, etc. Trees in the public ROW with more than 50% of the crown broken are eligible debris and shall be removed. Holes present as a result of uprooted trees in the public ROW shall be filled to ground level. The Contractor shall not enter onto private property during the performance of this contract.

2.8 Contractors shall note that a portion of the project will occur in residential areas. The contractors should exercise due care to minimize any damages to trees, shrubs, landscaping and general property. The contractor shall repair any damages caused by the contractor's equipment in a timely manner at no expense to the [City] [County] [State]. The debris work area shall be left clear of debris and cleaned, as reasonably and practical under the conditions of this project.

2.9 The contractor shall use equipment and perform work in a manner to prevent damages to the [City's] [County's] [State's] infrastructure facilities and adjacent ROWs, including all landscaped areas. The contractor shall repair any damages caused by the contractor's equipment in a timely manner at no expense to the [City] [County] [State]. All [tracked] equipment shall be approved by the [County] [City] [State] prior to use. All loading equipment is required to operate from the street/road using buckets and/or boom and grapple devices to remove and load the debris. Any damage to private property, sidewalks, curbs, or streets shall be repaired at the expense of the contractor.

2.10 The Contractor shall conduct the work so as not to interfere with the disaster response and recovery activities of federal, state, and local governments or agencies, or of any public utilities.

2.11 The government reserves the right to inspect the site, verify quantities and review operations at any time.

2.12 All work shall be accomplished in a safe manner in accordance with [[County] [City] [State] Safety Standards and] OSHA standards.

3 Load Tickets

3.1 Load Tickets shall be used for recording the cubic yard volume [or each for stumps] of debris removed for disposal. Load tickets shall be provided by the [County] [City] [State]. A copy of the load ticket to be used by the contractor shall be submitted for [COR] [City] [County] [State] approval prior to beginning work. [The Contractor shall provide all load tickets to the [City] [County] [State].] The load ticket numbers shall be sequentially numbered. The load tickets shall be a minimum of four-parts. A sample load ticket is included as an attachment.

3.2 Each ticket shall contain the following information:



- a) Ticket Number
- b) Contract Number
- c) Contractor Name
- d) Date
- e) Truck or Roll-off Number
- f) Truck Capacity
- g) Point of Debris Collection
- h) Loading Departure Time
- i) Dump Arrival Time
- j) Percent of Load
- k) Actual Debris Volume
- l) Debris Eligibility (Y/N)

3.3 A minimum four-part load ticket will be issued by a [COR] [City] [County] [State] monitor prior to transport of the debris from the loading site. The entire four-part load ticket is given to the vehicle operator. Upon arrival at the dumpsite, the vehicle operator will give the entire four-part load ticket to the [COR] [City] [County] [State] monitor. The [COR] [City] [County] [State] monitor will verify the hauler and equipment and establish a percent of truck capacity of the eligible cubic yardage of debris load. After documenting percentage to the nearest 5%, the [COR] [City] [County] [State] monitor will calculate the actual cubic yardage of the load. The actual cubic yard will be recorded on the load ticket by the [COR] [City] [County] [State] monitor to the nearest cubic yard. The [COR] [City] [County] [State] monitor will document the data on the load ticket. The [COR] [City] [County] [State] monitor will give one copy to the vehicle operator. One copy is then given to the contractor, the original is kept by the [COR] [City] [County] [State] and the fourth [to FEMA] [for any other entity that may need a copy]. The load tickets shall be submitted with the daily operational report.

4 Debris Classification

4.1 Eligible Debris. Eligible debris is considered all storm related debris which is located within the public right of way [, applicant owned properties] and defined below.

4.2 Stumps. The removal and disposal of all stumps maybe paid on the cubic yard basis, regardless of size or whether or not the stumps require extraction by the contractor. Stumps 24" or larger hauled separate from other debris shall be individually measured and converted to cubic yards using the attached TABLE by [City's] [County's] [State's] representative. Uprooted stumps with an exposed root ball on improved public property or ROW 24" or larger that create an immediate threat to life, public health, and safety which have to be extracted by mechanical means maybe addressed on a case by case basis by the City after FEMA approval. Stumps not approved in advance by FEMA shall be paid for on a cubic yard basis.

[Enter the classifications of debris applicable to the disaster. Some example categories are burnable or non-burnable, hazardous and toxic waste (typically excluded from the contract),



clean fill (if approved by state and local environmental authorities), salvageable (metals and may contain appliances if a recycler is available), stumps etc.]

5 Performance Schedule

5.1 The Contractor shall commence performance within twenty-four (24) hours of receipt of notice to proceed.

5.2 Prior to commencing debris removal operations a contractor shall, with the [COR's] [City's] [County's] [State's] direction, provide a work plan showing where operations will begin and which streets/roads will be cleared on a 7 and 14 day projection. The plan shall be updated every Monday.

5.3 All activity associated with debris operations shall be performed during [enter working hours]. The contractor may work [number of days] days per week, [including or excluding] holidays.

5.4 Maximum allowable time for completion shall be [enter number of] calendar days, unless the [COR] [City] [County] [State] initiates additions or deletions to the contract by written change orders. Both parties pursuant to applicable [city,] county, state and federal law will equitably negotiate subsequent changes in cost and completion time.

5.5 Need to add a reasonable daily production rate (also add liquidated damages to the special clauses amount should be equal to daily monitoring costs and other costs incurred by lengthening the contact duration)

6 Equipment

6.1 All trucks and other equipment must be in compliance with all applicable federal, state, and local rules and regulations. All trucks and other equipment shall be equipped with back up alarms. Any truck used to haul debris must be capable of rapidly dumping its load without the assistance of other equipment. Sideboards or other extensions to the bed are allowable provided they meet all applicable rules and regulations, cover the front and both sides, and are constructed in a manner to withstand severe operating conditions. The sideboards are to be constructed of 2" by 6" boards or greater and not to extend more than two feet above the metal bed sides. All extensions are subject to acceptance or rejection by the [COR] [City] [County] [State]. The contractor shall provide means to rapidly unload any trailer that does not have a means for dumping. All trailers shall have a metal-framed exterior and a minimum of 5/8" plywood (not wafer board) interior walls. All equipment used to haul debris shall be equipped with a tailgate that will effectively contain the debris during transport and permit the truck to be filled to capacity. Plastic webbing is not acceptable for a tailgate. All hauling equipment shall be measured and marked for its load capacity. The Contractor is responsible for ensuring all loading and transport equipment complies with state and local laws. The Contractor prior to use shall inspect all equipment. The [COR] [City] [County] [State] [Contractor] will provide a form for this purpose.

6.2 Trucks and other heavy equipment designated for use under this contract shall be equipped with two signs, one attached to each side. These signs shall be furnished [to or by] the Contractor. [The signs remain the property of the [COR] [City] [County] [State], and will be returned to the [COR] [City] [County] [State] at the conclusion of the contract.] Magnetic signs are not permitted. The signs shall contain the following information:



- a) Company Name
- b) Truck Number
- c) Cubic Yardage
- d) Inspectors Name and Date

An example sign is included as an attachment.

6.3 Prior to commencing debris removal operations, the Contractor shall present to the [COR] [City] [County] [State] all trucks, trailers, or containers that will be used for hauling debris. Each truck or trailer will be measured to determine the load capacity. Each truck or trailer shall be numbered and clearly display the load capacity for identification with a permanent marking. The [COR] [City] [County] [State] may, at any time, request that the trucks be re-measured. The Contractor shall notify the [COR] [City] [County] [State] each time a new truck, trailer or container is to be used under this contract. No capacity can exceed 100% of the measured volume.

6.4 Trucks or equipment, which are designated for use under this contract, shall not be used for any other work during the working hours of this contract. The Contractor shall not solicit work from private citizens or others to be performed in the designated work area during the period of this contract. Under no circumstances will the Contractor mix debris hauled for others with debris hauled under this contract.

6.5 Loading equipment used under this contract shall be rubber tired and sized properly to fit loading conditions. Excessive size loading equipment (6 CY and up) and non-rubber tired equipment must be approved by the [COR] [City] [County] [State].

6.6 The contractor shall provide an inspection tower at each dumpsite. This tower shall be constructed such that the [COR] [City] [County] [State] monitor can see the bed when empty and to fully view the debris load (at least 10 feet above the existing ground surface), establishing the volume. The inspection tower shall be constructed to meet all local, state and federal safety requirements. The tower shall be constructed using pressure treated wood. The floor area shall be 8' by 8', constructed of 2" x 8" joists, 16" O.C. with 3/4" plywood supported by four 6" x 6" posts. The perimeter of the floor area shall be protected by a 4 foot high wall constructed of 2" x 4" studs and 1/2" plywood. The floor area shall be covered with a corrugated tin roof. The roof shall provide a minimum of 6'-6" of head room below the support beams. Access shall be provided by wooden steps with a hand rail. The towers shall include a writing surface area. The contractor may provide a mechanical lift to be used in place of the constructed tower. [The Contractor shall remove and dispose of the inspection towers following completion of the debris removal at the direction of the [COR] [City] [County] [State].] [The contractor shall provide portable restroom facilities at all dumpsites.]

7 Reporting

The Contractor shall submit a report to the [COR] [City] [County] [State] each day for the term of the contract. A sample daily haul record is attached. Each report shall contain, at a minimum, the following information:

- a) Contractor's Name
- b) Contract Number



- c) Truck Number
- d) Location of work
- e) Day of Report
- f) Daily and cumulative totals of debris removed, by category

Discrepancies between the daily operational report and the corresponding load tickets shall be reconciled no later than the following day.

8 Other Considerations

8.1 The Contractor shall supervise and direct the work, using skillful labor and proper equipment for all tasks. Safety of the Contractor's personnel and equipment is the responsibility of the Contractor. Additionally, the Contractor shall pay for all materials, personnel, taxes, and fees necessary to perform under the terms of this contract.

8.2 The Contractor shall be duly licensed in accordance with the city's, state's and county's statutory requirements to perform the work.

8.3 The Contractor shall be responsible for taking corrective action in response to any notices of violations issued as a result of the Contractors or any subcontractors' actions or operations during the performance of this contract. Corrections for any such violations shall be at no additional cost to the [COR] [City] [County] [State].

8.4 The Contractor shall be responsible for control of pedestrian and vehicular traffic in the work area. The Contractor shall provide all flag persons, signs, equipment, and other devices necessary to meet federal, state, and local requirements. The traffic control personnel and equipment shall be in addition to the personnel and equipment required in other parts of this contract. At a minimum, one flag person should be posted at each approach to the work area. Work shall be accomplished in a safe manner in accordance with [[County] [City] [State] Safety Standards and] OSHA standards.

8.5 The [COR] [City] [County] [State] [Contractor] is responsible for obtaining all applicable environmental and regulatory permits prior to the contractor commencing operations.

8.6 The Contractor is responsible for dust control. The Contractor shall be in compliance with all state and local laws for dust control.

8.7 The [COR] [City] [County] [State] may suspend contractor operations due to inclement weather. The performance period may be extended for weather delays.

8.8 The Contractor shall employ as many local residents and subcontractors as possible as part of this contract.

9 Final Disposition

9.1 [The method of final disposal will be determined by the contracting authority.] Landfill disposal fees are the responsibility of the [Contractor] [City] [County] [State].



10 Measurement

10.1 Measurement for all debris removed shall be by the cubic yard [or each for stumps] as determined by the eligible debris delivered to dumpsite, as supported by the load ticket. Load tickets shall document measurement.

11 Bonding and Insurance

11.16.2015 Prior to signing of contract, contractor agrees to furnish the [COR] [City] [County] [State] with all applicable certificates of insurance. Within 24 hours following signing of contract, contractor shall provide copies of insurance policies including all endorsements. In addition, a payment and performance bond equal to the bid or \$1,000,000.00, whichever is higher, is required within 24 hours of award of the contract. The contractor shall be able to cover expenses associated with a major recovery operation prior to the initial payment and between subsequent payments as well as the aforementioned bonds and insurance. Contractor mobilization costs will not be paid if the contractor is unable to obtain bonding.

11.2 The Contractor shall save and hold the [County] [City] [State] harmless from and against all liability, claims and demands on account of personal injuries (including without limitation workmen's compensation and death claims) or property loss or damages of any kind whatsoever, which arise out of or be in any manner connected with, or are claimed to arise out of or be in any manner connected with, the performance of this contract, regardless of whether such injury, loss or damage shall be caused by, or be claimed to be caused by, the negligence or other fault of the Contractor, any subcontractor, agent or employee.

12 Payment

12.1 Payment for work completed may be invoiced on a [bi-weekly, semi-monthly or monthly] basis. Invoices shall be based on reconciled load tickets from the daily operational reports. Payment will be based on the unit pricing submitted by the contractor in the attached BIDDING SCHEDULE.

12.2 Time is of the essence to the performance hereunder and the [County] [City] [State] shall recover from the Contractor any delay costs caused by the acts or omissions of the contractor or its agents. Except as otherwise provided herein, payment shall be made for actual work accepted and completed. If the Contractor has not been paid within thirty days following the date of hand delivery to the [County's] [City's] [State's] authorized agent of said invoice, the Contractor shall also be paid a late payment charge consisting of interest calculated at the rate of one and one-half percent per month calculated from the expiration of the thirty day period until fully paid. Payment made is based on the post mark date or hand delivery date. No late payment interest shall be due and owing for payments withheld in good faith for reasonable cause.

12.3 For reasonable cause and/or when satisfactory progress has not been achieved by the contractor during any period for which a payment is to be made, the [County's] [City's] [State's] authorized agent may retain a percentage of said payment, not to exceed 5% of the contract value to insure performance of the contract. Said cause and progress shall be determined by the [County's] [City's] [State's] authorized agent, in his sole discretion, based on his assessment of any past performance of the Contractor and the likelihood that such performance will continue. Upon completion of all contract requirements, retained amounts shall be paid promptly less any offsets or deductions authorized hereunder or by law.



12.4 The [County] [City] may withhold payment or final payment for reasons including, but not limited to the following: unsatisfactory job performance or progress, defective work, disputed work, failure to comply with material provisions of the contract, third party claims filed or reasonable evidence that a claim will be filed or other reasonable cause.

12.5 Final payment, less any offsets or deductions authorized hereunder or by law, shall be made within thirty days of the certification of completion of the project by the [County's] [City's] [State's] authorized agent provided the Contractor has completed filing of all contractually required documents and certifications with the [County's] [City's] [State's] authorized agent including acceptable evidence of the satisfaction of all claims or liens.

13 Changes, Additions, Deductions, and Extra Work

13.1 Upon proper action by the [Name of County Commissioners] [Name of City Board of Supervisors], [State Authority] the [County's] [City's] [State's] authorized agent may authorize changes, additions or deductions from the work to be performed by written notice to the Contractor. No extra work shall be done or any obligation incurred except upon written order by the [County's] [City's] [State's] authorized agent. If any change causes an increase or decrease in the Contractor's cost of, or the time required for, the performance of any part of the work under this contract, the [County's] [City's] [State's] authorized agent, with [city] [and county] [and State] concurrence, shall make an equitable adjustment and modify the contract in writing.

14 Termination of Contract

14.1 This contract may be terminated at any time for the convenience of the [County] [City] [State]. The [County] [City] [State] agrees to pay the contractor for all work completed through the termination date, as well as any demobilization costs that were a part of the original contract.

14.2 This contract shall be terminated for cause if the Contractor defaults in the performance of any of the terms hereof, including but not limited to: unsatisfactory job performance or progress, defective work, disputed work, failure to comply with material provisions of the contract, third party claims filed or reasonable evidence that a claim will be filed, or other reasonable cause; or otherwise fails to cure any other deficiency identified by the [County's] [City's] [State's] authorized agent within 24 hours of delivery of notice of said deficiency. The [County] [City] [State] retains all other legal or equitable rights or remedies existing as a result of said default, including but not limited to any legal process necessary to obtain any sureties securing this contract. Any reasonable attorney's fee incurred in enforcing this contract will not exceed 5% of said contract price.

15 Warranties and Representations

15.1 This contract is binding upon and inures to the benefit of the [County] [City] [State] or Assigns and is the whole agreement of the parties and governed by the Law of the State of [State]. The appropriate venue for any litigation resulting hereunder is the [Name of County] [Name of City] [Name of State] Court,

15.2 The Contractor shall comply with all Federal, State, County, and municipal laws, ordinances, and regulations. The Contractor shall not discriminate against any employee or applicant due to sex, race, color, creed, national origin or ancestry. The Contractor further certifies he is eligible to perform this contract under local and Federal law, is not now and has



never been debarred from performing Federal or State government contracts and that all subcontractors used in the performance of this contract have the same qualifications.

16 Deficiencies, Corrective Actions and Deductions

16.1 When the Contractor's work does not conform to the Contract requirements completely, a deficiency exists. If a deficiency(s) is serious enough to render a service unacceptable, it is also considered a defect. Defects are important in determining if non-compliance levels have been exceeded for services inspected.

16.1 Corrective Actions. If deficiencies are identified, the [County] [City] [State] must take action to correct those deficiencies using one, or in some cases a combination of, the following:

16.1.1 Stop Unsafe Work. The [County's] [City's] [State's] authorized agent may immediately stop work on that portion of the job affected by a safety hazard, until it is corrected.

16.1.2 Issue a Stop Work Order. If the [County's] [City's] [State's] authorized agent determines the deficiency is serious, the [County] [City] [State] can issue a stop work order.

16.1.3 Reduced Value Deduction. The [County] [City] [State] may reduce the Contract price to reflect the reduced value of the services performed. This method is normally used when the work is performed by the, [County] [City] [State] or another contractor rather than the Contractor under this contract. The amount of the deduction is equal to the value of the service(s) not performed. As appropriate, calculation of deductions for certain deficiencies will be made using approved methods allowed by the contract clause entitled "Inspection of Services".

16.1.4 The Contract may be terminated.

16.2 The [County] [City] [State] may discuss corrective actions with the Contractor to prevent future occurrences.

16.3 The [County's] [City's] [State's] authorized agent will notify the Contractor, in writing, of any observed noncompliance with the aforementioned Federal, State, or local laws or regulations. Such notice, when delivered to the Contractor at the site of the work, shall be deemed sufficient for the purpose. After receipt of such notice, immediately inform the [County's] [City's] [State's] authorized agent of proposed corrective action, and take such action as may be approved. If the Contractor fails or refuses to comply promptly, the [County's] [City's] [State's] authorized agent may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time, or for excess costs or damages by the Contractor.

17 Notices

17.1 At the time of award, the Contractor shall designate, in writing, a CR to receive any Notice required hereunder and who shall be available at the local work site in [City or County Name], [State], during all times that the Contractor is performing work in accordance herewith. A copy of said designation shall be provided to the [County's] [City's] [State's] authorized agent at the time of award.



17.2 The only [County] [City] [State] personnel authorized to receive any Notice required hereunder are the [County's] [City's] [State's] authorized agent. Said Notice must be hand delivered during normal business hours to the location designated by the [County] [City] [State].

18 Other Contracts

18.1 The [COR] [City] [County] [State] reserves the right to issue other contracts or direct other contractors to work within the area included in this contract.

19 Attachments

- a) Example Daily Haul Records
- b) Example Load Ticket
- c) Example Truck Placard
- d) Dumpsite Location Maps
- e) Bidding Schedule

20 Acceptance of Contract

20.1 The Contractor shall provide all the documentation required as per SECTION BONDING AND INSURANCE of this contract within the specified time limit, and providing a list of all Sub-Contracts and Proof of Insurance of all Sub-Contractors being used under this contract.

20.2 The Contractor shall provide [Name of County Commissioners] [Name of City Board of Supervisors] [State Authority] the required insurance certificate(s) with a clause that shows Indemnity and Hold Harmless from injuries, damages, or losses caused by the negligent actions of the Contractor or its Employees to [Name of County] [Name of City] [State Name].

20.3 The Contractor shall provide proof of Workman's Compensation as required by the State of [State].

20.4 As agreed upon by the [Name of County Commissioners] [Name of City Board of Supervisors] [State Authority] and [Contractor name] local sub-contractors and individuals will be used, to the extent possible, during this debris removal project.

20.4.1 The Contractor agrees to complete the work in a professional, workmanlike manner and within the scope of work guidelines set forth above based on the unit pricing submitted by the contractor in the attached BIDDING SCHEDULE.

IN WITNESS WHEREOF, the parties have agreed to the above requirements and have entered into the above contract this [date].

[COUNTY] [CITY] [STATE] of [NAME], [STATE]

By: _____ By: _____
[Name], [Title] [Name], [Title]

By: _____
[Name], [Title]

[Contractor]

By: _____
[Name], [Title]



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix J: Example Scopes of Work

Daily Report					
CONTRACTOR:				DATE OF REPORT:	
CONTRACT NO.:					
Truck No.	Location of Work	Local Collection Site Trips	Landfill Trips	Cubic Yard Totals	
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
DAILY GRAND TOTAL			C.Y.		C.Y.



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix J: Example Scopes of Work

Daily Haul Report								
CONTRACT No:						DATE OF REPORT:		
Date	Ticket #	Time	Truck #	Capacity	% Load	Actual Capacity	Eligible (Y/N)	Comments



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix J: Example Scopes of Work

LOAD TICKET			
Ticket no.:			
Contract no.:			
Contractor:			
Date:			
DEBRIS QUANTITY			
Truck No:		Capacity (CY):	
Load Size (Cy):		Tons:	
Truck Driver:			
DEBRIS CLASSIFICATION			
	Burnable		
	Non-burnable		
	Mixed		
	Other		
LOCATION			
Section/Area:		Dumpsite:	
	Time	Inspector	
Loading			
Dumping			
Eligibility (Y/N):	Original:	[County] [City] [State]	
	Yellow:	Contractor	
	Pink:	Driver	
	Gold:	Sub-Contractor	



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix J: Example Scopes of Work

Sample Truck Placard: Hazardous Stump Worksheet									
Applicant:		Date:							
Applicant Representative:		Signature:							
FEMA Representative:		Signature:							
State Representative:		Signature:							
Physical Location (i.e., Street address, road cross streets, etc.)	Describe Facility (ROW, Park, City Hall, etc.)	Hazard		GPS (Decimal Degrees)	Tree Size (Dia.)	Eligible		Fill C.Y.	Comments
		Yes	No			Yes (Green)	No (Red)		
1									
2									
3									
4									
5									
6									
7									



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix J: Example Scopes of Work

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Stump Conversion Table – Diameter to Volume Capacity

Diameter to Volume Capacity

The quantification of the cubic yards of debris for each size of stump in the following table was derived from FEMA field studies conducted throughout the State of Florida during the debris removal operations following Hurricanes Charley, Frances, Ivan and Jeanne. The following formula is used to derive cubic yards:

$$\frac{[(\text{Stump Diameter}^2 \times 0.7854) \times \text{Stump Length}] + [(\text{Root Ball Diameter}^2 \times 0.7854) \times \text{Root Ball Height}]}{46656}$$

0.7854 is one-fourth Pi and is a constant.

46656 is used to convert cubic inches to cubic yards and is a constant

The formula used to calculate the cubic yardage used the following factors, based upon findings in the field:

- Stump diameter measured two feet up from ground
- Stump diameter to root ball diameter ratio of 1:3.6
- Root ball height of 31"

Stump Diameter (Inches)	Debris Volume (Cubic Yards)	Stump Diameter (Inches)	Debris Volume (Cubic Yards)
6	0.3	46	15.2
7	0.4	47	15.8
8	0.5	48	16.5
9	0.6	49	17.2
10	0.7	50	17.9
11	0.9	51	18.6
12	1	52	19.4
13	1.2	53	20.1
14	1.4	54	20.9
15	1.6	55	21.7
16	1.8	56	22.5
17	2.1	57	23.3
18	2.3	58	24.1
19	2.6	59	24.9
20	2.9	60	25.8
21	3.2	61	26.7
22	3.5	62	27.6
23	3.8	63	28.4
24	4.1	64	29.4
25	4.5	65	30.3
26	4.8	66	31.2
27	5.2	67	32.2
28	5.6	68	33.1
29	6	69	34.1
30	6.5	70	35.1
31	6.9	71	36.1
32	7.3	72	37.2
33	7.8	73	38.2
34	8.3	74	39.2
35	8.8	75	40.3
36	9.3	76	41.4
37	9.8	77	42.5
38	10.3	78	43.6
39	10.9	79	44.7
40	11.5	80	45.9
41	12	81	47
42	12.6	82	48.2
43	13.3	83	49.4
44	13.9	84	50.6
45	14.5		



Appendix J-11 Local Governments Debris Removal (Unit Price by Tonnage)

Scope of Work for Debris Removal Related To [Disaster Information] In [County or City Name], [State] Unit by Tonnage

1 General

The purpose of this contract is to remove and dispose of all eligible debris from the [City Name] [County Name] [State Name] Rights-of-Way (ROW) [and applicant owned property]. The area to be included as part of this contract is located within the [city limits County or State, attached drawings, etc.].

2 Services

The Contractor shall provide for debris removal and disposal of all eligible debris from the [City] [County] [State] ROW [and applicant owned property].

The debris shall be taken to an approved dumpsite(s) indicated on the attached maps. All necessary permits shall be obtained by the [Contractor] [City] [County] [State].

The estimated amount of debris to be removed under this contract is shown on the individual bid schedules, but not guaranteed. The unit price on the individual bid schedules will be used for payment.

The Contractor shall document the current conditions of all roadways, sidewalks and all structures to remain in the debris removal area. In addition, all roadways along the haul routes shall be documented. A representative of the [County] [City] [State] shall be present during this inspection. The Contractor shall provide photographic and/or video documentation. The documentation shall be submitted to the [County] [City] [State] prior to beginning the work.

Haul and Dispose. The work shall consist of clearing, [separating,] and removing any and all eligible debris (see definitions of eligible debris) from public property only, including ROW of streets and roads. Work shall include: 1) examining [and sorting] debris to determine whether or not debris is eligible and to determine whether eligible debris is [burnable or non-burnable (or other categories specific to the project site)]; 2) loading [and sorting] the debris; 3) hauling the eligible debris to an approved dumpsite(s). Ineligible debris shall not be loaded, hauled, or dumped under this contract. The [contracting officers representative (COR) or other contracting term used by the local community This should be changed throughout the contract] shall be immediately notified of any ineligible debris placed at the right of way for collection. The Contractor is liable for all ineligible debris handled during the life of this contract.

[Specifics on hauling of certain types of debris should be inserted into this section. This would occur when different types of debris are transported to different locations.]



The Contractor shall make a maximum of [# of passes (three is typical)] passes. The Contractor shall leave a minimum of one weekend between each pass. The Contractor shall not move from one designated work area to another designated work area without prior approval from the [contracting officers representative (COR) or other contracting term used by the local community. This should be changed throughout the contract].

Any eligible debris, such as fallen frees, which extend onto the ROW from private property, shall be cut at the point where it enters the ROW. Only that part of the debris that lies within the ROW shall be removed. The Contractor shall not enter onto private property during the performance of this contract. Hazardous limbs are considered eligible debris and are defined as limbs greater than two inches in diameter that are still hanging in the free and are threatening a public use area, such as a trail, sidewalk, road, etc. Trees in the public ROW with more than 50% of the crown broken are eligible debris and shall be removed. Holes present as a result of uprooted frees in the public ROW shall filled to ground level. The Contractor shall not enter onto private property during the performance of this contract.

Contractors shall note that a portion of the project will occur in residential areas. The contractors should exercise due care to minimize any damages to trees, shrubs, landscaping and general property. The contractor shall repair any damages caused by the contractor's equipment in a timely manner at no expense to the [City] [County] [State]. The debris work area shall be left clear of debris and clean, as reasonably and practical under the conditions of this project.

The contractor shall use equipment and perform work in a manner to prevent damages to [City's] [County's] [State's] infrastructure facilities and adjacent ROWs, including all landscaped areas. The contractor shall repair any damages caused by the contractor's equipment in a timely manner at no expense to the [City] [County] [State]. All [tracked] equipment shall be approved by the [County] [City] [State] prior to use. All loading equipment is required to operate from the street/road using buckets and/or boom and grapple devices to remove and load the debris. Any damage to private property, sidewalks, curbs, or streets shall be repaired at the expense of the contractor.

The Contractor shall conduct the work so as not to interfere with the disaster response and recovery activities of federal, state, and local governments or agencies, or of any public utilities.

The government reserves the right to inspect the site, verify quantities and review operations at any time.

All work shall be accomplished in a safe manner in accordance with [[County] [City] [State] Safety Standards and] OSHA standards.

3 Load Tickets

Load Tickets shall be used for recording the load information of debris removed for disposal. Load tickets shall be furnished by the [County] [City] [State]. A copy of the load ticket to be used by the contractor shall be submitted for [COR] [City] [County] [State] approval prior to beginning work. [The Contractor shall provide all load tickets to the [City] [County] [State].] The load ticket numbers shall be sequentially numbered. The load tickets shall be a minimum of four-parts. An example load ticket is included as an attachment.

Each ticket shall contain the following information:



- Ticket Number
- Contract Number
- Date
- Contractor Name
- Truck or Roll-off Number
- Point of Debris Collection
- Loading Departure Time/Inspector
- Dump Arrival Time/Inspector
- Debris Weight
- Tare Weight
- Truck Driver
- Debris Classification
- Dumpsite
- Debris Eligibility (Y/N)

A minimum four-part load ticket will be issued by a [COR] [City] [County] [State] monitor prior to transport of the debris from the loading site. The entire four-part load ticket is given to the vehicle operator. Upon arrival at the certified scales, the vehicle operator shall give the entire four-part load ticket to the [COR] [City] [County] [State] monitor. The [COR] [City] [County] [State] monitor will verify the hauler and equipment and establish a weight of the eligible debris load. After documenting this data on the load ticket, the [COR] [City] [County] [State] monitor will give one copy to the vehicle operator. One copy is then given to the contractor, the original is kept by the [COR] [City] [County] [State] monitor and the fourth [to FEMA] [for any other entity that may need a copy]. The original weigh ticket generated at the certified scales shall be attached to the original load ticket. Both the load ticket and the weigh ticket will be submitted with the daily report.

4 Debris Classification

Eligible Debris. Eligible debris is considered all storm related debris located within the right of way [, applicant owned properties] and defined below.

[Enter the classifications of debris applicable to the disaster. Some example categories are burnable, non-burnable, hazardous and toxic waste (typically excluded from the contract), clean fill (if approved by state and local environmental authorities), salvageable (metals and may contain appliances if a recycler is available), stumps, etc.]



5 Performance Schedule

The Contractor shall commence performance within twenty-four (24) hours of receipt of notice to proceed.

Prior to commencing debris removal operations a contractor shall, with the [COR's] [City's] [County's] [State's] direction, provide a work plan showing where operations will begin and which streets/roads will be cleared on a 7 and 14 day projection. The plan shall be updated every Monday.

All activity associated with debris operations shall be performed during [enter working hours].

The contractor may work [number of days] days per week, [including or excluding] holidays.

Maximum allowable time for completion will be [enter number of] calendar days, unless the [COR] [City] [County] [State] initiates additions or deletions to the contract by written change orders. Both parties pursuant to applicable [city,] county, state and federal law will equitably negotiate subsequent changes in cost and completion time.

6 Equipment

All trucks and other equipment shall be in compliance with all applicable federal, state, and local rules and regulations. All trucks and other equipment must be equipped with backup alarms. Any truck used to haul debris must be capable of rapidly dumping its load without the assistance of other equipment. Sideboards or other extensions to the bed are allowable provided they meet all applicable rules and regulations, cover the front and both sides, and are constructed in a manner to withstand severe operating conditions. The sideboards are to be constructed of 2" by 6" boards or greater and not extend more than two feet above the metal bedsides. All extensions are subject to acceptance or rejection by the [COR] [City] [County] [State]. The contractor shall provide means to rapidly unload any trailer that does not have a means for dumping. All trailers shall have a metal-framed exterior and a minimum of 5/8" plywood (not wafer board) interior walls. All equipment used to haul debris shall be equipped with a tailgate that will effectively contain the debris during transport and permit the truck to be filled to capacity. Plastic webbing is not acceptable for a tailgate. All hauling equipment shall be weighed and marked for its tare weight. The Contractor is responsible for ensuring all loading and transport equipment complies with state and local laws. The Contractor prior to use will inspect all equipment. The [COR] [City] [County] [State] [Contractor] will provide a form for this purpose.

Trucks and other heavy equipment designated for use under this contract shall be equipped with two signs, one attached to each side. These signs shall be furnished [to or by] the Contractor. [The signs remain the property of the [COR] [City] [County] [State], and will be returned to the [COR] [City] [County] [State] at the conclusion of the contract.] Magnetic signs are not permitted. The signs shall contain the following information:

- Company Name
- Truck Number
- Tare



■ Inspected by and Date

An example sign is included as an attachment.

Prior to commencing debris removal operations, the Contractor shall present to the [COR] [City] [County] [State] all trucks, trailers, or containers that will be used for hauling debris. Each truck or trailer shall be weighed to determine the tare weight. Each truck or trailer shall be numbered and clearly display the tare weight for identification with a permanent marking. The [COR] [City] [County] [State] may, at any time, request that the trucks be re-weighed. The Contractor shall notify the [COR] [City] [County] [State] each time a new truck, trailer or container is to be used under this contract. [This paragraph typically applies if scales other than those at the landfill are being used. If only landfill scales are being used, the trucks are typically weight going in and leaving the landfill.]

Trucks or equipment, which are designated for use under this contract, shall not be used for any other work during the working hours of this contract. The Contractor shall not solicit work from private citizens or others to be performed in the designated work area during the period of this contract. Under no circumstances will the Contractor mix debris hauled for others with debris hauled under this contract.

Loading equipment used under this contract shall be rubber tired and sized properly to fit loading conditions. Excessive size loading equipment (6 CY and up) and non-rubber tired equipment must be approved by the [COR] [City] [County] [State].

[The contractor shall provide portable restroom facilities at all dumpsites.]

7 Reporting

The Contractor shall submit a report to the [COR] [City] [County] [State] during each day of the term of the contract. A sample daily operational report is attached. Each report shall contain, at a minimum, the following information:

- Contractor's Name
- Contract Number
- Crew
- Location of work
- Day of Report
- Daily and cumulative totals of debris removed, by category

Discrepancies between the daily report and the corresponding weigh tickets shall be reconciled no later than the following day.

8 Other Considerations

The Contractor shall supervise and direct the work, using skillful labor and proper equipment for all tasks. Safety of the Contractor's personnel and equipment is the responsibility of the



Contractor. Additionally, the Contractor shall pay for all materials, personnel, taxes, and fees necessary to perform under the terms of this contract.

The Contractor shall be duly licensed in accordance with the city's, state's and county's statutory requirements to perform the work.

The Contractor shall be responsible for taking corrective action in response to any notices of violations issued as a result of the Contractors or any subcontractors' actions or operations during the performance of this contract. Corrections for any such violations shall be at no additional cost to the [COR] [City] [County] [State].

The Contractor shall be responsible for control of pedestrian and vehicular traffic in the work area. The Contractor shall provide all flag persons, signs, equipment, and other devices necessary to meet federal, state, and local requirements. The traffic control personnel and equipment shall be in addition to the personnel and equipment required in other parts of this contract. At a minimum, one flag person should be posted at each approach to the work area. Work shall be accomplished in a safe manner in accordance with [[County] [City] [State] Safety Standards and] OSHA standards.

The [COR] [City] [County] [State] [Contractor] is responsible for obtaining all applicable environmental and regulatory permits prior to the contractor commencing operations.

The Contractor is responsible for dust control. The Contractor shall be in compliance with all state and local laws for dust control.

The [COR] [City] [County] [State] may suspend contractor operations due to inclement weather. The performance period may be extended for weather delays.

The Contractor shall employ as many local residents and subcontractors as possible as part of this contract.

9 Final Disposition

[The method of final disposal will be determined by the contracting authority.] Landfill disposal fees are the responsibility of the [COR] [City] [County] [State].

10 Measurement

Measurement for all debris removed will be by the ton [or each for stumps] as determined by the eligible debris delivered to the certified scales (except stumps) minus the tare weight, as supported by the weigh ticket. Measurement shall be documented by the weigh ticket.

11 Bonding and Insurance

Prior to signing of contract, contractor agrees to furnish the [COR] [City] [County] [State] with all applicable certificates of insurance. Within 24 hours following signing of contract, contractor shall provide copies of insurance policies including all endorsements. In addition, a payment and performance bond equal to the bid or \$1,000,000.00, whichever is higher, is required within 24 hours of award of the contract. The contractor shall be able to cover expenses associated with a major recovery operation prior to the initial payment and between subsequent payments as well as the aforementioned bonds and insurance. Contractor mobilization costs will not be paid if the contractor is unable to obtain bonding.



The Contractor shall save and hold the [County] [City] [State] harmless from and against all liability, claims and demands on account of personal injuries (including without limitation workmen's compensation and death claims) or property loss or damages of any kind whatsoever, which arise out of or be in any manner connected with, or are claimed to arise out of or be in any manner connected with, the performance of this contract, regardless of whether such injury, loss or damage shall be caused by, or be claimed to be caused by, the negligence or other fault of the Contractor, any subcontractor, agent or employee.

12 Payment

Payment for work completed may be invoiced on a [bi-weekly, semi-monthly or monthly] basis. Invoices will be based on reconciled weigh tickets from the daily operational reports.

Time is of the essence to the performance hereunder and the [County] [City] [State] shall recover from the Contractor any delay costs caused by the acts or omissions of the contractor or its agents. Except as otherwise provided herein, payment shall be made for actual work accepted and completed. If the Contractor has not been paid within thirty days following the date of hand delivery to the [County's] [City's] [State's] authorized agent of said invoice, the Contractor shall also be paid a late payment charge consisting of interest calculated at the rate of one and one-half percent per month calculated from the expiration of the thirty day period until fully paid. Payment made is based on the post mark date or hand delivery date. No late payment interest shall be due and owing for payments withheld in good faith for reasonable cause.

For reasonable cause and/or when satisfactory progress has not been achieved by the contractor during any period for which a payment is to be made, the [County's] [City's] [State's] authorized agent may retain a percentage of said payment, not to exceed 5% of the contract value to insure performance of the contract. Said cause and progress shall be determined by the [County's] [City's] [State's] authorized agent, in his sole discretion, based on his assessment of any past performance of the Contractor and the likelihood that such performance will continue. Upon completion of all contract requirements, retained amounts shall be paid promptly less any offsets or deductions authorized hereunder or by law.

The [County] [City] may withhold payment or final payment for reasons including, but not limited to the following: unsatisfactory job performance or progress, defective work, disputed work, failure to comply with material provisions of the contract, third party claims filed or reasonable evidence that a claim will be filed or other reasonable cause.

Final payment, less any offsets or deductions authorized hereunder or by law, shall be made within thirty days of the certification of completion of the project by the [County's] [City's] [State's] authorized agent provided the Contractor has completed filing of all contractually required documents and certifications with the [County's] [City's] [State's] authorized agent including acceptable evidence of the satisfaction of all claims or liens.

12.1 Changes, Additions, Deductions, and Extra Work

Upon proper action by the [Name of County Commissioners] [Name of City Board of Supervisors], [State Authority] the [County's] [City's] [State's] authorized agent may authorize changes, additions or deductions from the work to be performed by written notice to the Contractor. No extra work shall be done or any obligation incurred except upon written order by the [County's] [City's] [State's] authorized agent. If any change causes an increase or decrease



in the Contractor's cost of, or the time required for, the performance of any part of the work under this contract, the [County's] [City's] [State's] authorized agent, with [city] [and county] [and State] concurrence, shall make an equitable adjustment and modify the contract in writing.

12.2 Termination of Contract

This contract may be terminated at any time for the convenience of the [County] [City] [State]. The [County] [City] [State] agrees to pay the contractor for all work completed through the termination date, as well as any demobilization costs that were a part of the original contract.

This contract shall be terminated for cause if the Contractor defaults in the performance of any of the terms hereof, including but not limited to: unsatisfactory job performance or progress, defective work, disputed work, failure to comply with material provisions of the contract, third party claims filed or reasonable evidence that a claim will be filed, or other reasonable cause; or otherwise fails to cure any other deficiency identified by the [County's] [City's] [State's] authorized agent within 24 hours of delivery of notice of said deficiency. The [County] [City] [State] retains all other legal or equitable rights or remedies existing as a result of said default, including but not limited to any legal process necessary to obtain any sureties securing this contract. Any reasonable attorney's fee incurred in enforcing this contract will not exceed 5% of said contract price.

12.3 Warranties and Representations

This contract is binding upon and inures to the benefit of the [County] [City] [State] or Assigns and is the whole agreement of the parties and governed by the Law of the State of [State]. The appropriate venue for any litigation resulting hereunder is the [Name of County] [Name of City] [Name of State] Court. The Contractor shall comply with all Federal, State, County, and municipal laws, ordinances, and regulations. The Contractor shall not discriminate against any employee or applicant due to sex, race, color, creed, national origin or ancestry. The Contractor further certifies he is eligible to perform this contract under local and Federal law, is not now and has never been debarred from performing Federal or State government contracts and that all subcontractors used in the performance of this contract have the same qualifications.

12.4 Deficiencies, Corrective Actions and Deductions

When the Contractor's work does not conform to the Contract requirements completely, a deficiency exists. If a deficiency(s) is serious enough to render a service unacceptable, it is also considered a defect. Defects are important in determining if non-compliance levels have been exceeded for services inspected.

Corrective Actions. If deficiencies are identified, the [County] [City] [State] must take action to correct those deficiencies using one, or in some cases a combination of, the following:

Stop Unsafe Work. The [County's] [City's] [State's] authorized agent may immediately stop work on that portion of the job affected by a safety hazard, until it is corrected.

Issue a Stop Work Order. If the [County's] [City's] [State's] authorized agent determines the deficiency is serious, the [County] [City] [State] can issue a stop work order.

Reduced Value Deduction. The [County] [City] [State] may reduce the Contract price to reflect the reduced value of the services performed. This method is normally used when the work is performed by the, [County] [City] [State] or another contractor rather than the Contractor under



this contract. The amount of the deduction is equal to the value of the service(s) not performed. As appropriate, calculation of deductions for certain deficiencies will be made using approved methods allowed by the contract clause entitled "Inspection of Services".

The Contract may be terminated.

The [County] [City] [State] may discuss corrective actions with the Contractor to prevent future occurrences.

The [County's] [City's] [State's] authorized agent will notify the Contractor, in writing, of any observed noncompliance with the aforementioned Federal, State, or local laws or regulations. Such notice, when delivered to the Contractor at the site of the work, shall be deemed sufficient for the purpose. After receipt of such notice, immediately inform the [County's] [City's] [State's] authorized agent of proposed corrective action, and take such action as may be approved. If the Contractor fails or refuses to comply promptly, the [County's] [City's] [State's] authorized agent may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time, or for excess costs or damages by the Contractor.

13 Notices

At the time of award, the Contractor shall designate, in writing, a CR to receive any Notice required hereunder and who shall be available at the local work site in [City or County Name], [State], during all times that the Contractor is performing work in accordance herewith. A copy of said designation shall be provided to the [County's] [City's] [State's] authorized agent at the time of award.

The only [County] [City] [State] personnel authorized to receive any Notice required hereunder are the [County's] [City's] [State's] authorized agent. Said Notice must be hand delivered during normal business hours to the location designated by the [County] [City] [State] .

14 Other Contracts

The [COR] [City] [County] [State] reserves the right to issue other contracts or direct other contractors to work within the area included in this contract.

15 Enclosures/Attachments

- Example Daily Operational Report
- Example Load Ticket
- Example Truck Placard
- Dumpsite Location Maps
- Bidding Schedule



16 Acceptance of Contract

The Contractor shall provide all the documentation required as per SECTION BONDING AND INSURANCE of this contract within the specified time limit, and providing a list of all Sub-Contracts and Proof of Insurance of all Sub-Contractors being used under this contract.

The Contractor shall provide [Name of County Commissioners] [Name of City Board of Supervisors] [State Authority] the required insurance certificate(s) with a clause that shows Indemnity and Hold Harmless from injuries, damages, or losses caused by the negligent actions of the Contractor or its Employees to [Name of County] [Name of City] [State Name].

The Contractor shall provide proof of Workman's Compensation as required by the State of [State].

As agreed upon by the [Name of County Commissioners] [Name of City Board of Supervisors] [State Authority] and (Contractor name) local sub-contractors and individuals will be used, to the extent possible, during this debris removal project.

The Contractor agrees to complete the work in a professional, workmanlike manner and within the scope of work guidelines set forth above based on the unit pricing submitted by the contractor in the attached BIDDING SCHEDULE.

IN WITNESS WHEREOF, the parties have agreed to the above requirements and have entered into the above contract this (date).

[COUNTY] [CITY] [STATE] of [NAME], [STATE]

By: _____ By: _____
[Name], [Title] [Name], [Title]

By: _____
[Name], [Title]

[Contractor]

By: _____
[Name], [Title]



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix J: Example Scopes of Work

Example Daily Operational Report						
CONTRACTOR:				DATE OF REPORT:		
CONTRACT NO.:						
Truck No.	Location of Work	Landfill Trips	Tonnage Totals	Local Collection Site Trips	Tonnage Totals	
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
DAILY GRAND TOTAL		C.Y.			C.Y.	



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix J: Example Scopes of Work

Example Daily Haul Report							
CONTRACT No:					DATE OF REPORT:		
Date	Load Ticket #	Landfill Ticket #	Time	Truck #	Actual Weight minus Tare	Eligible (Y/N)	Comments



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix J: Example Scopes of Work

LOAD TICKET			
Ticket no.:			
Contract no.:			
Contractor:			
Date:			
DEBRIS QUANTITY			
Truck No:		Capacity (CY):	
Load Size (Cy):		Tons:	
Truck Driver:			
DEBRIS CLASSIFICATION			
	Burnable		
	Non-burnable		
	Mixed		
	Other		
LOCATION			
Section/Area:		Dumpsite:	
	Time	Inspector	
Loading			
Dumping			
Eligibility (Y/N):	Original: [County] [City] [State] Yellow: Contractor Pink: Driver Gold: Sub-Contractor		



Sample Truck Placard

Company Name

Truck Number

Tare

Weighed By and Date



Appendix K Hazus Data

See attachment

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Hazus-MH: Earthquake Event Report

Region Name: NV_WashoeCounty

Earthquake Scenario: EQ65_MountRoseFaultZone

Print Date: November 15, 2016

Disclaimer:

This version of Hazus utilizes 2010 Census Data.

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific earthquake. These results can be improved by using enhanced inventory, geotechnical, and observed ground motion data.

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General Description of the Region

Hazus is a regional earthquake loss estimation model that was developed by the Federal Emergency Management Agency and the National Institute of Building Sciences. The primary purpose of Hazus is to provide a methodology and software application to develop earthquake losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from earthquakes and to prepare for emergency response and recovery.

The earthquake loss estimates provided in this report was based on a region that includes 1 county(ies) from the following state(s):

Nevada

Note:

Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 6,540.47 square miles and contains 112 census tracts. There are over 163 thousand households in the region which has a total population of 421,407 people (2010 Census Bureau data). The distribution of population by State and County is provided in Appendix B.

There are an estimated 147 thousand buildings in the region with a total building replacement value (excluding contents) of 49,451 (millions of dollars). Approximately 93.00 % of the buildings (and 82.00% of the building value) are associated with residential housing.

The replacement value of the transportation and utility lifeline systems is estimated to be 6,731 and 1,027 (millions of dollars) , respectively.

Building and Lifeline Inventory

Building Inventory

Hazus estimates that there are 147 thousand buildings in the region which have an aggregate total replacement value of 49,451 (millions of dollars) . Appendix B provides a general distribution of the building value by State and County.

In terms of building construction types found in the region, wood frame construction makes up 83% of the building inventory. The remaining percentage is distributed between the other general building types.

Critical Facility Inventory

Hazus breaks critical facilities into two (2) groups: essential facilities and high potential loss facilities (HPL). Essential facilities include hospitals, medical clinics, schools, fire stations, police stations and emergency operations facilities. High potential loss facilities include dams, levees, military installations, nuclear power plants and hazardous material sites.

For essential facilities, there are 9 hospitals in the region with a total bed capacity of 1,233 beds. There are 135 schools, 14 fire stations, 9 police stations and 0 emergency operation facilities. With respect to high potential loss facilities (HPL), there are 0 dams identified within the region. Of these, 0 of the dams are classified as 'high hazard'. The inventory also includes 37 hazardous material sites, 0 military installations and 0 nuclear power plants.

Transportation and Utility Lifeline Inventory

Within Hazus, the lifeline inventory is divided between transportation and utility lifeline systems. There are seven (7) transportation systems that include highways, railways, light rail, bus, ports, ferry and airports. There are six (6) utility systems that include potable water, wastewater, natural gas, crude & refined oil, electric power and communications. The lifeline inventory data are provided in Tables 1 and 2.

The total value of the lifeline inventory is over 7,758.00 (millions of dollars). This inventory includes over 1,028 kilometers of highways, 203 bridges, 35,310 kilometers of pipes.

Table 1: Transportation System Lifeline Inventory

System	Component	# Locations/ # Segments	Replacement value (millions of dollars)
Highway	Bridges	203	424.00
	Segments	208	5,852.20
	Tunnels	0	0.00
	Subtotal		6,276.20
Railways	Bridges	8	1.40
	Facilities	7	18.60
	Segments	95	222.90
	Tunnels	0	0.00
	Subtotal		243.00
Light Rail	Bridges	0	0.00
	Facilities	0	0.00
	Segments	0	0.00
	Tunnels	0	0.00
	Subtotal		0.00
Bus	Facilities	1	1.20
	Subtotal		1.20
Ferry	Facilities	0	0.00
	Subtotal		0.00
Port	Facilities	0	0.00
	Subtotal		0.00
Airport	Facilities	2	21.30
	Runways	5	189.80
	Subtotal		211.10
	Total		6,731.50

Table 2: Utility System Lifeline Inventory

System	Component	# Locations / Segments	Replacement value (millions of dollars)
Potable Water	Distribution Lines	NA	353.10
	Facilities	3	108.90
	Pipelines	0	0.00
	Subtotal		462.00
Waste Water	Distribution Lines	NA	211.90
	Facilities	6	435.60
	Pipelines	0	0.00
	Subtotal		647.40
Natural Gas	Distribution Lines	NA	141.20
	Facilities	0	0.00
	Pipelines	0	0.00
	Subtotal		141.20
Oil Systems	Facilities	0	0.00
	Pipelines	0	0.00
	Subtotal		0.00
Electrical Power	Facilities	4	479.60
	Subtotal		479.60
Communication	Facilities	34	3.70
	Subtotal		3.70
	Total		1,734.00

Earthquake Scenario

Hazus uses the following set of information to define the earthquake parameters used for the earthquake loss estimate provided in this report.

Scenario Name	EQ65_MountRoseFaultZone
Type of Earthquake	Arbitrary
Fault Name	NA
Historical Epicenter ID #	NA
Probabilistic Return Period	NA
Longitude of Epicenter	-119.80
Latitude of Epicenter	39.50
Earthquake Magnitude	6.50
Depth (Km)	10.00
Rupture Length (Km)	18.20
Rupture Orientation (degrees)	0.00
Attenuation Function	West US, Extensional 2008 - Strike Slip

Building Damage

Building Damage

Hazus estimates that about 31,928 buildings will be at least moderately damaged. This is over 22.00 % of the buildings in the region. There are an estimated 3,457 buildings that will be damaged beyond repair. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the Hazus technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 below summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	101	0.15	68	0.14	58	0.26	27	0.40	17	0.48
Commercial	1,914	2.86	1,460	3.00	1,746	8.03	1,017	15.10	639	18.47
Education	74	0.11	55	0.11	55	0.25	31	0.48	20	0.58
Government	47	0.07	34	0.07	40	0.18	26	0.38	17	0.51
Industrial	547	0.82	377	0.78	461	2.12	262	3.89	156	4.52
Other Residential	3,866	5.77	3,968	8.16	4,745	21.83	4,077	60.50	2,298	66.46
Religion	141	0.21	115	0.24	115	0.53	66	0.98	40	1.17
Single Family	60,314	90.02	42,557	87.50	14,514	66.78	1,232	18.28	270	7.82
Total	67,003		48,636		21,733		6,738		3,458	

Table 4: Expected Building Damage by Building Type (All Design Levels)

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Wood	61,587	91.92	44,783	92.08	15,101	69.49	1,148	17.03	331	9.57
Steel	502	0.75	377	0.78	665	3.06	480	7.12	236	6.83
Concrete	633	0.94	526	1.08	505	2.32	302	4.48	175	5.07
Precast	465	0.69	348	0.72	516	2.38	305	4.53	192	5.54
RM	2,724	4.07	1,183	2.43	1,400	6.44	648	9.62	208	6.01
URM	54	0.08	57	0.12	117	0.54	137	2.03	222	6.42
MH	1,038	1.55	1,361	2.80	3,429	15.78	3,718	55.18	2,094	60.55
Total	67,003		48,636		21,733		6,738		3,458	

*Note:

RM Reinforced Masonry
URM Unreinforced Masonry
MH Manufactured Housing

Essential Facility Damage

Before the earthquake, the region had 1,233 hospital beds available for use. On the day of the earthquake, the model estimates that only 298 hospital beds (24.00%) are available for use by patients already in the hospital and those injured by the earthquake. After one week, 57.00% of the beds will be back in service. By 30 days, 91.00% will be operational.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate Damage > 50%	Complete Damage > 50%	With Functionality > 50% on day 1
Hospitals	9	5	0	2
Schools	135	125	54	2
EOCs	0	0	0	0
PoliceStations	9	0	0	3
FireStations	14	0	0	9

Transportation and Utility Lifeline Damage

Table 6 provides damage estimates for the transportation system.

Table 6: Expected Damage to the Transportation Systems

System	Component	Locations/ Segments	Number of Locations			
			With at Least Mod. Damage	With Complete Damage	With Functionality > 50 %	
					After Day 1	After Day 7
Highway	Segments	208	0	0	208	208
	Bridges	203	13	1	191	193
	Tunnels	0	0	0	0	0
Railways	Segments	95	0	0	94	94
	Bridges	8	0	0	8	8
	Tunnels	0	0	0	0	0
	Facilities	7	5	0	4	7
Light Rail	Segments	0	0	0	0	0
	Bridges	0	0	0	0	0
	Tunnels	0	0	0	0	0
	Facilities	0	0	0	0	0
Bus	Facilities	1	1	0	1	1
Ferry	Facilities	0	0	0	0	0
Port	Facilities	0	0	0	0	0
Airport	Facilities	2	1	0	2	2
	Runways	5	0	0	5	5

Note: Roadway segments, railroad tracks and light rail tracks are assumed to be damaged by ground failure only. If ground failure maps are not provided, damage estimates to these components will not be computed.

Tables 7-9 provide information on the damage to the utility lifeline systems. Table 7 provides damage to the utility system facilities. Table 8 provides estimates on the number of leaks and breaks by the pipelines of the utility systems. For electric power and potable water, Hazus performs a simplified system performance analysis. Table 9 provides a summary of the system performance information.

Table 7 : Expected Utility System Facility Damage

System	Total #	# of Locations			
		With at Least Moderate Damage	With Complete Damage	with Functionality > 50 %	
				After Day 1	After Day 7
Potable Water	3	3	0	0	3
Waste Water	6	4	0	0	6
Natural Gas	0	0	0	0	0
Oil Systems	0	0	0	0	0
Electrical Power	4	3	0	0	4
Communication	34	16	0	27	34

Table 8 : Expected Utility System Pipeline Damage (Site Specific)

System	Total Pipelines Length (kms)	Number of Leaks	Number of Breaks
Potable Water	17,655	4157	1039
Waste Water	10,593	2979	745
Natural Gas	7,062	854	214
Oil	0	0	0

Table 9: Expected Potable Water and Electric Power System Performance

	Total # of Households	Number of Households without Service				
		At Day 1	At Day 3	At Day 7	At Day 30	At Day 90
Potable Water	163,445	42,038	38,965	32,752	2,738	0
Electric Power		0	0	0	0	0

Induced Earthquake Damage

Debris Generation

Hazus estimates the amount of debris that will be generated by the earthquake. The model breaks the debris into two general categories: a) Brick/Wood and b) Reinforced Concrete/Steel. This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 1.58 million tons of debris will be generated. Of the total amount, Brick/Wood comprises 33.00% of the total, with the remainder being Reinforced Concrete/Steel. If the debris tonnage is converted to an estimated number of truckloads, it will require 63,120 truckloads (@25 tons/truck) to remove the debris generated by the earthquake.

Social Impact

Shelter Requirement

Hazus estimates the number of households that are expected to be displaced from their homes due to the earthquake and the number of displaced people that will require accommodations in temporary public shelters. The model estimates 6,036 households to be displaced due to the earthquake. Of these, 4,042 people (out of a total population of 421,407) will seek temporary shelter in public shelters.

Casualties

Hazus estimates the number of people that will be injured and killed by the earthquake. The casualties are broken down into four (4) severity levels that describe the extent of the injuries. The levels are described as follows;

- Severity Level 1: Injuries will require medical attention but hospitalization is not needed.
- Severity Level 2: Injuries will require hospitalization but are not considered life-threatening
- Severity Level 3: Injuries will require hospitalization and can become life threatening if not promptly treated.
- Severity Level 4: Victims are killed by the earthquake.

The casualty estimates are provided for three (3) times of day: 2:00 AM, 2:00 PM and 5:00 PM. These times represent the periods of the day that different sectors of the community are at their peak occupancy loads. The 2:00 AM estimate considers that the residential occupancy load is maximum, the 2:00 PM estimate considers that the educational, commercial and industrial sector loads are maximum and 5:00 PM represents peak commute time.

Table 10 provides a summary of the casualties estimated for this earthquake

Table 10: Casualty Estimates

		Level 1	Level 2	Level 3	Level 4
2 AM	Commercial	28	8	1	3
	Commuting	0	0	0	0
	Educational	0	0	0	0
	Hotels	0	0	0	0
	Industrial	30	8	1	3
	Other-Residential	819	201	22	41
	Single Family	235	32	2	4
	Total	1,112	250	27	51
2 PM	Commercial	1,558	447	73	143
	Commuting	1	1	2	0
	Educational	445	128	21	42
	Hotels	0	0	0	0
	Industrial	221	62	10	19
	Other-Residential	162	40	5	8
	Single Family	45	6	1	1
	Total	2,432	686	111	213
5 PM	Commercial	1,076	308	50	98
	Commuting	19	24	41	8
	Educational	62	18	3	6
	Hotels	0	0	0	0
	Industrial	138	39	6	12
	Other-Residential	305	75	9	16
	Single Family	90	13	1	2
	Total	1,688	477	110	141

Economic Loss

The total economic loss estimated for the earthquake is 6,699.43 (millions of dollars), which includes building and lifeline related losses based on the region's available inventory. The following three sections provide more detailed information about these losses.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the earthquake. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the earthquake.

The total building-related losses were 6,381.05 (millions of dollars); 19 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 55 % of the total loss. Table 11 below provides a summary of the losses associated with the building damage.

Table 11: Building-Related Economic Loss Estimates
(Millions of dollars)

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Losses							
	Wage	0.00	89.57	209.69	6.24	10.44	315.95
	Capital-Related	0.00	38.24	185.18	3.81	2.35	229.58
	Rental	31.77	137.66	90.16	2.48	4.89	266.97
	Relocation	112.03	69.73	144.21	13.00	37.55	376.52
	Subtotal	143.81	335.20	629.25	25.54	55.24	1,189.02
Capital Stock Losses							
	Structural	188.75	187.17	277.93	44.25	38.28	736.38
	Non_Structural	1,047.06	1,022.93	857.58	163.33	135.99	3,226.88
	Content	366.41	237.45	420.88	107.45	67.37	1,199.55
	Inventory	0.00	0.00	11.92	16.77	0.53	29.22
	Subtotal	1,602.22	1,447.55	1,568.32	331.79	242.16	5,192.03
	Total	1,746.03	1,782.74	2,197.56	357.32	297.40	6,381.05

Transportation and Utility Lifeline Losses

For the transportation and utility lifeline systems, Hazus computes the direct repair cost for each component only. There are no losses computed by Hazus for business interruption due to lifeline outages. Tables 12 & 13 provide a detailed breakdown in the expected lifeline losses.

Hazus estimates the long-term economic impacts to the region for 15 years after the earthquake. The model quantifies this information in terms of income and employment changes within the region. Table 14 presents the results of the region for the given earthquake.

Table 12: Transportation System Economic Losses
(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Highway	Segments	5,852.22	\$0.00	0.00
	Bridges	424.00	\$41.25	9.73
	Tunnels	0.00	\$0.00	0.00
	Subtotal	6276.20	41.20	
Railways	Segments	222.92	\$0.00	0.00
	Bridges	1.43	\$0.08	5.55
	Tunnels	0.00	\$0.00	0.00
	Facilities	18.64	\$7.10	38.10
	Subtotal	243.00	7.20	
Light Rail	Segments	0.00	\$0.00	0.00
	Bridges	0.00	\$0.00	0.00
	Tunnels	0.00	\$0.00	0.00
	Facilities	0.00	\$0.00	0.00
	Subtotal	0.00	0.00	
Bus	Facilities	1.19	\$0.53	44.69
	Subtotal	1.20	0.50	
Ferry	Facilities	0.00	\$0.00	0.00
	Subtotal	0.00	0.00	
Port	Facilities	0.00	\$0.00	0.00
	Subtotal	0.00	0.00	
Airport	Facilities	21.30	\$6.65	31.21
	Runways	189.82	\$0.00	0.00
	Subtotal	211.10	6.60	
	Total	6731.50	55.60	

Table 13: Utility System Economic Losses
(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Potable Water	Pipelines	0.00	\$0.00	0.00
	Facilities	108.90	\$30.77	28.25
	Distribution Lines	353.10	\$18.71	5.30
	Subtotal	461.99	\$49.47	
Waste Water	Pipelines	0.00	\$0.00	0.00
	Facilities	435.60	\$84.57	19.42
	Distribution Lines	211.90	\$13.41	6.33
	Subtotal	647.43	\$97.98	
Natural Gas	Pipelines	0.00	\$0.00	0.00
	Facilities	0.00	\$0.00	0.00
	Distribution Lines	141.20	\$3.85	2.72
	Subtotal	141.24	\$3.85	
Oil Systems	Pipelines	0.00	\$0.00	0.00
	Facilities	0.00	\$0.00	0.00
	Subtotal	0.00	\$0.00	
Electrical Power	Facilities	479.60	\$110.80	23.10
	Subtotal	479.60	\$110.80	
Communication	Facilities	3.70	\$0.67	18.01
	Subtotal	3.71	\$0.67	
Total		1,733.96	\$262.76	

Table 14. Indirect Economic Impact with outside aid
(Employment as # of people and Income in millions of \$)

LOSS	Total	%

Appendix A: County Listing for the Region

Washoe, NV

Appendix B: Regional Population and Building Value Data

State	County Name	Population	Building Value (millions of dollars)		
			Residential	Non-Residential	Total
Nevada	Washoe	421,407	40,368	9,083	49,451
Total State		421,407	40,368	9,083	49,451
Total Region		421,407	40,368	9,083	49,451

Hazus-MH Loss Estimation

Estimated Economic Loss (\$ Billions)

Category	Description	Range
General Building Stock	Building Damage	2.00 - 7.90
	Building Contents	0.10 - 0.50
	Business Interruption	0.60 - 2.40
Infrastructure	Lifelines Damage	
Total		3.20 - 12.80

Estimated Building Damage (Thousands of Buildings)

Description	Residential	Commercial	Other	Total
Minor	30 - 130	1 - 6	0 - 2	40 - 140
Major	3 - 15	0 - 3	0 - 1	5 - 20
Total	40 - 150	2 - 9	1 - 3	40 - 160

Estimated Casualties : Commute Time

Severity Level	Description	# Persons
Level 1	Medical Aid	800 - 3,000
Level 2	Hospital Care	200 - 1,000
Level 3	Life-threatening	60 - 200
Level 4	Fatalities	70 - 300

Estimated Shelter Needs

Type	Households	People
Displaced Households	3,000 - 12,000	7,500 - 30,000
Public Shelter	1,617	4,043

Comments :

Totals only reflect data for those census tracts/blocks included in the user's study region.

Disclaimer:

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific earthquake. These results can be improved by using enhanced inventory, geotechnical, and observed ground motion data

Earthquake Information

Location :

Origin Time:

Magnitude : 6.50

Epicenter Latitude/Longitude :
39.50 / -119.80

Depth & Type :10.00/A

Fault Name :
NA

Maximum PGA : 1.00

Ground Motion /Attenuation : West US, Extensional 2008 - Strike Slip

Information Sources:

Comments :

Population and Building Exposure (2010 D&B) (2010 Census)

Population: 421,407

Building Exposure : (\$ Millions)

Residential	40,368
Commerical	6,443
Other	2,640
Total	49,451

Counties :
- Washoe,NV

Major Metro Area :

Building Damage Count for Moderate Seismic Design Level

November 15, 2016

	# of Buildings					Total
	None	Slight	Moderate	Extensive	Complete	
Nevada						
Washoe						
Wood	32,400	22,116	9,645	821	230	65,213
Steel	314	238	500	368	119	1,539
Concrete	267	238	314	178	49	1,047
Precast	268	186	315	174	45	987
Reinforced Masonry	2,233	920	1,145	477	46	4,821
Manufactured Home	397	532	1,309	1,293	526	4,056
Total	35,878	24,231	13,228	3,311	1,015	77,663
Region Total	35,878	24,231	13,228	3,311	1,015	77,663

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Study Region : NV_WashoeCounty
 Scenario : EQ65_MountRoseFaultZone

Building Damage Count for High Seismic Design Level

November 15, 2016

	# of Buildings						Total
	None	Slight	Moderate	Extensive	Complete	Total	
Nevada							
Washoe							
Wood	29,142	22,604	5,315	229	40	57,330	
Steel	163	123	113	21	1	421	
Concrete	334	260	114	16	1	726	
Precast	164	142	131	24	3	463	
Reinforced Masonry	433	232	155	22	2	844	
Manufactured Home	548	734	1,811	1,793	731	5,617	
Total	30,784	24,095	7,639	2,105	778	65,401	
Region Total	30,784	24,095	7,639	2,105	778	65,401	

Totals only reflect data for those census tracts/blacks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Building Damage Count for Pre Code Seismic Design Level

November 15, 2016

		# of Buildings					Total
		None	Slight	Moderate	Extensive	Complete	Total
Nevada							
Washoe	Wood	44	63	142	97	61	407
	Steel	25	16	52	90	116	300
	Concrete	32	27	76	107	125	368
	Precast	34	21	70	108	144	376
	Reinforced Masonry	69	30	99	150	160	498
	Unreinforced Masonry	54	57	117	137	222	587
	Manufactured Home	93	95	309	633	837	1,968
Total		341	310	866	1,322	1,665	4,504
Region Total		341	310	866	1,322	1,665	4,504

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Building Damage by Count by General Occupancy

November 15, 2016

	# of Buildings					Total
	None	Slight	Moderate	Extensive	Complete	
Nevada						
Washoe						
<i>Agriculture</i>	101	68	58	27	17	271
<i>Commercial</i>	1,914	1,460	1,746	1,017	639	6,776
<i>Education</i>	74	55	55	31	20	235
<i>Government</i>	47	34	40	26	17	164
<i>Industrial</i>	547	377	461	262	156	1,803
<i>Religion</i>	141	115	115	66	40	478
<i>Other Residential</i>	3,866	3,968	4,745	4,077	2,298	18,954
<i>Single Family</i>	60,314	42,557	14,514	1,232	270	118,887
Total	67,003	48,636	21,733	6,738	3,458	147,568
Region Total	67,003	48,636	21,733	6,738	3,458	147,568

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Building Damage % Distribution by Building Type for Low Design Level

November 15, 2016

% Distribution by Damage State

None	Slight	Moderate	Extensive	Complete
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County

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Study Region : NV_WashoeCounty
Scenario : EQ65_MountRoseFaultZone

Building Damage % Distribution by Building Type for Medium Design Level

November 15, 2016

% Distribution by Damage State

	None	Slight	Moderate	Extensive	Complete
Nevada					
Washoe					
Wood	49.68	33.91	14.79	1.26	0.35
Steel	20.38	15.48	32.49	23.91	7.75
Concrete	25.50	22.77	30.02	17.02	4.69
Precast	27.11	18.83	31.95	17.58	4.53
Reinforced Masonry	46.31	19.09	23.75	9.89	0.95
Manufactured Home	9.80	13.10	32.26	31.88	12.96
County	46.20	31.20	17.03	4.26	1.31

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Building Damage % Distribution by Building Type for High Design Level

November 15, 2016

% Distribution by Damage State

	None	Slight	Moderate	Extensive	Complete
Nevada					
Washoe					
Wood	50.83	39.43	9.27	0.40	0.07
Steel	38.56	29.14	26.89	5.07	0.25
Concrete	46.03	35.87	15.71	2.27	0.11
Precast	35.43	30.54	28.25	5.09	0.69
Reinforced Masonry	51.29	27.51	18.37	2.56	0.27
Manufactured Home	9.76	13.07	32.24	31.92	13.01
County	47.07	36.84	11.68	3.22	1.19

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Building Damage % Distribution by Building Type for Pre Code Design Level

November 15, 2016

% Distribution by Damage State

	None	Slight	Moderate	Extensive	Complete
Nevada					
Washoe	10.91	15.50	34.87	23.77	14.95
Wood	8.43	5.45	17.36	30.11	38.65
Steel	8.65	7.38	20.72	29.17	34.09
Concrete	8.92	5.53	18.60	28.71	38.24
Precast	11.82	6.05	19.93	30.10	32.10
Reinforced Masonry	9.14	9.72	19.94	23.36	37.83
Unreinforced Masonry	4.73	4.85	15.72	32.15	42.55
Manufactured Home					
County	7.56	6.88	19.23	29.35	36.97

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Study Region : NV_WashoeCounty
 Scenario : EQ65_MountRoseFaultZone

Hospital Functionality

November 15, 2016

	Total # of Beds	At Day 1		At day 3		At day 7		At day 30		At day 90	
		# of Beds	%	# of Beds	%	# of Beds	%	# of Beds	%	# of Beds	%
Nevada											
Washoe											
Large Hospital	740	98	13.30	104	14.10	340	46.00	642	86.80	685	92.50
Medium Hospital	431	107	24.88	111	25.68	252	58.50	393	91.20	410	95.04
Small Hospital	62	21	33.60	21	34.40	41	65.45	58	92.80	59	95.90
Total	1,233	295	23.90	305	24.70	698	56.70	1,113	90.30	1,165	94.50
Total	1,233	295	23.90	305	24.70	698	56.70	1,113	90.30	1,165	94.50
Region Total	1,233	295	23.93	305	24.73	698	56.65	1,113	90.27	1,165	94.48

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Emergency Operation Center Functionality

November 15, 2016

	Count	Functionality(%) At Day 1
Total		
Region Total		

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Fire Station Facilities Functionality

November 15, 2016

	Count	Functionality(%) At Day 1
Nevada		
Washoe	14	58.80
Total	14	58.80
Region Total	14	58.80

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Study Region : NV_WashoeCounty

Page : 1 of 1

Scenario : EQ65_MountRoseFaultZone

Police Station Facilities Functionality

November 15, 2016

	Count	Functionality(%) At Day 1
Nevada		
Washoe	9	49.20
Total	9	49.20
Region Total	9	49.20

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

School Functionality

November 15, 2016

	Count	Functionality (%)
Nevada		
Washoe	135	2.00
Total	135	2.00
Region Total	135	2.00

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Military Installations Structural Damage by Class

November 15, 2016

	Average for Damage State (%)					
	# of Facilities	None	Slight	Moderate	Extensive	Complete
Total						
Region Average						

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Building Stock Exposure By General Occupancy

November 15, 2016

All values are in thousands of dollars

	Residential	Commercial	Industrial	Agriculture	Religion	Government	Education	Total
Nevada								
Washoe	40,368,402	6,443,066	1,621,130	72,382	417,601	176,828	352,379	49,451,788
Total	40,368,402	6,443,066	1,621,130	72,382	417,601	176,828	352,379	49,451,788
Region Total	40,368,402	6,443,066	1,621,130	72,382	417,601	176,828	352,379	49,451,788

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Study Region : NV_WashoeCounty

Scenario : EQ165_MountRoseFaultZone

Transportation System Dollar Exposure

November 15, 2016

All values are in thousands of dollars

	Highway	Railway	Light Rail	Bus Facility	Ports	Ferries	Airport	Runway	Total
Nevada									
Washoe									
Segments	5,852,216	222,920	0	0	0	0	21,302	189,820	6,075,137
Bridges	423,999	1,426	0	0	0	0	0	0	425,424
Tunnels	0	0	0	0	0	0	0	0	0
Facilities	18,641	0	0	1,188	0	0	21,302	189,820	41,131
Total	6,276,215	242,987	0	1,188	0	0	21,302	189,820	6,731,513
Total	6,276,215	242,987	0	1,188	0	0	21,302	189,820	6,731,513
Region Total	6,276,215	242,987	0	1,188	0	0	21,302	189,820	6,731,513

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Utility System Dollar Exposure

November 15, 2016

All values are in thousands of dollars

	Potable Water	Waste Water	Oil Systems	Natural Gas	Electric Power	Communication	Total
Nevada							
Washoe							
Facilities	108,891	435,564	0	0	479,600	3,706	1,027,761
Pipelines	353,102	211,861	0	141,241			706,204
Total	461,993	647,425	0	141,241	479,600	3,706	1,733,965
Total	461,993	647,425	0	141,241	479,600	3,706	1,733,965
Region Total	461,993	647,425	0	141,241	479,600	3,706	1,733,965

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Potable Water Pipeline Damage

November 15, 2016

	Pipeline Length (KM)	Total Number of Leaks	Total Number of Breaks
Nevada			
Washoe	17,655	4,157	1,039
Total	17,655	4,157	1,039
Region Total	17,655	4,157	1,039

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Potable Water System Facility Damage

November 15, 2016

		Average for Damage State				
	# Facilities	None	Slight	Moderate	Extensive	Complete
Nevada	3	0.05	0.23	0.42	0.25	0.06
Washoe	3	0.05	0.23	0.42	0.25	0.06
Total	3	0.05	0.23	0.42	0.25	0.06
Region Total	3	0.05	0.23	0.42	0.25	0.06

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Waste Water Pipeline Damage

November 15, 2016

	Pipeline Length (KM)	Total Number of Leaks	Total Number of Breaks
Nevada			
Washoe	10,593	2,979	745
Total	10,593	2,979	745
Region Total	10,593	2,979	745

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Study Region : NV_WashoeCounty
Scenario : EQ65_MountRoseFaultZone

Potable Water System Performance

November 15, 2016

of households without water

Total Households	At day 1		At day 3		At day 7		At day 30		At day 90		
	Count	%	Count	%	Count	%	Count	%	Count	%	
Nevada	163,445	42,038	25.70	38,965	23.80	32,752	20.00	2,738	1.70	0	0.00
Washoe	163,445	42,038	25.70	38,965	23.80	32,752	20.00	2,738	1.70	0	0.00
Total											
Region Total											

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Casualties Summary Report At 2 AM

November 15, 2016

	Population	Injury Severity Level				total
		Severity 1	Severity 2	Severity 3	Severity 4	
Nevada						
Washoe						
Other-Residential		819	201	22	41	1,083
Hotels		0	0	0	0	0
Commercial		28	8	1	3	39
Industrial		30	8	1	3	42
Educational		0	0	0	0	0
Commuting		0	0	0	0	1
Single Family		235	32	2	4	274
Total Washoe	421,407	1,112	250	27	51	1,440
Total Nevada		1,112	250	27	51	1,440
Region Total		1,112	250	27	51	1,440

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Casualties Summary Report At 2 PM

November 15, 2016

	Population	Severity 1 #	Severity 2 #	Severity 3 #	Severity 4 #	Total #
Nevada						
Washoe						
Other-Residential		162	40	5	8	215
Hotels		0	0	0	0	0
Commercial	1,558	447	73	143	2,221	2,221
Industrial	221	62	10	19	311	311
Educational	445	128	21	42	636	636
Commuting	1	1	2	0	5	5
Single Family	45	6	1	1	53	53
Total Washoe	421,407	2,432	686	111	213	3,442
Total Nevada	2,432	686	111	213	3,442	3,442
Region Total	2,432	686	111	213	3,442	3,442

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Casualties Summary Report At 5 PM

November 15, 2016

	Population	Injury Severity Level				total
		Severity 1	Severity 2	Severity 3	Severity 4	
Nevada						
Washoe						
Other-Residential		305	75	9	16	404
Hotels		0	0	0	0	0
Commercial		1,076	308	50	98	1,532
Industrial		138	39	6	12	194
Educational		62	18	3	6	89
Commuting		19	24	41	8	92
Single Family		90	13	1	2	105
Total Washoe	421,407	1,688	477	110	141	2,416
Total Nevada		1,688	477	110	141	2,416
Region Total		1,688	477	110	141	2,416

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Casualties Summary Report

November 15, 2016

	Injury Severity Level				Total
	Severity 1	Severity 2	Severity 3	Severity 4	
Nevada					
Washoe					
Casualties - 2am					
<i>Industrial</i>	30	8	1	3	42
<i>Other-Residential</i>	819	201	22	41	1,083
<i>Commercial</i>	28	8	1	3	39
<i>Single Family</i>	235	32	2	4	274
<i>Educational</i>	0	0	0	0	0
<i>Hotels</i>	0	0	0	0	0
<i>Commuting</i>	0	0	0	0	1
Total Casualties - 2am	1,112	250	27	51	1,440
Casualties - 2pm					
<i>Commercial</i>	1,558	447	73	143	2,221
<i>Single Family</i>	45	6	1	1	53
<i>Commuting</i>	1	1	2	0	5
<i>Other-Residential</i>	162	40	5	8	215
<i>Educational</i>	445	128	21	42	636
<i>Hotels</i>	0	0	0	0	0
<i>Industrial</i>	221	62	10	19	311
Total Casualties - 2pm	2,432	686	111	213	3,442
Casualties - 5pm					
<i>Other-Residential</i>	305	75	9	16	404
<i>Industrial</i>	138	39	6	12	194
<i>Hotels</i>	0	0	0	0	0
<i>Educational</i>	62	18	3	6	89
<i>Commuting</i>	19	24	41	8	92
<i>Commercial</i>	1,076	308	50	98	1,532
<i>Single Family</i>	90	13	1	2	105
Total Casualties - 5pm	1,688	477	110	141	2,416
Region Total	NA	NA	NA	NA	NA

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Direct Economic Losses For Buildings

November 15, 2016

All values are in thousands of dollars

	Capital Stock Losses					Loss Ratio %	Income Losses				Total Loss
	Cost Structural Damage	Cost Non-struct. Damage	Cost Contents Damage	Inventory Loss			Relocation Loss	Capital Related Loss	Wages Losses	Rental Income Loss	
Nevada	736,381	3,226,882	1,199,551	29,220		8.01	376,519	229,581	315,949	266,972	6,381,056
Washoe	736,381	3,226,882	1,199,551	29,220		8.01	376,519	229,581	315,949	266,972	6,381,056
Total	736,381	3,226,882	1,199,551	29,220		8.01	376,519	229,581	315,949	266,972	6,381,056
Region Total	736,381	3,226,882	1,199,551	29,220		8.01	376,519	229,581	315,949	266,972	6,381,056

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Direct Economic Loss For Transportation

November 15, 2016

All values are in thousands of dollars

	Highway	Railway	Light Rail	Bus Facility	Ports	Ferries	Airport	Total
Nevada								
Washoe								
Segments	0	0	0					0
Bridges	41,247	79	0					41,327
Tunnels	0	0	0					0
Facilities		7,102	0	531	0	0	6,648	14,281
Total	41,247	7,181	0	531	0	0	6,648	55,607
Total	41,247	7,181	0	531	0	0	6,648	55,607
Region Total	41,247	7,181	0	531	0	0	6,648	55,607

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Direct Economic Loss For Utilities

November 15, 2016

All values are in thousands of dollars

	Potable Water	Waste Water	Oil Systems	Natural Gas	Electric Power	Communication	Total
Nevada							
Washoe							
Facilities	30,765	84,572	0	0	110,802	668	226,807
Pipelines	18,706	13,406	0	3,845			35,956
Total	49,471	97,978	0	3,845	110,802	668	262,763
Total	49,471	97,978	0	3,845	110,802	668	262,763
Region Total	49,471	97,978	0	3,845	110,802	668	262,763

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Shelter Summary Report

November 15, 2016

	# of Displaced Households	# of People Needing Short Term Shelter
Nevada		
Washoe	6,036	4,043
Total	6,036	4,043
Region Total	6,036	4,043

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Study Region : NV_WashoeCounty
Scenario : EQ65_MountRoseFaultZone

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Appendix L Health and Safety Strategy

Purpose

The Regional Partners committed to providing a safe working environment to all its employees and contractors. The Washoe County Health and Safety Strategy establishes guidelines to ensure safety standards for County and contract employees are met. Ultimately, health and safety is the responsibility of the Regional Partners and contracted parties involved in debris removal activities. In this document, Regional Partners and contractor project managers will find: guidelines on dissemination of safety information to all emergency workers; measures to ensure compliance with established health and safety standards; potential hazards at debris loading areas and temporary debris storage and reduction sites (TDSRs); information on how to identify hazardous conditions in the field; and guidelines on the appropriate and proper use of personal protective equipment (PPE).

Dissemination of Information

Project managers from the County and its debris removal contractors will be provided a copy of this document and are expected to share the information and guidelines with all emergency workers. Additionally, a copy of the Regional Debris Management Plan should be available to all Regional Partner and contractor employees. Parts of the Health and Safety Strategy should be reviewed periodically to increase worker awareness. During the course of a project, the Regional Partners and their contractors should hold daily safety meetings. These meetings should give an active picture of response operations on the ground and facilitate communication between project managers from the Regional Partners and debris removal contractors. Information from the meetings should be used to update the TDSRs, as necessary.

Compliance

It is the responsibility of the Regional Partners and debris removal contractors to ensure their employees comply with health and safety guidelines. Activities that promote compliance include, but are not limited to:

- Health and safety training on disaster- or hazard-specific threats.
- Accurate and timely reporting to the County of debris removal activities, health and safety issues, workplace injuries, etc. by the contractor.
- Suspension of non-compliant crews or individuals until the situation is resolved.
- Per County and contractor policy, dismissal of frequent health and safety policy offenders.



Job Hazard Assessment

Assessing the specific hazards created by a debris-generating event is critical to ensuring employee health and safety. The type of debris generated by a disaster will vary depending on the type, strength, and duration of the event, as well as the terrain, building types, and population of the impact area. At a minimum, emergency workers should consider the following focus areas as part of a job hazard assessment:

- **Climate, Terrain, & Geography.** Local climate, terrain, and geography has a significant effect on the type of disaster and the emergency response. Washoe County is susceptible to natural disasters such as winter storms, flooding from the Truckee River, storms generating large amounts of rainfall and wind-blown debris, and seismic activity due to the County's proximity to fault lines. Awareness of the local climate and geography can help prepare for and streamline an emergency response.
- **Debris Collection and Removal.** A crucial early step in disaster debris removal is to clear the public right-of-way (ROW) and critical ingress/egress routes. This often involves working with heavy equipment and power tools to reduce, separate, and clear disaster debris. Proper precautions should be taken when working with power tools and only those properly trained should operate heavy machinery.
- **Debris Disposal.** After debris is collected it is often transported to a TDSR site for reduction and disposal. Emergency workers are more likely to be exposed to falling debris, heavy construction traffic, high noise levels, dust and airborne chemicals from waste reduction and disposal. The County should develop monitoring methods for debris removal to ensure contractors are in compliance with health and safety regulations and the work contract. Methods may include preparation of a debris monitoring report by the contractor, a truck certification list, and a load ticket system.
- **Disaster Debris.** Man-made and natural disasters typically generate large quantities of debris that must be collected and disposed of. This debris may include, but is not limited to: hazardous materials, sharp or splintered vegetative material, construction and demolition (C&D) debris, and white goods.
- **Hazardous Materials.** A hazardous material is a substance that can threaten or harm people, the environment, or property. This definition includes specific regulatory terms such as hazardous waste, hazardous substances, hazardous chemicals, and toxic substances. In the event of a Chemical, Biological, Radiological, Nuclear (CBRN) event, emergency workers should be trained and aware of the following:
 - **Hot Zone** – Also known as the Exclusion Zone. Extent of the area where contamination is known to occur or will likely occur; appropriate PPE must be worn in this zone.
 - **Warm Zone** – In the event of a CBRNE operation, emergency workers exiting the Hot Zone must decontaminate their person and equipment in a buffer area known as the Contamination Reduction Zone, or Warm Zone.



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix L: Health and Safety Strategy

- **Cold Zone** – The Cold Zone is also known as the Support Zone. This is an area beyond the exclusion and contamination reduction zone where no contamination should be present. In a CBRNE event, emergency workers should know where the Cold Zone is located.
- **Traffic Safety.** Disaster debris often obstructs the public ROW. As a result, emergency workers may need to conduct debris removal operations in varying levels of traffic congestion. In addition, debris often damages road signs and other transportation infrastructure, challenging the safety of emergency workers and the public on ROWs.
- **Wildlife Awareness.** Displaced and/or traumatized pets, livestock, and wildlife pose a hazard for emergency workers. Only trained professionals should approach or handle a distressed animal.

See Table 1 for a more complete list of potential job hazards encountered during a debris removal operation. See Appendix N - Job Hazard Analysis Template for the form created by Animal and Plant Inspection Service (U.S. Department of Agriculture).

Administrative and Engineering Controls

Administrative and engineering controls include policies, trainings, and procedures that provide proper guidance for safe debris removal operations. The controls should promote the mindset that all personnel involved in debris removal operations are risk managers. Administrative and engineering controls the County should utilize include, but are not limited to:

- **Basic Health and Safety Training.**
 - HAZWOPER, First Aid, 29 CFR 1910.120 requirements, etc.
- **Safety Briefings.**
 - Daily meetings should cover, at a minimum:
 - ♦ A review of the past day's injuries/incidents,
 - ♦ Any work procedure changes and the accompanying safety procedure changes,
 - ♦ Any changes to the Command or Supervisory structure,
 - ♦ Any issues/cautions the Safety Officer considers relevant,
 - Promote a proactive stance toward emergency operations.
- **Regular Equipment Calibration and Maintenance.**
 - County and contractor personnel must ensure all equipment used in debris removal (hand tools, power tools, heavy machinery, safety equipment, etc.) is calibrated, documented, and well maintained.
 - All equipment used for emergency operations should be checked monthly.



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix L: Health and Safety Strategy

- **Accountability.**
 - All employees should be held accountable for their actions in preparation, execution, and reporting of emergency operations.
- **Utilize the Buddy System.**
 - Employees should be organized into work groups so that the work of one employee is always observed by another.
- **Adhere to Well-Established Protocols.**
 - See Table 1 for specific hazard controls for the following debris management activities:
 - ◆ Collection operations,
 - ◆ Power tools and heavy machinery, and
 - ◆ TDSR sites/Disposal Operations.
- **Heed Warnings from U.S. Geological Survey About Seismic Activity in the Area.**
 - Begin retrofitting buildings to withstand a large (≥ 6.5 magnitude) earthquake.
- **Consider Construction/Restoration of Wetlands in Areas Particularly Prone to Flooding.**

Personal Protective Equipment

PPE is equipment worn by individuals to minimize exposure to serious workplace injury. PPE is the *last* line of defense against workplace hazards and does not reduce or eliminate workplace hazards as administrative and engineering controls do. The County and its contractors are required to train personnel on the use of PPE. Training topics should include:

- When use of PPE is necessary.
- What kind of PPE is necessary.
 - For example, wearing the wrong kind of respirator can expose an emergency worker to carcinogenic particles.
- How to properly put on, adjust, wear, take off, and store PPE.
 - Proper fitting of some PPE may require the help of a medical professional.
- Limitations of the equipment.
- Proper care, maintenance, useful life, and disposal of the equipment.
 - This information is always outlined in detail in the manufacturer's instructions.



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix L: Health and Safety Strategy

The type of PPE used during debris management activities depends greatly on the situation. Table 2 lists general categories of PPE and equipment that may be required during debris removal operations.

For additional information regarding health and safety requirements, please contact the following agencies:

Health and Safety Contact Information	
Occupational Safety & Health Administration	1-800-321-6742
Nevada Division of Emergency Management	775-687-0300
Nevada Division of Environmental Protection	775-687-4670
Washoe County Emergency Management and Homeland Security program	775-337-5898










Table 1. Common Job Hazards Associated with Debris Removal Operations	
Hazard	Hazard Control Measures
Hazardous Material	<ul style="list-style-type: none"> • Wear appropriate PPE • Treat any unidentified material as hazardous
Disaster Debris	<ul style="list-style-type: none"> • Follow established health and safety guidelines
TDSR Sites and Disposal Operations	<ul style="list-style-type: none"> • Use jersey barriers and cones to properly mark traffic patterns. • Use proper flagging techniques for directing traffic. • Monitor towers must not exit into traffic and should have hand and guard rails to reduce trips and falls. • Monitor towers must have properly constructed access stairways with proper treads and risers and proper ascent angle (4:1 height/width ratio). • Monitor towers must be surrounded by jersey barriers which protect the towers and monitors from being struck by inbound or outbound collection vehicles. • Monitor towers should be located upwind from dust and particulate generating activities. • A water truck should spray the site daily to control airborne dust and debris.
Debris Removal	<ul style="list-style-type: none"> • Conduct debris removal operations during daylight hours only or implement appropriate safety procedures for nighttime operations. • Limit clean-up operations to one side of the road at a time. • Limit collection work under overhead lines. • Inspect piles before using heavy equipment to remove them to ensure that there are no alarms. • Load collection vehicles properly (not overloaded or unbalanced). • Cover and secure loads, if necessary • When monitoring the collection process, stay alert in traffic and use safe driving techniques.
Heavy Equipment Operation	<ul style="list-style-type: none"> • Define equipment routes, traffic patterns, and site-specific safety measures • Ensure operators are properly trained and equipment has been properly inspected and maintained. • Verify back-up alarms. • Ensure ground spotters are assigned and informed of proper hand signals and communication protocols. • Identify special PPE and monitoring needs. • Ensure field personnel do not work in proximity to operating equipment. • Ensure lifting capacities, load limits, etc. are not exceeded.
Noise	<ul style="list-style-type: none"> • Establish noise level standards for on-site equipment/operations. • Inform personnel of hearing protection requirements. • Define requirements for noise-monitoring.
Utility Lines	<ul style="list-style-type: none"> • Identify/locate existing utilities prior to work. • Ensure that overhead utility lines are at least 25 feet away from project activities. • Contact utilities, to confirm locations, as necessary.



Table 1. Common Job Hazards Associated with Debris Removal Operations	
Hazard	Hazard Control Measures
Power Tools	<ul style="list-style-type: none"> • Ensure compliance with 29 CFR 1910 Subpart B. • Inspect all power tools before use. • Do not use damaged or defective equipment. • Use power tools for their intended purpose. • Avoid using power tools in wet areas.
Hand Tools	<ul style="list-style-type: none"> • Follow established safety procedures when using hand tools.
Slips, Trips, and Falls	<ul style="list-style-type: none"> • Stay in good physical condition. • Wear appropriate and properly fitting footwear. • Stay well hydrated. • Do not be in too much of a hurry. • Be attentive—constantly scan the way ahead when walking.
Working Near Traffic	<ul style="list-style-type: none"> • Wear high visibility PPE. • Place traffic cones for static operations. • Use spotters/flagmen in high traffic areas. • Identify/locate utilities prior to work.
Climate	<ul style="list-style-type: none"> • Monitor employee heat/cold stress. • Provide cool/warm break areas and adequate breaks. • Provide cool/warm non-caffeinated beverages. • Promote awareness of heat/cold stress.
Fire and Explosion	<ul style="list-style-type: none"> • Inform personnel of the location(s) of potential fire/explosion hazards. • Establish site-specific procedures for working around flammables. • Ensure that appropriate fire suppression equipment and systems are available and in good working order. • Define requirements for intrinsically safe equipment. • Identify special monitoring needs. • Remove ignition sources from flammable atmospheres. • Coordinate with local fire-fighting groups regarding potential fire/explosion situations. • Establish contingency plans and review daily with team members.
Biological (flora, fauna)	<ul style="list-style-type: none"> • Do not approach displaced pets or wildlife without proper training. • Coordinate with local wildlife-handling agencies regarding displaced and distressed animals. • Wear appropriate PPE when handling sharp or splintered vegetative debris.
Other:	



Table 2. Personal Protective Equipment Typically Used in Debris Management Activities

	<ul style="list-style-type: none">• Hard hat• Must comply with ANSI Z89.1-1986, "American National Standard for Personnel Protection – Protective Headwear for Industrial Workers" Requirements
	<ul style="list-style-type: none">• Sturdy work gloves
	<ul style="list-style-type: none">• Face shield• Safety glasses• Must comply with ANSI Z87.1-1989, "American National Standard Practice for Occupational and Educational Eye and Face Protection" Requirements
	<ul style="list-style-type: none">• Ear plugs• Ear muffs• Must comply with ANSI S3.19-1974, "American National Standard Practice for Personal Protection – Hearing Protection" Requirements
	<ul style="list-style-type: none">• Respirator• Dust mask• Must comply with ANSI Z88.2-1992
	<ul style="list-style-type: none">• Reflective vest• Long pants• Coveralls
	<ul style="list-style-type: none">• Properly fitting footwear• Rugged shoes or boots; steel toe if required• Must comply with ANSI Z-41-1991, "American National Standard for Personal Protection" Requirements



Appendix M Job Hazard Analysis (JHA) Template

Date: _____ New JHA Revised JHA Page _____ of _____

Task Title: _____

Task Overview: _____

Task Elements: _____

Personal Protective Equipment: _____

Tools and Equipment: _____

OCCUPATIONAL HEALTH CONCERNS

Chemical Agents: _____

Physical Agents: _____

Biological Agents: _____

Activity/ Sequence of Job Steps: _____

Potential Hazards/Injury Sources: _____

Safe Action or Procedure: _____

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Appendix N Public Assistance Tools

FEMA Public Assistance Forms

Electronic copies of FEMA public assistance materials can be found at <http://www.fema.gov/government/grant/pa/forms.shtm>. Additionally, the following forms are provided in their entirety in this appendix:

- Request for Public Assistance (FF90-49)
- Hazard Mitigation Proposal (FF90-61)
- Project Worksheet (FF90-91)
 - PW-Damage Description and Scope of Work Continuation Sheet (FF90-91A)
 - PW-Cost Estimate Continuation sheet (FF90-91B)
 - PW-Maps and Sketches Sheet (FF90-91C)
 - PW-Photo Sheet (FF90-91D)
- Validation Worksheet (FF90-118)
- Project Validation Form (FF90-119)
- Special Considerations Questionnaire (FF90-120)
- PNP Facility Questionnaire (FF90-121)
- Historic Review For Determination of Adverse Effect (FF90-122)
- Force Account Labor Summary Record (FF90-123)
- Materials Summary Record (FF90-124)
- Rented Equipment Summary Record (FF90-125)
- Contract Work Summary Record (FF90-126)
- Force Account Equipment Summary Record (FF90-127)
- Applicant's Benefit Calculation (FF90-128)

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Appendix O Public Information Strategy

Public information during a debris generating event will be coordinated through the Regional Emergency Operations Center (REOC) via the Public Information Officer (PIO). When the REOC is not activated, these activities will be coordinated by the PIO of the affected Regional Partner. This Public Information Strategy is intended to assist the PIO with coordination of public information specific to debris management. It is meant as a supplement to the Regional Emergency Operations Plan (REOP). This strategy:

- Identifies the type of public information that will need to be prepared during a debris generating event.
- Assigns roles and responsibilities for dissemination of public information during a debris generating event.
- Provides for a Public Inquiry Center that can be activated to support public information activities during a debris generating event.

Debris Public Information

The public will require information specific to the type of debris generated by the event, as well as safe storage and collection. In general, debris topics will include:

- **Debris Clean-Up and Waste Instructions.** Safe handling of debris and waste (including human waste), as well as identification and safe handling of hazardous debris and waste.
- **Collection Information.** Information on source-separation of debris and waste, debris collection, (curb-side collection schedules, debris management sites, and Temporary Debris Storage and Reduction [TDSR] sites), collection of hazardous debris and wastes, and fees.
- **Status of Cleanup.** Emergency responders and the public will require information on debris clearance from key transportation routes as well as the status of recovery efforts.
- **Illegal Dumping.** Information addressing complaints and illegal debris piles.



Roles and Responsibilities

Department/Agency	Roles and Responsibilities
Public and Government Affairs	<ul style="list-style-type: none">▪ Coordinate public information activities when the REOC is not activated.▪ Provide a trained PIO to staff the REOC when activated.▪ Maintain a media contact list.
Public Information Officer	<ul style="list-style-type: none">▪ Coordinate all public information aspects of the incident including those related to debris operations.▪ Coordinate with counterpart PIOs at the local, state, and federal level.▪ Activate a Joint Information Center (JIC), as needed, to facilitate coordination of information between partners.▪ Activate a Public Inquiry Center, as needed, to respond to public inquiries regarding debris operations.▪ Ensure all public messaging is approved by EOC Command.
Debris Management Team	<ul style="list-style-type: none">▪ Coordinate countywide debris management operations.▪ Provide situation status information on debris management operations to the PIO.
Public Inquiry Center	<ul style="list-style-type: none">▪ Provide an access point for the public to call regarding questions and concerns related to debris management operations.▪ Assist in rumor control.
Joint Information Center	<ul style="list-style-type: none">▪ Ensure the various response agencies' information personnel work together to minimize conflict.▪ Write and communicate emergency public information regarding debris operations.▪ Ensure the timely and coordinated release of accurate information to the public by providing a single release point of information.
Local Media	<ul style="list-style-type: none">▪ Disseminate debris management information to audience.▪ Assist in rumor control.
County Residents	<ul style="list-style-type: none">▪ Monitor local media and other sources of public information.▪ Follow instructions provided by official sources.



Dissemination Strategies

The PIO may utilize a variety of methods for dissemination of information regarding debris management operations including:

- **Press releases** – A press release is a prepared written news release that uses current data and information.
- **Media briefing or conference** – A briefing is an exchange of information on a single topic and typically includes a question-and-answer period, whereas a conference is a gathering of media where reporters expect to be able to ask questions on a variety of topics.
- **Print Media** – Print media, including newspapers and magazines, allow PIOs to disseminate public information such as detailed information, background, and input from subject matter experts.
- **Radio** – In addition to warnings issued by the EAS, radio allows PIOs to release audio clips and sound bites to the public.
- **Television** – PIOs may utilize television to disseminate visuals, sound bites, and graphics to the public.
- **Internet** – The internet is a dynamic communication conduit that includes webpages, RSS feeds, and e-mail and can be used as a strategic path for sharing information during an emergency.
- **Newsletters/Mailers** – Information sent directly to the public can provide details on events and activities as well as background information on the Region's emergency management programs.
- **Social Media** – Web-based platforms may be used for alerting the public in sudden onset and rapidly developing disasters, direct communication with large groups of constituents, building situational awareness, fostering transparency and accountability, obtaining feedback, and responding quickly to rumors and misinformation. Common types of social media are:
 - Blogs
 - Social Networking (e.g., Facebook, LinkedIn)
 - Media Sharing (e.g., YouTube, Flickr, Pinterest, Instagram)
 - Wiki
- **Call Center** – May be used as a way to divert unnecessary calls away from the 9-1-1 system, gather information to increase situational awareness of the incident, and disseminate emergency public information.
- **Public Inquiry Center.** See below.



The PIO will be responsible for ensuring that the public information strategy and strategies for dissemination of information evolve with the event.

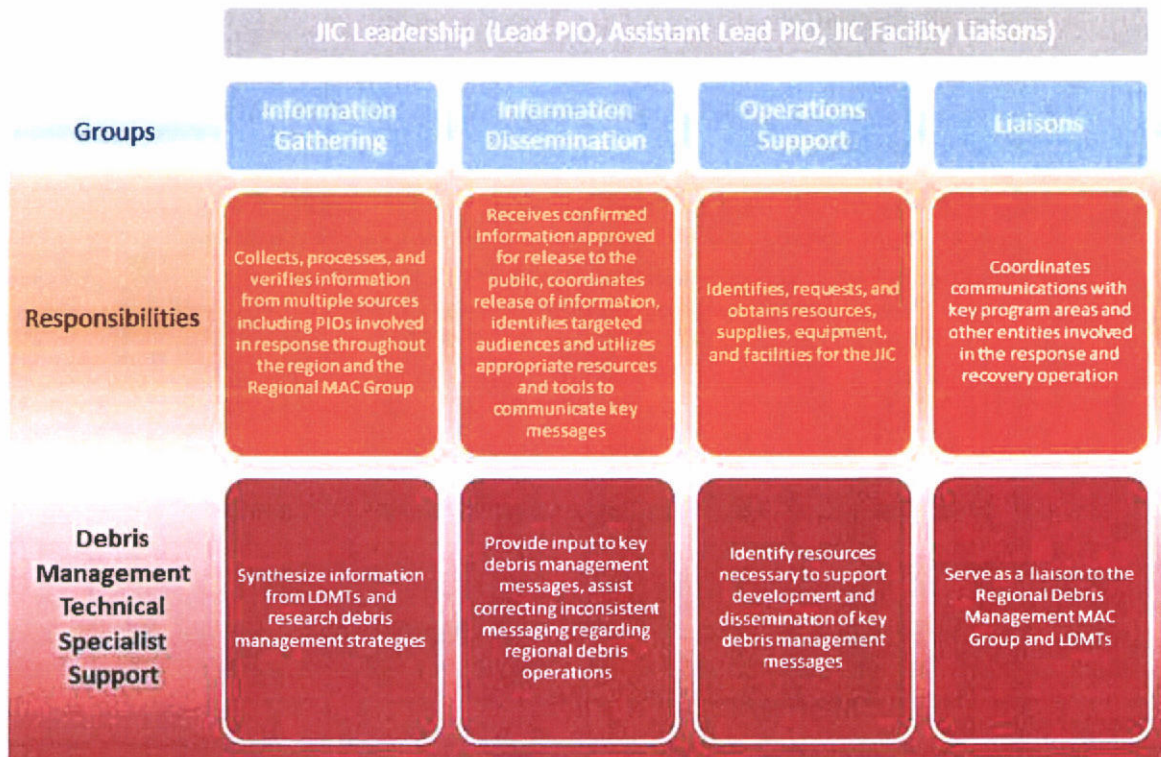
Public Inquiry Center

A debris generating event may result in a high level of requests for information from the public. The PIO may choose to establish a Public Inquiry Center to assist in facilitating request from the public for information and to prevent dissemination of incorrect or conflicting information. The Public Inquiry Center will serve as a clearing house for public information related to a debris-generating event and may include services available at local government offices, through a telephone hotline, or through the Regional Partners’ website. The Public Inquiry Center may be established concurrently with activation of a JIC to facilitate coordination of public information with regional partners.

Joint Information Center

During a debris generating event that impacts multiple jurisdictions within the region, the PIO may choose to activate a JIC or to provide a representative to a JIC activated by another jurisdiction.

The following figure shows how public information related to debris management may be managed through a fully activated JIC. The Debris Management Team may assign a technical specialist with experience specific to debris management to the JIC or may provide information directly.



WASHOE REGIONAL DEBRIS MANAGEMENT PLAN

Appendix O: Public Information Strategy



FEMA

www.fema.gov



www.ema.alabama.gov



US Army Corps of Engineers®

www.usace.army.mil

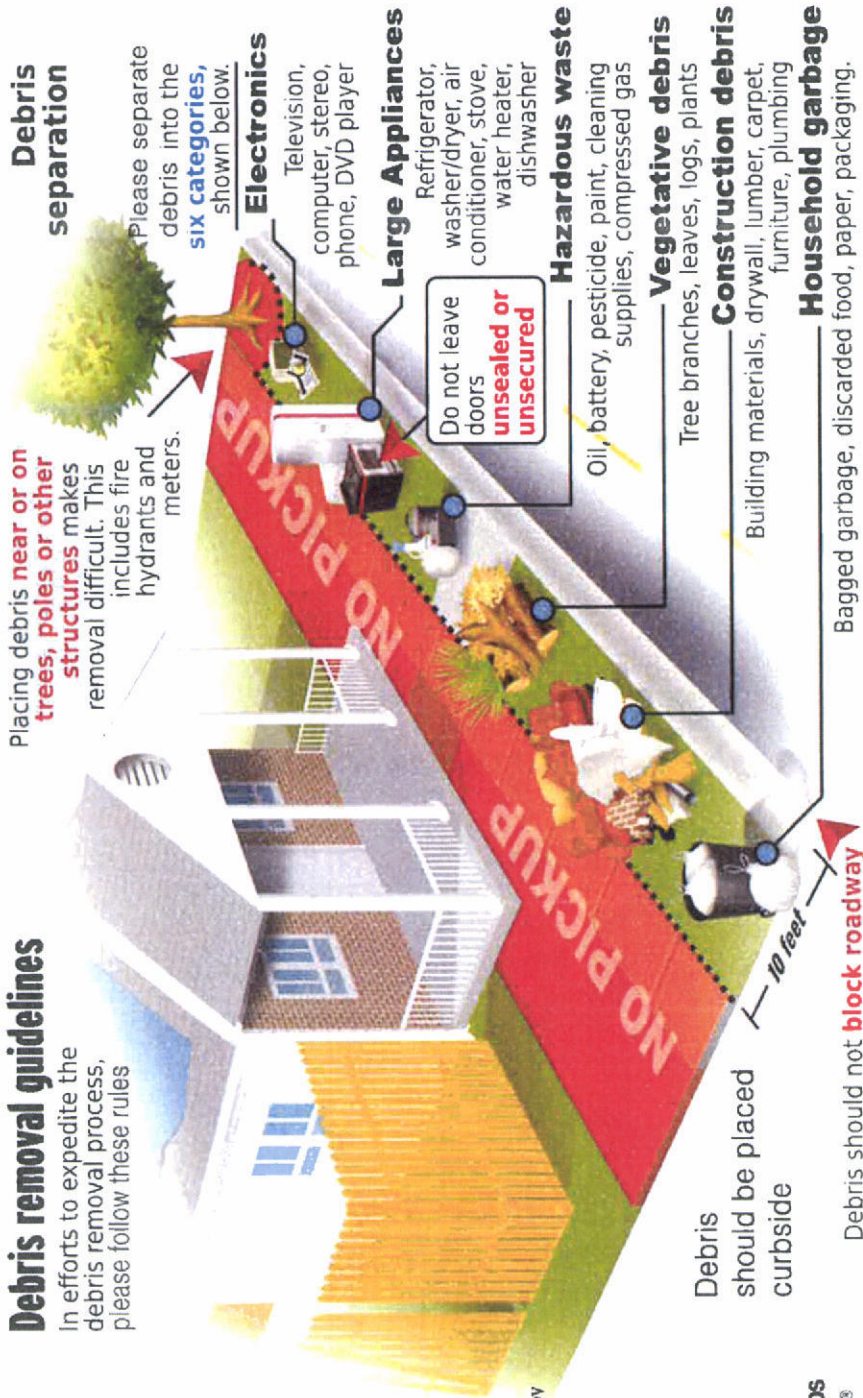
Debris removal guidelines

In efforts to expedite the debris removal process, please follow these rules

Placing debris **near or on trees, poles or other structures** makes removal difficult. This includes fire hydrants and meters.

Debris separation

Please separate debris into the **six categories, shown below.**



Electronics

Television, computer, stereo, phone, DVD player

Large Appliances

Refrigerator, washer/dryer, air conditioner, stove, water heater, dishwasher

Do not leave doors **unsealed or unsecured**

Hazardous waste

Oil, battery, pesticide, paint, cleaning supplies, compressed gas

Vegetative debris

Tree branches, leaves, logs, plants

Construction debris

Building materials, drywall, lumber, carpet, furniture, plumbing

Household garbage

Bagged garbage, discarded food, paper, packaging.

Debris should be placed curbside

Debris should not **block roadway**

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DR-1971 5/11

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Appendix P References

Federal

- 2012b. Recovery Policy RP9523.5 – Debris Removal from Waterways. 30 October 2012.
- 2010a. Recovery Fact Sheet RP9580.201 – Debris Contracting Guidance. 27 September 2010.
- 2010b. Debris Estimating Field Guide, FEMA Guide 329. September 2010.
- 2010c. Public Assistance Application Handbook, FEMA Guide P-323. March 2010.
- 2010d. Recovery Policy, RP9523.12 – Debris Operation – Hand Loaded Trucks and Trailers. 17 August 2010.
- 2008. Public Assistance Policy Digest, FEMA 321. January 2008.
- 2007a. Public Assistance – Debris Management Guide, FEMA Guide 325. July 2007.
- 2007b. Disaster Assistance Directorate, Fact Sheet 9580.203 – Debris Monitoring. 5 May 2007.
- 2007c. Disaster Assistance Policy, DAP9523.13 – Debris Removal from Private Property. 18 July 2007.
- No date. Public Assistance Guide, FEMA Guide 322. June 2007.
- United States Army Corps of Engineers (USACE). 2010. Fact Sheet – Debris Management Emergency Operations.

State and Local

- 2016. State of Nevada Disaster Recovery Framework (in progress).
- 2014. State of Nevada Comprehensive Emergency Management Plan.
- 2011. State of Nevada Response and Recovery Guide to Emergencies and Disasters for State, Local and Tribal Governments.
- 2009. State of Nevada Disaster Debris Management Plan.
- 2007. State of Nevada Solid Waste Management Plan.
- No date. Debris Management Annex, NW Nevada Earthquake CONPLAN.
- 2016. Washoe County Regional Emergency Operations Plan.
- 2016. Washoe County Regional Disaster Recovery Framework.



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix P: References

- 2015. City of Sparks Debris Management Plan.
- 2011. Washoe County Solid Waste Management Plan. (Update in progress)
- 2015-2016. City of Reno Snow and Ice Control Plan.
- 2015-2016. Washoe County Snow and Ice Control Plan.
 - Regional Emergency Snow Plow Route Maps

Out of State

- City of Grand Prairie (Texas). Disaster Debris Management Plan. July 2009.
- Nassau County (New York). Debris Management Plan. January 2009.
- Seattle Urban Area Security Initiative Region (Washington). Disaster Debris Management Plan. Updated May 2010.



Appendix Q Sample Memorandum of Agreement

This Memorandum of Agreement, made and entered into this _____ day of _____ 20____, by and between _____ (hereinafter "OWNER"), and Washoe County (hereinafter "COUNTY") (collectively referred to hereinafter as "the Parties").

WHEREAS, the COUNTY has a debris management plan for the removal, reduction, and disposal of large volumes of debris from public property following large scale disasters; and

WHEREAS, pursuant to the COUNTY debris management plan, the COUNTY may or may not enter into an agreement with one or more contractor(s) to manage and operate the removal, reduction, and disposal of disaster generated debris depending on the severity of the incident; and

WHEREAS, OWNER is the owner of a tract of land in ...City..., Nevada (hereinafter "the Property"), more particularly described in Exhibit A attached hereto; and

WHEREAS, the COUNTY has identified the Property owned by OWNER as a suitable location for a Temporary Debris Reduction and Storage Site ("TDSR Site"), to be used by the COUNTY in the event of a disaster necessitating debris removal, reduction, and disposal; and

WHEREAS, the COUNTY and the OWNER have agreed to cooperate toward establishment of a TDSR Site to be used by the COUNTY, or its designees, in the event of emergency assistance efforts requiring debris removal, reduction, and disposal in Washoe County.

Now therefore, the Parties agree as follows:

I. PROPERTY

The Property, as shown and identified as TDSR Site on Exhibit A, constitutes approximately _____ acres available for TDSR Site operations. The physical location of the site is: _____ and is a portion of property owned by OWNER identified as: _____ County Real Estate ID#: _____.

II. TERM

Subject to early termination as permitted by Section V herein below, this Agreement shall be for a term of _____ from the date of the Agreement without regard to the Commencement Date (as hereinafter defined).

III. AGREEMENT

OWNER, subject to the terms and conditions set forth herein, hereby agrees to the use of the Property by the COUNTY for purposes of staging, storing, reducing, and properly disposing of disaster generated debris following a natural or human-caused event.

IV. COUNTY OBLIGATIONS

- a. Obtain, or cause to be obtained, all required local, state, and federal permits for the operation of a TDSR Site;



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix Q: Sample Memorandum of Agreement

- b. Install, or caused to be installed, if necessary, a temporary access road (of gravel, graded dirt, or other temporary material) for access of debris hauling vehicles to the Property;
- c. Manage, or cause to be managed, the TDSR Site during the entire period of COUNTY use;
- d. Remove, or cause to be removed, all debris, vehicles, equipment, and temporary structures located on the property which were placed thereon by the COUNTY, its employees, agents, contractors, subcontractors, and representatives;
- e. Restore, or cause to be restored, the property to the property's pre-use condition prior to the return of use of property to the OWNER;
- f. Perform, or cause to be performed, soil testing and abatement of any hazards created on the property as a direct result of COUNTY use as required under local, state, and federal law prior to the closing of the debris site and return of use of the property to the OWNER;
- g. Repair, or cause to be repaired, any damage to the property, including buildings and structures located on the property, caused as a direct result of COUNTY use of the property; in lieu of making or causing to make repair, the COUNTY may compensate OWNER for the cost of said repair upon agreement of both parties.

V. OWNER OBLIGATIONS

- a. Take no action that renders the Property unusable as a TDSR Site as determined by the COUNTY;
- b. Upon notification (either verbal or in writing) by the COUNTY of the COUNTY'S intent to make use of some or all of the Property as a TDSR Site under the terms and conditions of this Agreement, to make as much of the Property as deemed necessary by the COUNTY immediately available to the COUNTY, and to immediately remove all personal property (including, but not limited to vehicles and equipment) from those portions of the Property identified by the COUNTY for use;
- c. Not interfere in any manner with COUNTY-controlled debris management operations during the period of the COUNTY'S use of the Property under the terms and conditions of this Agreement.

VI. COMMENCEMENT DATE

The COUNTY will initiate TDSR Site operations immediately preceding an event anticipated to generate debris within the COUNTY, or immediately following an event that generated debris within the COUNTY. The COUNTY will activate this Agreement through verbal notification to the OWNER, followed by written notification transmitted by United States mail as certified or registered mail, return receipt requested, postage paid, and addressed to OWNER. The "Commencement Date" shall be the date upon which notification is verbally provided by the COUNTY to OWNER.



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix Q: Sample Memorandum of Agreement

VII. ASSIGNMENT

OWNER shall not sell or in any way assign, transfer, or encumber his control of the Property without prior written notification to the COUNTY.

VIII. COMPENSATION

The parties agree that no compensation will be rendered for the use of the Property by the COUNTY. The COUNTY, or its designee(s), shall be responsible for restoring the Property to its original state.

IX. TDSR SITE OPERATIONS

The COUNTY, or its designee(s), will establish, operate, and monitor TDSR Site operations from the time of activation of this agreement through site restoration.

X. WORKING HOURS

Working hours for the TDSR Site are only during daylight hours, seven days a week. Working hours may need to be adjusted to accommodate 24-hour operations depending on the severity of the incident.

XI. DEBRIS DISPOSAL

The COUNTY, or its designee(s), will properly, promptly and lawfully dispose of all waste, ash, and debris brought to or generated on the TDSR Site.

XII. DEBRIS SOURCES

The debris stream entering the TDSR Site may include debris generated in the unincorporated areas of _____ the COUNTY, areas within neighboring municipalities, areas within County jurisdiction, and from road rights-of-way maintained by the Nevada Department of Transportation (NDOT). The COUNTY will coordinate with the NDOT, the County and neighboring municipalities with regard to debris disposal at the COUNTY-operated TDSR Site. The intention of this Agreement is to create an arrangement where NDOT, the County, and municipalities can deliver their debris to the TDSR Site upon approval by the COUNTY, and does not necessitate individual agreements between the OWNER and each entity.

XIII. NOTICES

Any notice or demand which by any provision of this agreement is required or allowed to be given by either party to the other shall be deemed to have been sufficiently given for all purposes when made in writing and sent in the United States mail as certified or registered mail, return receipt requested, postage paid, and addressed to the following respective addresses:



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix Q: Sample Memorandum of Agreement

XIV. INDEMNIFICATION

The COUNTY agrees to indemnify and hold harmless OWNER from any claims, causes of action, administrative proceedings, and any and all other legal claims directly arising out of or relating to any damage, injury, loss, or other actions or omissions taken by COUNTY, its employees, agents, contractors, subcontractors, and representatives as a direct result of the COUNTY'S use of the Property under the terms and conditions of the Agreement. The COUNTY shall not be liable for any damage, injury, loss, or other actions or omissions not taken by COUNTY, its employees, agents, contractors, subcontractors and representatives, including acts of third parties not operating at the direction of or under the control of COUNTY. Further, COUNTY shall not be liable for any injury, damage, or loss sustained by OWNER as a result of OWNER'S breach of the terms and conditions of this Agreement.

XV. TERMINATION

This Agreement shall be in effect from the last date written below until _____. This Agreement may be terminated by either party upon submission of a thirty-day advance written notice of termination. It is the intention of the Parties to discuss the renewal of this Agreement on an annual basis. Such renewals, if mutually agreed upon, shall be evidenced by an executed Supplemental Memorandum of Agreement. The Parties may choose to negotiate new or changed terms at the time of renewal.

OWNER: _____

COUNTY: _____

XVI. ENTIRE AGREEMENT

The OWNER and the COUNTY agree that this document constitutes the entire agreement between the two parties and may only be modified by a written mutual agreement signed by the parties. Modifications may be evidenced by facsimile signatures. Unless and until further modified, this agreement shall consist of this document and the following attachments or addenda: Exhibit A

XVII. GOVERNING LAW

Both parties agree that this Agreement shall be governed by the laws of the State of Nevada.

This Agreement shall be effective on the date of the last signature below. Jurisdiction in witness whereof, the Parties have each executed this Agreement, this the ____ day of _____, 20__.



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix Q: Sample Memorandum of Agreement

OWNER

BY: _____
(Signature)

(Print Name)

(Title)

DATE: _____

WASHOE COUNTY

BY: _____
(Signature)

(Print Name)

(Title)

DATE: _____

WITNESS

BY: _____
(Signature)

(Print Name)

(Title)

DATE: _____

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Appendix R Sample Press Releases

NOTE: These sample press releases are designed to assist local jurisdictions in crafting messaging for smaller scale debris-generating events.

For Immediate Release (Approximately 48-72 Hours Prior to Event)

The potential for [...INSERT HAZARD...] is eminent for the County and its residents. In anticipation of a likely large debris-generating incident, residents are asked to [...INSERT DETAILS...]. The County is prepared and has a plan in place to immediately respond following the event. Once dangerous conditions subside and roads have been cleared of obstructions, residents should bring any debris to the public right-of-way for removal.

The public right-of-way is the area of residential property that extends from the street to the sidewalk, ditch, utility pole or easement. Residents should separate clean, vegetative debris (woody burnable debris such as limbs and shrubbery) from construction and demolition debris. Do not mix hazardous material, such as paint cans, aerosol sprays, batteries, or appliances with construction and demolition debris. Household garbage, tires or roof shingles cannot be combined with any storm debris. Do not place debris near water meter vaults, fire hydrants or any other above-ground utility. Only debris placed on the public right-of-way will be eligible for collection until further notice.

If all debris is not picked up during the initial pass, residents should continue to push remaining debris to the public right-of-way for collection on subsequent passes. Residential debris drop-off locations may be available within County limits. Check the County Website [...INSERT WEBSITE ADDRESS...] for the location of these sites and the hours of operation or call [...INSERT NUMBER...]. The County website will also provide County office closure times/date (including garbage collection and County facilities). All reconstruction debris (debris resulting from rebuilding) is the responsibility of the homeowner. Those items must be dropped off at the [...INSERT LOCATION...].

County residents are encouraged to stay indoors until hazardous conditions have passed. Please tune into local news channels for updated weather information.

####

For Immediate Release (Approximately 0-72 Hours Following Event)

The County is beginning its recovery process in the wake of [...INSERT EVENT...]. County residents are asked to place any disaster-generated debris on the public right-of-way. The public right-of-way is the area of residential property that extends from the street to the sidewalk, ditch, utility pole or easement. Keep vegetative debris (woody burnable debris such as limbs and shrubbery) separated from construction and demolition debris, as they will be collected separately. Bagged debris should not be placed on the public right-of-way, only loose debris will be collected. Any household hazardous waste, roof shingles or tires resulting from [...INSERT EVENT...], may be eligible for removal and should be separated at the curb. Do not place near water meter vault, fire hydrant or any other above-ground utility. Only debris placed on the public right-of-way will be eligible for collection until further notice.

If all debris is not picked up during the initial pass, please continue to push remaining debris to the right-of-way for collection on subsequent passes. Household garbage collection will resume to its normal schedule on [...INSERT DATE AND TIME...]. Please check the County Website



[...INSERT WEBSITE ADDRESS...] for additional information and updates on the debris removal process. For more information, please call the city's debris hotline at [...INSERT NUMBER...].

####

For Immediate Release (72 hours prior to final pass of debris removal)

Final preparations are being made for the third and potentially final pass for debris removal in the wake of [...INSERT EVENT...]. County residents should have all disaster-generated debris in front of their homes on the public right-of-way (the area of residential property that extends from the street to the side walk, ditch, utility pole or easement) no later than [...INSERT DATE...] to be eligible for pick-up.

The County will not be able to guarantee that debris placed on the public right-of-way after the specified deadline will be removed. Residents should continue to separate vegetative debris (woody burnable debris such as limbs and shrubbery) and construction and demolition debris. Do not place debris near water meter vaults, fire hydrants or any other above-ground utility. Hazardous household chemicals such as paint cans and batteries may be deposited at the [...INSERT LOCATION...].

You can follow the debris removal efforts in your neighborhood and the rest of the city by going to the County Website [...INSERT WEBSITE ADDRESS...], or by calling [...INSERT NUMBER...].

####

Adapted from: Disaster Resistant Communities Group



Appendix S Sample Right-of-Entry Agreement

Please use ballpoint or rollerball pens and print clearly.

<u>For FEMA/State/local/Tribal Use Only:</u>			
ROE No.:	_____	Age of Structure:	_____
GPS Location –	_____	Lat:	_____
Long:	_____		_____
Remarks:	_____		
Owner Name:	_____		
Insurance Company; Policy No. and Claim No.:	_____		
Owner's FEMA Individual Assistance Registration No.:	_____		
Street Address:	_____		
City/Town:	_____		
County:	_____		
Phone – Primary:	_____	Alternate:	_____

The undersigned, ("Owner"), hereby unconditionally authorizes the City/Town/County in which the above property is located (City/Town/County), the State in which the above property is located (State), tribal governments, the United States of America including the Federal Emergency Management Agency (FEMA), and participating Voluntary Organizations Active in Disaster (VOAD) and their respective assigns, employees, agents, and contractors (collectively, with FEMA, the "Assistance Providers") to have the right of access and to enter in and onto the property described above for the purpose of performing inspections and/or emergency protective measures resulting from _____ at no expense to Owner for purposes of participating in the Sheltering and Temporary Essential Power (STEP) Assistance Program. It is fully understood that this Right-of-Entry Permit (ROE) does not create any obligation on the part of the Assistance Providers to perform inspections or undertake emergency protective measures to the Property. Owner understands that no emergency protective measures will be performed until this ROE is completed in full.

1. Time Period: The ROE shall expire 90 days after this form is signed, unless it is cancelled sooner than that according to the terms herein.



2. Inspection/Emergency Protective Measures Authorized: The ROE authorizes inspection, and emergency protective measures to the Property. Owner understands that the Government, its employees, agents, contractors and/or representatives shall, in their sole discretion, determine the extent of the required emergency protective measures. If Owner disagrees with the nature or extent of proposed actions, Owner may refuse any additional work and cancel this ROE at any time.

Owner: _____	Property _____
<i>Page 2</i>	Address: _____

3. Disclosures: By signing this ROE, Owner acknowledges that none, some, or all of the following work may be performed pursuant to this ROE and FEMA policy. Owner further acknowledges that work may involve the use of raw, unfinished materials to provide only emergency protective measures.

- 1) Repairs to storm-damaged electrical meters (consisting of the weather head, service cable, meter socket, and meter box) necessary for a utility to re-energize the residence;
- 2) Measures necessary to provide essential electrical supply, heat, and hot water;
- 3) Disconnecting damaged portions of the residential electrical system not essential to restoring electrical supply to the meter and into the residential unit;
- 4) Securing broken windows, covering damaged exterior walls and roofs, and patching or otherwise securing damaged exterior doors; and/or
- 5) Inspections necessary to complete the aforementioned work.

4. Local, State, Federal, and Tribal Governments and VOADs Held Harmless: The Owner acknowledges that the Government's decisions on whether, when, where, and how to provide disaster relief to Owner's property are discretionary functions. Owner recognizes that 42 U.S.C. § 5148 states: "The Federal Government shall not be liable for any claim based upon the exercise or performance of or the failure to exercise or perform a discretionary function or duty on the part of a Federal agency or an employee of the Federal Government in carrying out the provisions of this chapter." Additionally, the undersigned will indemnify and hold harmless the Assistance Providers for any and all liability, loss, damage, or destruction of any type whatsoever to the above described property or to personal property and fixtures situated thereon, or for bodily injury or death to persons on the property, and hereby releases, discharges and waives any and all liability, claims, demands, damages, injuries, losses, penalties, fines, costs, causes of action, judgments, expenses, as well as any and all actions, either legal or equitable, which the undersigned has, or that might arise, of any nature whatsoever and by whomever made, or may have, by reason of or incident to any action of aforesaid Assistance Providers taken to accomplish the aforementioned purpose.



5. Miscellaneous:

- a. Owner represents and warrants that Owner has full power and authority to execute and fully perform Owner's obligations under this ROE. If Owner is an entity, Owner also represents and warrants that Owner has such power and authority pursuant to its governing instruments, without the need for any further action, and that the person(s) executing this ROE on behalf of Owner are the duly designated agents of Owner and are authorized to do so. Owner expressly represents and warrants that fee title to the Premises is vested solely in Owner.



WASHOE COUNTY REGIONAL DEBRIS MANAGEMENT PLAN

Appendix S: Sample Right-of-Entry Agreement

Owner: _____	Property
<i>Page 3</i>	Address: _____

- b. This ROE includes the right of ingress and egress on other lands of the Owner not described above, provided such ingress and egress is necessary and not otherwise conveniently available to the Assistance Providers. All tools, equipment, and other property taken upon or placed upon the property by the Assistance Providers shall remain the property of the Assistance Providers and may be removed by the Assistance Providers at any time within a reasonable period after the expiration of this ROE, if necessary.
- c. Owner understands that any individual who fraudulently or willfully misstates any fact in connection with this ROE shall be subject to a fine as provided under 18 U.S.C. § 1001 or imprisoned for not more than five years or both.

Privacy Act Statement:

- a. Legal Authority: 10 U.S.C. § 3013; The Robert T. Stafford Disaster Relief and Emergency Assistance Act as amended, 42 U.S.C. §§ 5121-5207; 4 U.S.C. §§ 2904 and 2906; 4 C.F.R. § 206.2(a)(27).
- b. Information Sharing: Information is collected to make it possible for the Government, its employees, agents, contractors and/or representatives to enter your property, inspect for damage, and/or undertake emergency protective measures. Information submitted will be shared with other government agencies, Federal and nonfederal, their contractors, subcontractors and employees, as well as with voluntary agencies performing inspections and/or emergency protective, for official use only in accordance with the purposes stated in this ROE.
- c. Whether Disclosure is Mandatory or Voluntary: Disclosure is voluntary; however, failure to disclose the information will make it impossible for us to inspect your property or undertake emergency protective measures which may delay or prevent the individual from provision of disaster services and/or assistance.

Signature(s) and Witness

For the considerations and purposes set forth herein, I/we hereby set my/our hand(s) and seal(s) this _____ day of _____, 20____.

_____	_____	_____	_____
Owner Signature	Date	Co-Owner Signature (if applicable)	Date
_____	_____	_____	_____
Phone Number		Phone Number	

Owner's FEMA Registration Number (if applicable) WITNESS			



Appendix T Temporary Debris Storage and Reduction Site Requirements

Adapted from Tab 6 of the Washington County Debris Management Annex

Potential Temporary Debris Storage and Reduction (TDSR) sites should be pre-identified and evaluated by the Regional Partners, and, as practicable, agreements should be put in place to ensure that the sites can be used in the event of a disaster. Technical assistance for identifying potential TDSR sites will be provided by supporting agencies and the Nevada Division of Environmental Protection (NDEP).

The following considerations should be taken into account when selecting a TDSR site:

- Close proximity to debris locations to minimize costs associated with materials hauling.
- Relatively flat and minimally covered by vegetation to facilitate hauling and sorting activities—hardstand sites are preferred to unpaved areas.
- Good ingress that supports heavy truck traffic with separate ingress to and egress from the site.
- Free from obstructions such as power lines or pipelines.
- Does not impede the flow of traffic along major transportation corridors.
- Already includes a vehicle/large vehicle scale.
- Facilitates material segregation, recycling, and reduction of debris.
- Facilitates heavy equipment storage.
- County or publically owned land preferred to privately owned land.
- Does not create a public nuisance by disrupting business operations or by causing dangerous conditions in residential neighborhoods or schools (should not be in proximity to residential areas, schools, churches, hospitals, or other sensitive areas).
- Should not be predominantly located in low-income or minority areas.
- Able to be restored to original conditions.
- Compliant with the National Environmental Policy Act, which specify that a sight must:
 - Not lie within the floodplain or flood-prone areas.
 - Not cause any water quality impacts.
 - Not be located on wetlands or critical animal or plant habitats.
 - Not be located on sole source aquifers or freshwater well fields.



- Not be located on a Superfund site.
- Be compliant with local and state environmental and historic preservation requirements.

Size Requirements

Current United States Army Corps of Engineers (USACE) guidance for TDSR sites estimates debris stack heights of 10 feet, with 60 percent usage of TDSR site land area designated for roads, safety buffers, burn pits, household hazardous waste (HHW) areas, etc.

The total volume of debris per acre is calculated below (assuming a debris pile height of 10 feet):

$$\frac{43,560 \left[\frac{ft^2}{ac} \right] \times 10 [ft]}{27 \left[\frac{ft^3}{yd^3} \right]} = 16,133 \left[\frac{yd^3}{ac} \right]$$

1 [ac] = 43,560 [ft²] 1 [y³] = 27 [ft³]
 acre = [ac] square feet = [ft²] cubic feet = [ft³] cubic yard = [yd³]

The USACE suggests that typical TDSR site operations have 40 percent of the area allocated for debris storage and 60 percent designated for roads, buffers, burn pits, HHW disposal areas, etc. To calculate the total acreage needed, the debris acreage requirements above should be used:

Total TDSR Site Acreage Calculations

Debris Storage Requirements	Total TDSR Site Acreage Needed
Countywide	[ac] ÷ 0.4 = [ac]
Unincorporated areas	[ac] ÷ 0.4 = [ac]
Incorporated cities	[ac] ÷ 0.4 = [ac]

The number of sites varies with size, distance from source, speed of reduction (mixed debris is slower than clean woody debris), and removal urgency. If existing landfill space is not readily available to start reduction site volumes immediately, additional sites will be required.

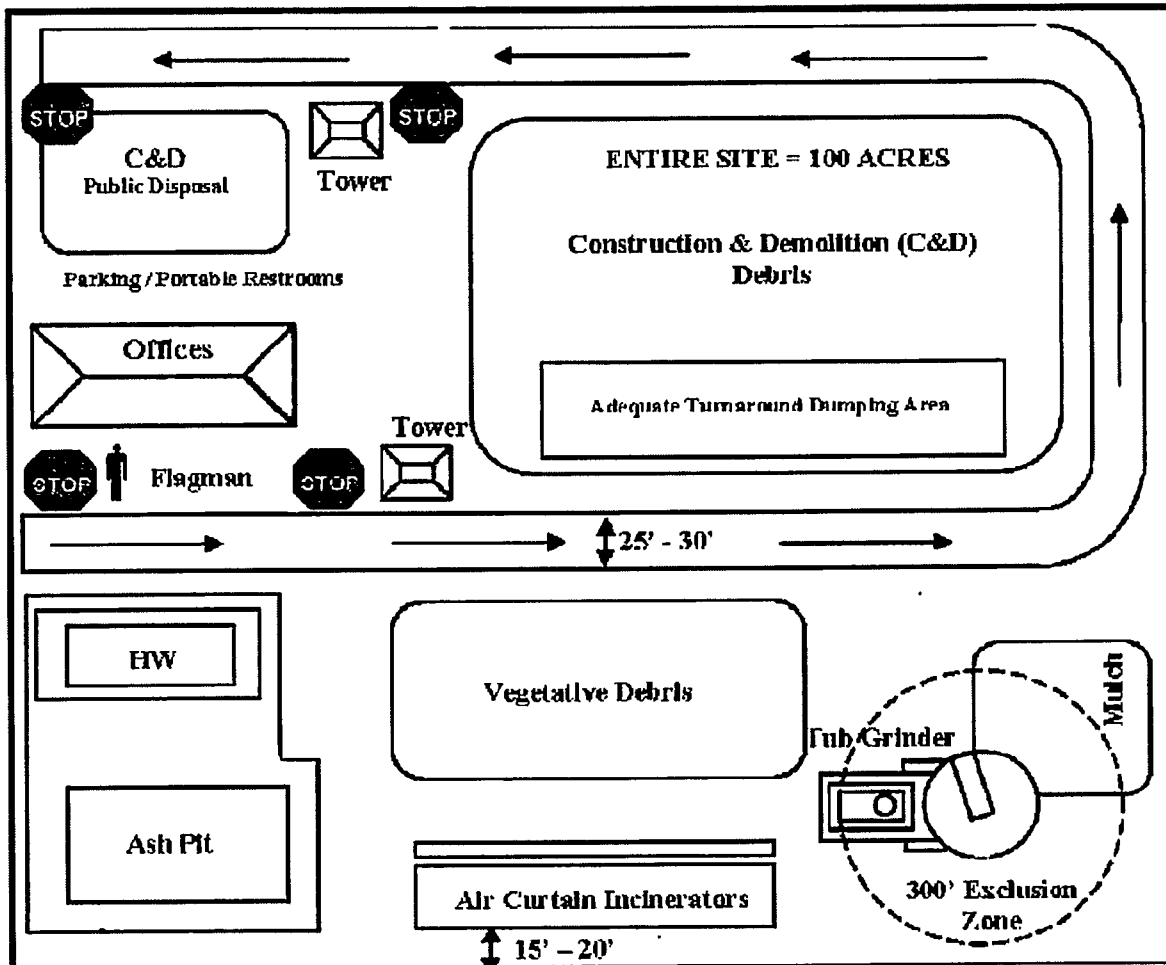
Sample Debris Site Layout

The following is an example of a TDSR site layout best practice. How a site is laid out will depend partially on the size, shape, and general terrain of the acreage chosen; however, all elements of the following site and general flow should be considered.



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Appendix T: Temporary Debris Storage and Reduction Site Requirements



Source: <http://www.fema.gov/pdf/government/grant/pa/demagde.pdf>

Site Preparation

Before activities begin, a baseline study is conducted documenting original condition of the site. The baseline study must include:

- Photos (on-site and aerial, if possible) and video.
- Drawing of the site, including notable, environmentally sensitive, or historical features (fences, structures, culverts, landscaping features, fences, lakes/streams/creeks, water wells, historical structures, archeological features).
- Anticipated locations of site features (debris pile, waste holding areas, fuel storage area, on-site management/office, roads, watch/disposal site monitor towers, and equipment [scale, incinerators, grinding/chipping]).
- Environmental monitoring, including soil samples in random locations (to be taken during operations randomly as well) and water samples (if any water sources exist on site).



Additional considerations for site preparation include:

- Site security (to prevent theft of scrap metal and other materials and prevent illegal dumping).
- On-site record keeping (type and amount of waste accepted, rejected, processed, etc.).
- Ground liners for hazardous waste holding areas or fuel storage area (to prevent ground contamination in the event of a spill).
- Site safety personnel and adequate availability to personal protective equipment.
- Fencing to prevent access to equipment or hazardous materials.
- Mitigation measures for:
 - Dust abatement (water trucks, watering of debris pile).
 - Noise (perimeter berms).
 - Traffic (establish separate ingress and egress).
 - Vectors (prevent bug and rodent infestations).

Site Initialization and Management

Permitting

The NDEP Solid Waste Program has a draft plan for debris management: the Disaster Debris Management Plan. This plan describes the actions and roles that the NDEP solid waste staff will perform during a disaster to assist with swift and appropriate removal and disposal of disaster-related debris. The NDEP assigns top priority to assisting with and approving the use of temporary site(s) to manage disaster debris and other wastes.

The establishment of a TDSR site will likely require the issuance of a solid waste letter of authorization (SWLA) from the NDEP. The SWLA is a one-time letter permit that is good for six months and can be renewed or extended one time for a total of 12 months—this supplants normal disposal site permits/permitting processes. If the site only contains non-putrescent debris (clean wood waste, recyclables), and if materials are stored for no more than 24 hours, it may not require an SWLA. For the purposes of this plan, it is assumed that all TDSR sites will require an SWLA from the NDEP.

Generally, an application for an SWLA should include a narrative discussion of the following:

- The need and justification for the proposed project.
- The quantity, types, and nature of material to be disposed of.
- The location and size of the proposed disposal area.
- Temporary disposal site schedule, including projected start and end dates.



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- Proposed methods to be used for handling, processing, and disposing of debris to ensure safe and proper disposal, including:
 - Specific information that describes the project and how it will be conducted.
 - An operations plan to describe activities that will be carried out during the period that the temporary site will be open, used and closed after debris is removed from the site.
 - Information on how the site will be operated (who is operating it, hours of operation, fees that may be charged, security, signage, and emergency/spill response).
 - Actions that will be taken to prevent contaminant release to surface and groundwater, to prevent off-site dust and litter, and to ensure waste is segregated and managed appropriately to contain hazards or toxicity.
 - Any recycling efforts to be taken depending on the type of debris, if appropriate.
- Materials that will not be accepted at the site.
- Steps taken to minimize contamination of runoff and storm water and other environmental concerns.
- Attachments of the following:
 - Map or drawing of the site showing:
 - ◆ Location and configuration of the property, disposal area, and protections constructed to prevent water and other types of pollution.
 - ◆ All roads and road conditions leading to and from the site.
 - ◆ The distance to surface water, including wetlands and proximity to drains or streams.
 - ◆ Approximate elevations.
 - ◆ Paved/non-paved areas.
 - ◆ The locations of equipment and separations of debris.
 - ◆ Structures, roads, material stockpiles, sorting areas, etc.
 - Photos of the site, if available.
 - Written statement of approval from the property owner or person with long-term control of the property, if other than the applicant. This statement must address who will be responsible for the closure of the site and, if a spill occurs, who will be responsible for testing/sampling and removing contaminated soil—the land owner, site operator, or local government.



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- Recommendation from the DMT/NDEP that the proposal is compatible with the local solid waste management plan. NDEP staff may consider waiving this requirement for a temporary site.
- Land Use Compatibility Statement from the local government unless the governor waives this permit requirement through an executive order.
- Completed Application For a New Solid Waste Disposal Site Permit form.
- Application processing fee of \$500 unless the governor waives this permit requirement through an executive order.
- Further information as needed.

NDEP solid waste staff may provide technical assistance to the County in the development and operation of a TDSR site to assist in disaster debris processing and management. NDEP solid waste staff can continue providing guidance on NDEP rules and regulations to TDSR site operators so the site remains in compliance with NDEP requirements and does not create environmental concerns. Technical assistance may include guidance on site operations, recycling, and appropriate site closure.

Site Initialization

The responsibility for identifying the need for a TDSR site resides with the Regional Emergency Operations Center, or if initiated, the Debris Management Team. Once a site has been selected, either from a pre-identified site, or from the site selection criteria, a baseline study of the site is required (see site preparation section above). The site must be returned to pre-operational condition, and the baseline study documents site conditions, which informs the site closeout process.

Site ownership dictates how operations commence at a TDSR site. The optimal scenario involves use of county-owned land, which minimizes liability and potential site remediation issues. Operations may commence upon completion of the baseline study for county-owned property. For privately owned property, a leasing agreement must be created and signed by both the county and the land owner. The leasing agreement should outline the costs of use, length of time of use, anticipated site operations, and any special considerations.

Site Layout

The efficiency and overall success of the TDSR site operations are determined by how the site is designed. Debris should be constantly flowing to incinerators and grinders, or recycled, with the residue and mixed construction and demolition materials going to a landfill. Significant accumulation of debris should not be allowed to occur due to environmental and safety concerns, such as the risk of fire.

The size of the site is dependent on the quantity of debris that is stored and processed. The site should be large enough to safely accommodate processing of various debris materials, storing heavy equipment, and maneuvering trucks and large processing equipment. The USACE has found that approximately 60 percent of the area will be used for roads, buffers, burn pits, holding areas, etc.



Common operational uses are:

- Reduction.
- Recycling.
- Tipping areas (unloading).
- Loading areas for processed debris to go to its final disposition.
- Drop-off centers for the general public (this may include vegetative, recycling, or construction and demolition debris).
- Holding areas.
- Monitoring tower locations at both the ingress and egress points.
- Equipment, fuel, and water storage.
- Public debris collection areas.

Separation of the areas listed above should be clearly delineated and defined. Maximum separation helps to reduce conflicts in use. As operations proceed, these areas may change with the various types of debris. The reduction, recycling, tipping, and loading areas need ample room for large equipment operations. The design should consider the possibility of multiple pieces of equipment engaging in the same activity at one time. Depending on the scale of operations, each debris stream may have its own tipping area and should be designed accordingly.

Household hazardous waste storage should be located in a safe location close to the scale and offices, and access should be restricted. The design staff will need to construct an impermeable lining and containment barrier to contain spills and prevent surface water runoff from leaving the area.

Equipment and fuel should have a designated storage area and signs posted appropriately. The fuel storage areas need to be designed to contain spills. For dust and fire suppression, water should be readily available throughout the site at all times and must be identified appropriately.

Monitoring towers should be located at ingress and egress points. Monitoring towers should be constructed of durable structural materials. The structures should be designed to withstand active and static loads. A stepladder is not an acceptable monitoring tower.

General public drop-off areas for recycling, reduction, and construction and demolition debris may be included within the TDSR site. These public use areas should be carefully designed for passenger vehicle traffic and public safety. Separate ingress and egress points need to be established for public use; the public will not be allowed to operate in the same location as commercial activities. All weight or volume of materials received from public drop-off should be accounted for to ensure accurate and complete records for all debris received to the site by source. It may be preferable to develop a separate TDSR site dedicated solely to public use.

Operational boundaries should be established to both delineate separate processing areas and eliminate access to sensitive areas, such as hazardous waste/HHW holding areas. In establishing the operational boundaries, the TDSR site design staff will consider using earthen



berms, temporary barriers, or other physical restrictions. This aids traffic circulation and keeps the backlog of debris to a minimum.

Traffic circulation should be well defined throughout the entire TDSR site. Traffic signs and barricades should aid in directing traffic. The designed traffic pattern will, if feasible, allow trucks to enter and exit through different access points with each point monitored.

Debris removal contractors are typically paid by the volume or weight of a load. The load is evaluated when entering the site, based on a percentage of the full capacity of the truck or weight. Disposal monitors at ingress and egress points ensure that every truck releases the entire load prior to leaving the site. This prevents debris left in a truck from a previous load from being counted again in a subsequent load.

The empty trucks that enter the site to remove the processed (reduced, sorted) debris should enter and exit through an access point other than that of all other traffic. This reduces potential confusion for the site manager and debris monitor regarding debris being deposited or removed from the site.

If public access is provided for collection areas, adequate signage, site access/Americans with Disabilities Act compliance, and parking areas should be considered, and public safety addressed.

Site Management

TDSR site management responsibilities reside with the County. County or contracted personnel are both suitable options for conducting management responsibilities. County staff will likely have exemplary local knowledge key to conducting managerial functions, while contracted staff may have more extensive debris management experience. In either situation, a site manager, debris monitors, and safety personnel are needed to ensure safe and efficient operations. Debris monitors report to the field supervisor. All other site staff report to the site manager.

Site Closeout

Each TDSR site must be cleared and restored to pre-disaster conditions and uses, with the exception of NDEP-authorized vegetative debris, and sites where the NDEP agrees to exempt from its solid waste permitting requirements the land-application of ash. Closure requirements are site specific and depend on site characteristics and types of waste processed and handled on site. Site closure requirements should be written into the SWLA. The site owner/operator must notify the NDEP of the closure. The site is expected to be completely clean of any and all wastes that were once present, and these wastes must have been properly disposed of.

The final environmental site evaluation is an extension of the environmental monitoring program. Testing similar to that completed in the baseline study will be conducted to confirm that the site has been returned to its pre-activity state. Test samples should be taken at the same locations as those of the initial assessment and monitoring program. However, if warranted, additional test samples may need to be taken at other locations on or adjacent to the site. Based on the results of the testing, additional remediation may be required before the owner takes final acceptance of the site. The lease agreement should have provisions to release the applicant from future damages when the site is returned in its original condition or final acceptance is received from the owner.

The NDEP will need information demonstrating that the temporary disposal site was closed properly, depending on the nature of the site and material handled. Proof of proper closure may



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Appendix T: Temporary Debris Storage and Reduction Site Requirements

result from a NDEP solid waste site inspection or as the result of proper documentation submitted to the NDEP. These documents may include photos of the closed site, signage at the site indicating where people can take their debris, and a written statement from both the site owner and operator stating the site is closed and has been cleaned up.

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Appendix U: Temporary Debris Storage and Reduction Site Locations

Appendix U Temporary Debris Storage and Reduction Site Locations

Regional Partner	Site Name	Useable Acres	Total Acres	Latitude/Longitude	Address	Ownership	Special Considerations (e.g., environmental issues, proximity to sensitive facilities)	Level of Site Preparation Needed (e.g., minor, extensive)	Possible Uses (e.g., TDSRs, drop boxes)
City of Sparks	Golden Eagle Regional Park	1 Acre	448.16 Acres	39°36'12.1"N 119°40'06.5"W	6100 Touchdown Drive, Sparks, NV 89436	City of Sparks	Public Park	Minor	TDSR store, reduce, segregate, and/or process debris
City of Sparks	Shadow Mountain Park	.5 Acres	51.35 Acres	39°33'38.2"N 119°43'24.6"W	3300 Sparks Blvd, Sparks, NV 89431	City of Sparks	Public Park Close Proximity to Residential Housing	Minor	TDSR store, reduce, segregate, and/or process debris
City of Sparks	Horseman's Park	.5 Acres	40.37 Acres	39°32'08.7"N 119°41'52.6"W	2200 Loop Road, Sparks, NV 89434	City of Sparks	Limited Ingress/Egress for Vehicles	Minor	TDSR store, reduce, segregate, and/or process debris
City of Sparks	RTAA Vacant Lots	.2 Acres	.321 Acres	39°31'55.0"N 119°46'15.4"W	1977 Frazer Ave, Sparks, NV 89431	City of Sparks	Close Proximity to Residential Housing	Minor	TDSR store, reduce, segregate, and/or process debris



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Appendix U: Temporary Debris Storage and Reduction Site Locations

Regional Partner	Site Name	Useable Acres	Total Acres	Latitude/ Longitude	Address	Ownership	Special Considerations (e.g., environmental issues, proximity to sensitive facilities)	Level of Site Preparation Needed (e.g., minor, extensive)	Possible Uses (e.g., TDSRs, drop boxes)
Incline Village	Washoe County Waste Management Station	Approx 1 Acres	Approx 3 Acres	39°14'23.1"N 119°55'42.4"W	Humboldt-Toiyabe National Forest, 1076 Tahoe Blvd, Incline Village, NV 89451	Incline Village	Close to Residential Regions and Main Roads	None	TDSR store, reduce, segregate, and/or process debris
Incline Village	IVGID overflow parking facility	Approx 4 acres	Approx 4 acres in size	39°14'29.18"N 119°56'47.78"W	956 Lakeshore Blvd - IV, NV	IVGID	Close to Residential Regions and Main Roads	Minor	TDSR store, reduce, segregate, and/or process debris
City of Reno	Arrowcreek Wastewater Treatment Plant	Approx 10 Acres	Approx 20 Acres	39.405637° N 119.771875 W	Arrowcreek Pkwy	Washoe County	Distance to affected sites	None	TDSR store, reduce, segregate, and/or process debris
City of Reno	North of Stead Airport	Approx 15 Acres	Approx 30 Acres	39.710571° N 119.884897° W	1215 American Flat Rd	Washoe County	Distance to affected sites	None	TDSR store, reduce, segregate, and/or process debris



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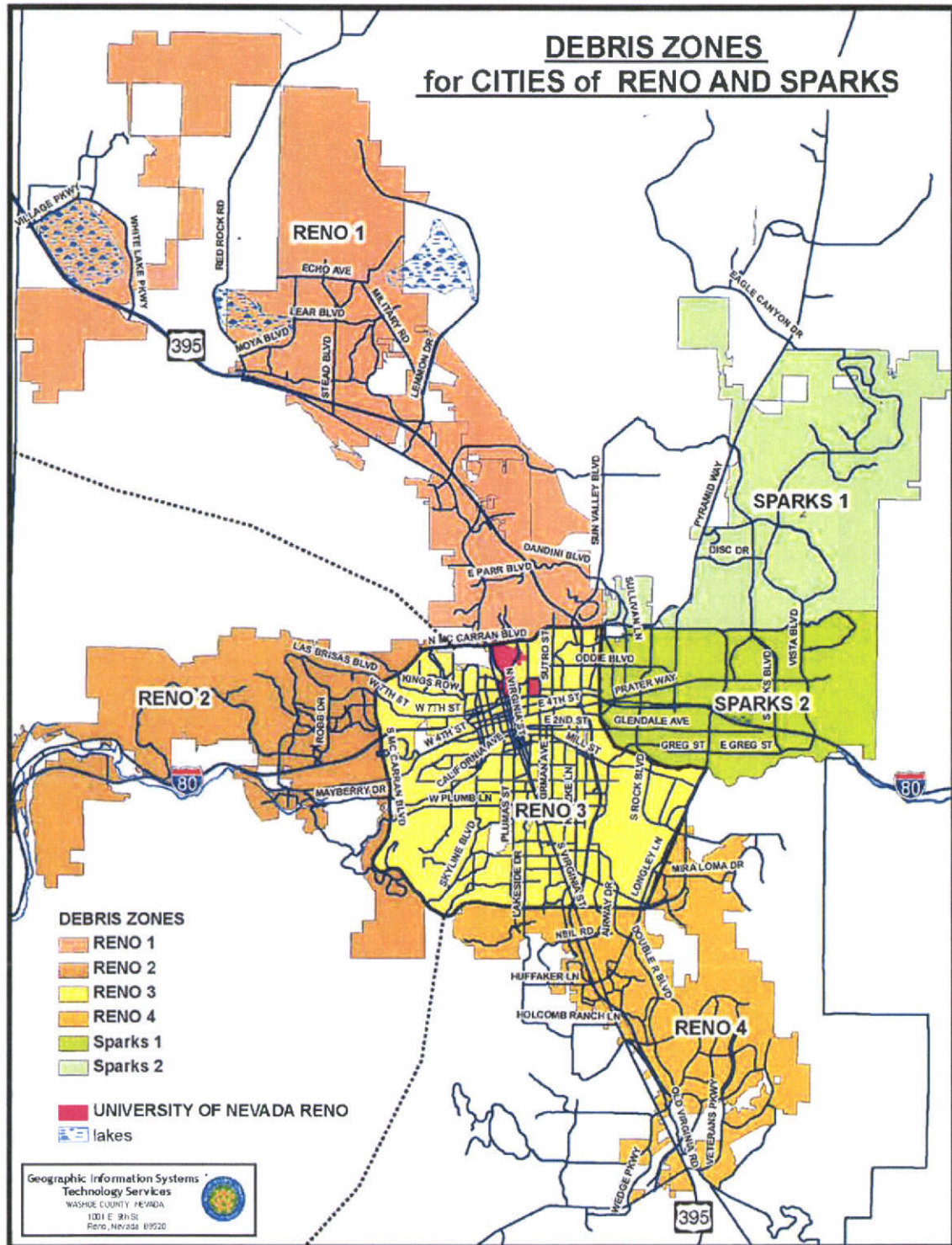
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Regional Partner	Site Name	Useable Acres	Total Acres	Latitude/ Longitude	Address	Ownership	Special Considerations (e.g., environmental issues, proximity to sensitive facilities)	Level of Site Preparation Needed (e.g., minor, extensive)	Possible Uses (e.g., TDSRs, drop boxes)
Washoe County	Swan Lake Nature Study Area	Approx 10 Acres	Approx 20 Acres	39.652776° N 119.853634° W	Lemmon Dr	Washoe County	Environmental Issues, Weather dependant	None	TDSR store, reduce, segregate, and/or process debris
Washoe County	Cold Springs Wastewater Treatment Plant	Approx 15 Acres	Approx 20 Acres	39.698386° N 119.976193° W	1805 Mud Springs Dr	Washoe County	Distance to affected sites	None	TDSR store, reduce, segregate, and/or process debris

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Appendix V Zone Maps





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Appendix V: Zone Maps

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