Damage Assessment Operations Manual

A Guide to Assessing Damage and Impact

FEMA's mission is to support our citizens and first responders to ensure that as a nation we work together to build, sustain, and improve our capability to prepare for, protect against, respond to, recover from, and mitigate all hazards.

The Department of Homeland Security Federal Emergency Management Agency (FEMA) has developed four levels of operational guidance for use by emergency management teams and other personnel involved in conducting or supporting disaster operations. This manual corresponds with Level 2, defined and formatted in bold italics.

Level 1 - Overview: A brief concept summary of a disaster-related function, team, or capability

Level 2 - Standard Operating Procedures (SOP) or Operations Manual: A complete reference manual, detailing the procedures for performing a single function (Standard Operating Procedure), or a number of interdependent functions (Ops Manual)

Level 3 - Field Operations Guide (FOG): A durable pocket or desk guide, containing essential fundamental information needed to perform specific assignments or functions

Level 4 - Job Aid: A checklist or other aid for job performance or job training

This manual is consistent with and supports the current plans and procedures of the National Response Framework (NRF) for implementation of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended, 42 U.S.C. § 5121 *et seq*. and its implementing regulations in Title 44, Chapter I of the Code of Federal Regulations (CFR) Emergency Management and Assistance.

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Introduction

The *FEMA Damage Assessment Operations Manual* is intended to expedite decision-making and the delivery of assistance by defining national standards for assessing damage and clearly outlining the information considered when evaluating requests for a Major Disaster Declaration. To support this overall objective, this manual aims to achieve three major goals:

1. **Promote accuracy** by clearly defining the information and documentation that should be collected to assess damage and support requests for Stafford Act assistance;
2. **Promote consistency** by standardizing the criteria used to assess damage to residential homes and offering clear guidance on assessing damage to infrastructure;
3. **Promote efficiency** by empowering emergency management at all levels with the structure and information needed to streamline damage assessment efforts.

Following rare incidents of unusual severity, rapid assessment methods not outlined in this document may be used to determine the need for Stafford Act assistance. When this is the case, assessment methods described in this document will still be used after the declaration to determine unmet needs and organize operational resources.

Background

Previous damage assessment manuals, standard operating procedures, tools, and job aids developed by FEMA have focused on the role of agency personnel in validating damage and impact information. While these documents have served as comprehensive training and reference materials for Federal members of Joint Preliminary Damage Assessments (PDA) teams, they did not address the important role played by local, State, and Tribal Governments in assessing damage and impact.

This manual has been written with an understanding that the goals of accuracy, consistency and efficiency cannot be accomplished unless the entire emergency management team is engaged and empowered. By outlining the specific damage and impact information required to support a request for Federal assistance and explaining how that information is evaluated, this manual will empower emergency managers at all levels. Additionally, this manual is intended to serve as a foundation for developing consistent job-aids and training. This multi-faceted team-based approach is intended to support the rapid development of information needed by State and Tribal leadership to request a Major Disaster Declaration from the President.

Intended Audience

This manual is intended for emergency management practitioners as well as private sector and non-governmental stakeholders who have a role in assessing damage and impacts and/or requesting disaster assistance.

Authorities

The damage assessments, Presidential disaster declaration requests, and evaluation factors for Major Disaster and Emergency Declarations are based on a hierarchy of statute, regulations, and policies. Specific authorities related to the damage assessment process include:

- Robert T. Stafford Disaster Relief and Emergency Assistance Act. Public Law 93-288, as amended, 42 U.S.C. §§ 5121 et seq.
- Public Assistance Program and Policy Guide, FP 104-009-2 (Jan. 2016)
- Title 44 of the Code of Federal Regulations (CFR), Emergency Management and Assistance
- Homeland Security Act (Public Law 107-296, as amended, 6 U.S.C. §§ 101 et seq.)
- Homeland Security Presidential Directive 5 (HSPD-5), Directive on Management of Domestic Incidents, February 28, 2003
- National Response Framework, May 2013
- National Incident Management System, December 2008
- FEMA Publication 1, November 2010
- Incident Management and Support Keystone, January 2011
- Presidential Policy Directive 8 (PPD-8), National Preparedness, March 30, 2011
- National Disaster Recovery Framework, September 2011
- National Mitigation Framework, May 2013
- Use of the United States National Grid (USNG), FEMA Directive 092-5

US National Grid

The US National Grid (USNG) is a nationally recognized grid reference system that quickly enables users to identify and communicate geographic areas or specific locations of interest. USNG creates a nationally consistent “language of location” by providing a system that is seamless across jurisdictional boundaries. It may be the only unambiguous way to describe locations when the end-user is operating either in an area away from the established road network, or in an area impacted by a natural disaster where road signs have been destroyed.

USNG is largely intended for positional reporting and ground operations, but can also be used for aggregating data to display its distribution over a given geographic area. Since it is a uniform and continuous grid, it is well-suited for summarizing point data over a large area for display on maps or mapping systems.

FEMA currently uses USNG in many of its programs. It is used to coordinate and track ground teams for Urban Search & Rescue (USR), PDA, and Disaster Survivor Assistance Teams. It is also used in mapping products to display concentrations of observed damage and applicants for IA.

Recovery Program Overview

A Stafford Act declaration triggers FEMA's broad statutory authorities to provide assistance. Depending on the programs authorized, this may include assistance to individuals and households, assistance to government and eligible private nonprofits, and assistance for mitigation activities to protect against future hazards.

Familiarity with the FEMA Recovery Programs can be helpful in understanding the kind of information that is used to evaluate requests for a Major Disaster Declaration.

Familiarity with the FEMA Recovery Programs Individual Assistance (IA) and Public Assistance (PA) can be helpful in understanding the reasoning behind the information that is used to evaluate requests for Federal disaster assistance. The programmatic overview in this section is intended to help develop this understanding. In the next two sections, we will discuss FEMA's PA and IA programs in more detail.

FEMA PA Program

The FEMA PA program provides assistance to local, State and Tribal Governments, and certain types of private nonprofit (PNP) organizations to remove debris, provide emergency protective measures, and restore equipment, buildings, and other infrastructure damaged by the disaster.

FEMA IA Programs

FEMA IA programs provide assistance to support the recovery of disaster survivors who have uninsured or underinsured necessary expenses and serious needs. This may include assistance for temporary housing and housing repairs, critical disaster related expenses, and the replacement of essential personal property. Through its IA programs, FEMA may also provide funding to the State or Tribal Government to support programs that address crisis counseling (CCP), disaster case management (DCM), disaster legal services (DLS), and disaster unemployment assistance (DUA).

Concept of Operations

Disasters and their effects vary by event and by community. While it is not possible to create a one-size-fits-all approach to damage assessment, this Concept of Operations (CONOPS) is intended to promote effective time-phased coordination between emergency management stakeholders at all levels.

It should be noted that while the timelines for individual phases described in this section are not defined, and may at times run concurrently, 44 CFR § 206.36 requires that a request for a Stafford Act declaration must be submitted within thirty days of the incident in order to be considered. The 30-day period may be extended by the Associate Administrator for the Office of Response and Recovery, provided that a written request, to include a justification, for an extension is submitted during this 30-day period.

Pre-Incident Readiness

As with all emergency management planning and readiness activities, being prepared to conduct effective, and efficient damage assessments begins by developing an understanding of risks, requirements, and current capacities. Information gathering and analysis through Geographic Information System (GIS) and other technologies can be used to identify high-risk areas and develop event triggers for planning and operational decision-making.

As a best practice, some jurisdictions develop pre-disaster infrastructure inventories or use planning and zoning maps to expedite analysis following a disaster.

Emergency managers often maximize time and resources available to conduct damage assessments by forming damage assessment teams made up of non-emergency management office staff or personnel who do not have responsibilities immediately following a disaster. Once identified, damage assessment team members should be trained to collect damage information according to standards defined in later sections of this document in order to expedite analysis and decision-making.

Once personnel are selected and processes are established, practitioners at all levels can employ the planning, training, and exercise cycle to build capacity and refine operations.

Local or County Damage Assessment

Not every incident will require detailed information beyond what is available through general monitoring. As an example, minimal damage that commonly results from rainstorms or small earthquakes may not need any further assessment, because supplemental assistance likely will not be necessary. If, however, it is determined that more in-depth information is needed, emergency managers in impacted jurisdictions should coordinate with county, State, or Tribal

emergency management, as appropriate, to discuss the type of assessment that is needed, timelines, and coordinate damage reporting.

Field assessments conducted by local or county damage assessment teams should be focused on capturing damage information discussed in this document. State or Tribal emergency management should work with local emergency managers to ensure the IA assessment criteria and/or that the information and documentation used during PA assessments is understood. Some State or Tribal Governments are able to offer further support to local or county assessment efforts through the deployment of programmatic and/or technical subject matter experts (SME) that can answer questions and improve coordination.

Once local or county assessment teams have completed their assessments, the information collected should be provided to the State or Tribal Government. This information can then be aggregated with similar information provided from other affected jurisdictions, State or Tribal agencies, utility cooperatives, and non-governmental organizations (NGO).

State or Tribal Government Verification

State or Tribal emergency management should, in some manner, verify the information submitted by local or county emergency management is complete and consistent with programmatic assessment criteria prior to requesting a Joint Federal, State or Tribal Government Preliminary Damage Assessment (hereinafter referred to as Joint PDA). This verification process can have a dramatic impact on accuracy and efficiency, and is essential to ensure that impacted jurisdictions are organized and prepared to participate in a Joint PDA.

It is not anticipated that all occurrences will result in a requirement for assistance; therefore the State or Tribal Government will be expected to verify their initial information, in some manner, before requesting a Joint PDA.

Ideally information submitted by local and county emergency managers can be verified remotely; however this phase often requires follow-up and/or in-person site visits. Many States and Tribal Governments use staff assigned to district offices to support verification efforts.

Technical assistance may be requested from FEMA, prior to a request for a Joint PDA, to support State or Tribal Government efforts to evaluate the information submitted by local jurisdictions and analyze the need for a Joint PDA. This technical assistance support may include GIS Analysts, Program Specialists, or other SMEs necessary to advise State or Tribal emergency management and answer programmatic questions.

Once information has been verified and impacted jurisdictions are prepared, State or Tribal emergency managers should coordinate with their leadership for action, and notify the FEMA Regional office for awareness.

Joint Preliminary Damage Assessment

If the incident is of a severity and magnitude that resources needed to recover are expected to exceed local and State or Tribal Government capability, the Director of the State or Tribal emergency management agency may request a Joint PDA from the appropriate FEMA Regional Administrator (RA) to validate damage and evaluate impact. This request should include any counties or Tribal lands to be assessed, and will begin discussion on the general timeline for the Joint PDA.

Once a request for a Joint PDA is made, a summary of the information verified by the State or Tribal emergency management should be provided to the FEMA Regional Recovery Division. FEMA programmatic representatives should coordinate with State or Tribal emergency management to discuss the information submitted, determine team requirements, establish a PDA briefing time and location and develop an overall PDA coordination plan.

Joint FEMA State or Tribal Government Preliminary Damage Assessments are intended to validate information - not to find damage.

Once a Joint PDA start date is agreed upon, State or Tribal emergency management should coordinate with counties or Tribal jurisdictions included in the Joint PDA request to schedule field assessments. This will give local or county emergency managers the time needed to coordinate with impacted jurisdictions so that personnel necessary to answer questions can be made available and efficient routes for field assessments can be planned.

The FEMA Regional office will identify FEMA Joint PDA leadership, deploy staff, and coordinate with Other Federal Agencies (OFAs) (e.g. U.S. Small Business Administration) needed to successfully complete the PDA. State or Tribal emergency management should identify Joint PDA leadership as well as staff that can serve on Joint PDA field teams. In large or catastrophic disasters or when OFAs may be deployed for a follow on NDRF Recovery Coordination assessment, the RA or FCO may request that the regional Federal Disaster Recovery Coordinator (FDRC) be part of the coordination and information sharing process.

Damage assessment field teams should be composed of at least one representative of the Federal Government and one representative of the State or Tribal Government. A local government representative, familiar with the extent and location of damage in his/her community, should also be included, if possible. Other State or Tribal agencies, OFAs and NGOs may also be asked to participate, as needed.

Joint PDA field teams are intended to validate – not find – damage and impact information. State or Tribal emergency management is responsible for coordinating with local or county emergency management to ensure that they are prepared to discuss damage and guide field teams to residences, businesses, and/or damaged infrastructure, to conduct site visits. Generally, Joint PDA teams ask to start with the most heavily damaged homes (IA) and infrastructure (PA), and

work their way down; taking into account geography and travel time. When Joint PDAs are required to validate damage for the PA program, local or county emergency managers will need to schedule time with potential applicants to discuss damage, review supporting documentation, and conduct site visits.

FEMA and State or Tribal Government staff should coordinate regularly during the Joint PDA to discuss findings and reconcile any differences. While disagreements may exist, it is important that the rationale for decision making be transparent. At the close of the Joint PDA, FEMA will provide State or Tribal emergency management with a final summary of its findings.

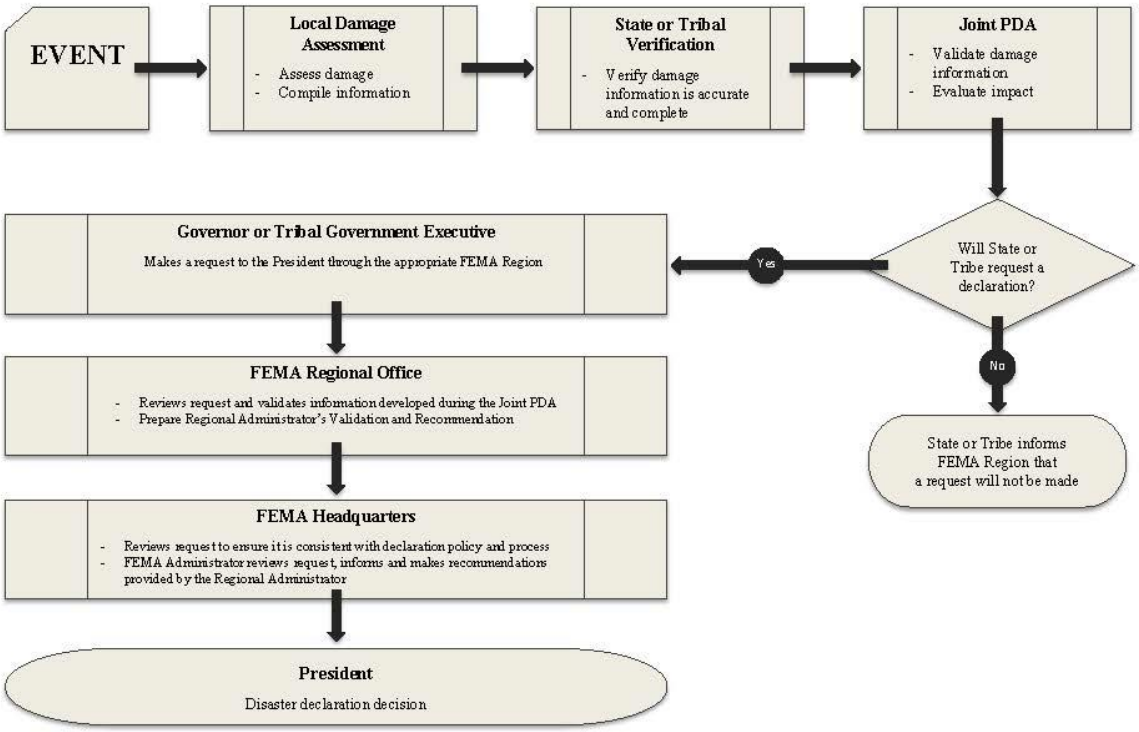
Request for Federal Assistance

Once the Joint PDA has been completed, the State or Tribal emergency managers generally will review the validated information and make a recommendation to the Governor or Chief Executive on the need to request a Stafford Act declaration. Stafford Act declaration requests may be developed for one or both of the FEMA Recovery programs (PA and IA), as well as Hazard Mitigation.

All requests to the President for Stafford Act declarations must be made by the Governor of the affected state[1] or the Chief Executive of a federally recognized Tribal Government. The Governor or Tribal Chief Executive should submit the request to the President through the appropriate FEMA RA to ensure prompt acknowledgement and processing.

If a State or Tribal Government decides that it does not want to request Stafford Act assistance from the President, information developed during the Joint PDA may be used to request assistance from OFA's (e.g. U.S. Small Business Administration), or to determine the need for State or Tribal Government recovery programs.

[1] A State also includes the District of Columbia, Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands. The Marshall Islands and the Federated States of Micronesia are also eligible to request a declaration and receive assistance. Federally recognized Tribal Governments are also eligible.


EVENT
Local Damage Assessment
- Assess damage
- Compile information
State or Tribal Verification
- Verify damage information is accurate and complete
Joint PDA
- Validate damage information
- Evaluate impact
Will State or Tribe request a declaration?
Yes
No
State or Tribe informs FEMA Region that a request will not be made
Governor or Tribal Government Executive
Makes a request to the President through the appropriate FEMA Region
FEMA Regional Office
- Reviews request and validates information developed during the Joint PDA
- Prepare Regional Administrator's Validation and Recommendation
FEMA Headquarters
- Reviews request to ensure it is consistent with declaration policy and process
- FEMA Administrator reviews request, informs and makes recommendations provided by the Regional Administrator
President
Disaster declaration decision

Roles and Responsibilities

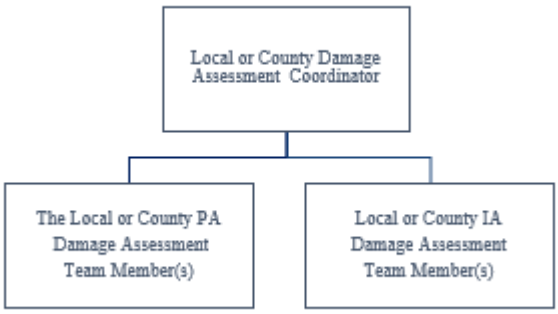
This section provides information on roles, relationships, and responsibilities damage assessment team members have in the damage assessment process. Roles and responsibility descriptions in this section are intended to give local, county, State or Tribal Government, and Federal practitioners the flexibility necessary to tailor the damage assessment process to resources, threats, populations, and stakeholders while maintaining standardization across the nation.

While it is understood that not every jurisdiction will have the current capabilities or personnel necessary to perform all of the tasks outlined in this section, practitioners can use this information to develop a common understanding of damage assessment roles at each level. This uniformity will allow the development of common skills and understanding that underpin mutual aid networks and national uniformity.

Many local jurisdictions have limited emergency management staff. As a best practice some local jurisdictions have trained staff from non-emergency management offices to fill important positions. Examples include: facilities personnel from public schools, local housing inspectors or code enforcers, local community planning and economic development officials, and offices responsible for maintaining publicly owned buildings or infrastructure. A checklist to support staff filling various roles can be found in the Appendix A of this manual.

Note: all of the organizational charts included below represent best practices and not staffing requirements. Position titles used in this document are intended to generically describe roles, and may not reflect official position titles.

Local or County Roles and Responsibilities†



Expedient accurate damage assessments are built on a foundation of information gathered at the local level. *A common mistake made in the damage assessment process is the rushing of local assessments* - an error that can prolong verification and validation phases and slow the delivery assistance.

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† *The example organizational chart above is a scalable best practice. Larger disasters may require additional staff and additional positions. Smaller jurisdictions may have one or two persons serving all the functions.*

The following section has been developed based on some of the best practices already implemented at the local and county level. Jurisdictions may have different position names; however these roles and responsibilities should be taken into account as local or county damage assessment teams are defined.

Local or County Damage Assessment Coordinator

The Local or County Damage Assessment Coordinator is among the most critical positions in the damage assessment process. Generally performed by an emergency manager or designee, the person assigned to this role is responsible for identifying and training local assessment team members, coordinating assessment activity in the jurisdiction, and submitting information to the county or State or Tribal Government as appropriate.

Local or County PA Damage Assessment Team Member

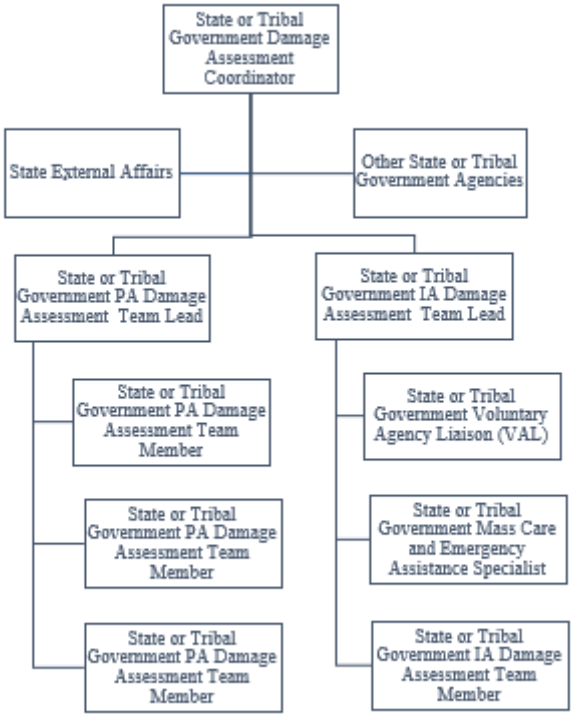
The Local or County PA Damage Assessment Team Members are generally representatives of potential applicants from government offices or Private Nonprofits (PNP) that perform one of the services defined in Appendix C. PA damage assessment team members should be familiar with the type of work being evaluated and be able to collect information and supporting documentation discussed in later sections.

Local or County IA Damage Assessment Team Member

The Local or County IA Damage Assessment Team Members may be representatives of emergency management, government offices, NGOs, Community Emergency Response Team (CERT) programs, or local residents. IA damage assessment team members should be trained in gathering information related to location, ownership, occupancy, and insurance coverage of impacted residences and categorizing damage according to criteria established by FEMA discussed in later sections.

State or Tribal Government Roles and Responsibilities

State or Tribal Governments can lessen the time required to verify damage by working with local emergency managers to assess whether the information submitted is complete and aligned with established FEMA damage assessment standards, and by providing technical expertise to local damage and impact assessment efforts. State or Tribal Government damage assessment personnel also play a pivotal role during the Joint PDA, serving as State or Tribal Government representatives on both Joint PDA leadership and field teams.



State or Tribal Government Damage Assessment Coordinator

The State or Tribal Government Damage Assessment Coordinator reports to the State or Tribal Emergency Management Director. This Coordinator serves as the principal State or Tribal representative overseeing damage assessment, verification, and validation activities. In addition they are responsible for ensuring that local damage assessments are appropriately supported; local, State or Tribal Government personnel are prepared to verify local assessment findings; coordinating with Federal representatives during the Joint PDA; and ensuring appropriate support is provided as requests for Federal assistance are drafted. Some of the responsibilities given to the Coordinator may be delegated to a State or Tribal Government PA or IA Damage Assessment Team Lead.

State or Tribal Government Public Assessment Team

State or Tribal Government PA Damage Assessment Team Lead

The State or Tribal Damage assessment Team Lead reports to the State or Tribal Government Damage Assessment Coordinator. This Team Lead serves as the representative responsible for overseeing damage assessment activity related to the PA program. This includes overseeing technical programmatic support provided during local or county assessment efforts, verifying PA related information submitted by local or county emergency managers, and serving as the

primary State or Tribal programmatic representative during the Joint PDA. During the Joint PDA, the Team Lead serves as the State or Tribal counterpart to the FEMA PA PDA Team Lead.

State or Tribal Government PA Damage Assessment Team Member

The State or Tribal Government PA Damage Assessment Team Member reports to the State or Tribal Government PA Damage Assessment Team Lead. This Team Member is responsible for representing the State or Tribal Government as part of Joint PDA field assessment team. This team member may also be deployed to provide SME or other technical support to impacted jurisdictions during local damage assessment and State or Tribal government verification phases.

State or Tribal Government Individual Assessment Team

State or Tribal Government IA Damage Assessment Team Lead

The State or Tribal Government IA Damage Assessment Team Leader reports to the State or Tribal Government Damage Assessment Coordinator. This Team Leader serves as the State or Tribal Government representative responsible for overseeing damage assessment activity related to the IA program. This includes overseeing technical programmatic support provided during local or county assessment efforts, verifying IA related information submitted by local or county emergency managers, and serving as the primary State or Tribal Government programmatic representative during the Joint PDA. During the Joint PDA this Team Lead serves as the State or Tribal Government counterpart to the FEMA IA PDA Team Lead.

State or Tribal Government IA Damage Assessment Team Member

The State or Tribal Government IA Damage Assessment Team Member reports to the State or Tribal Government IA PDA Team Lead. This Team Member is responsible for representing the State or Tribal Government as part of the Joint PDA. The Team Member may also be deployed to provide SME subject matter expertise or other technical support to impacted jurisdictions during the local damage assessment and State or Tribal Government verification phases.

State or Tribal Government Voluntary Agency Liaison

The State or Tribal Government Voluntary Agency Liaison (VAL) assigned to support damage assessments reports to the State or Tribal Government IA Damage Assessment Team Lead. The VAL is responsible for coordinating with NGOs including State and National Voluntary Organizations Active in Disaster (VOAD) and/or Community Organizations Active in Disaster (COAD) members in order to document activity and evaluate capacity of those organizations. Close coordination with the State or Tribal Government Mass Care and Emergency Assistance Crew Lead is recommended. This VAL may also work closely with the FEMA VAL and Mass Care Crew Lead.

State or Tribal Government Mass Care and Emergency Assistance Specialist

The State or Tribal Government Mass Care and Emergency Assistance Specialist assigned to support damage assessments reports to the State or Tribal Government IA Damage Assessment

Team Lead. This Specialist is responsible for documenting activity and evaluating the capacity of OFAs and NGOs providing mass care and emergency assistance support. Close coordination with the State or Tribal VAL is recommended. The Specialist may also work closely FEMA VAL and the FEMA Mass Care Crew Lead, which is also recommended.

FEMA Regional Office Roles and Responsibilities

FEMA Regional Administrator (RA)

The FEMA RA is the senior executive of the Regional Office, and has direction, authority, and control over all Regional functions and assets including area offices authorized as a component of the Regional Office. The RA is also responsible for receiving requests from the State or Tribal Government for Stafford Act declarations, overseeing the development of analysis, and making a recommendation based on information provided in the RA's Validation and Recommendation (RVAR).

FEMA Regional Recovery Division Director

The FEMA Regional Recovery Division Director reports to the FEMA RA and is responsible for providing direction and oversight for components of the Recovery Division to include programmatic and technical assistance provided within the Region in all phases of the damage assessment process. This includes overseeing the deployment of Regional Division staff required to support State or Tribal Government requests for Joint PDAs, and ensuring necessary programmatic information is available during the development of the RVAR.

FEMA Regional PA and IA Branch Chiefs

The Regional PA and IA Branch Chiefs report to the Regional Recovery Division Director and are responsible for providing direction and oversight of the IA or PA program. In this capacity the Regional IA and PA Branch Chiefs are responsible for overseeing the coordination of all actions required of their branch throughout the damage assessment process, including coordination with the State or Tribal Government program leads, mobilization of personnel and assets, coordination with OFAs and providing programmatic input for the RVAR.

FEMA Damage Assessment Team Roles and Responsibilities

When Joint PDAs are requested by the State or Tribal Government for *both* the PA and IA programs, an overall FEMA PDA Coordinator may be identified by the FEMA Regional Recovery Division Director to coordinate activity and maintain communication with the Region. The FEMA PDA Coordinator is typically the Regional IA or PA Branch Chief or Deputy Recovery Division Director. For the purpose of this description, the Coordinator will report to the FEMA Recovery Division Director. Programmatic Team Leaders assigned to oversee IA and PA program assessments will report to the FEMA PDA Coordinator and maintain appropriate coordination with the Regional IA and PA Branch Chiefs to ensure programmatic considerations are taken into account throughout the Joint PDA.

When a Joint PDA is requested for a *single* program (IA or PA), a programmatic PDA Team Lead will be identified by the FEMA Regional Recovery Division Director or programmatic Branch Chief. Programmatic PDA Team Leads are typically a senior program specialist or specialist with considerable experience in conducting PDAs. In this scenario the programmatic PDA Team Lead will report to the Regional IA or PA PDA Branch Chief to ensure programmatic considerations are taken into account throughout the Joint PDA. When a Joint PDA is requested by a Federally Recognized Tribal Government, close coordination with the Regional Tribal Liaison will also be required.

The roles and responsibilities outlined in the remainder of this section will clarify the reporting relationships and job responsibilities for FEMA staff as they relate to the damage assessment process.

FEMA PDA Coordinator

The FEMA PDA Coordinator reports to the FEMA Regional Recovery Division Director and, when assigned, serves as the principal FEMA PDA representative assigned to the Joint PDA. The Coordinator serves as a single point of contact for FEMA Recovery Programs (IA and PA) and ensures programmatic damage assessment leads are coordinated and supported with and by the Regional Office. This position is typically staffed by a FEMA Regional IA or PA Branch Chief and generally is only used when there is a request for simultaneous IA and PA PDAs.

FEMA Public Assistance Damage Assessment Team

FEMA PA PDA Team Lead

The FEMA PA PDA Team Lead reports to the FEMA PDA Coordinator or Regional PA Branch Chief, and serves as the programmatic representative responsible for overseeing all FEMA PA Joint PDA actions in coordination with their State or Tribal counterpart (State or Tribal PA PDA Team Leader), and ultimately for the efficient and accurate assessment of program related damage throughout the affected areas. The Team Lead is responsible for collecting, aggregating, and archiving Joint PDA data from PA Field Team Members as well as formulating narratives and tables used to document validated damage. The Team Lead must be a PA SME possessing

the requisite knowledge, skills, abilities, and field experience in all areas of the FEMA PA program as they relate to damage assessment.

FEMA PA PDA Team Member

The FEMA PA PDA Team Member reports to the FEMA PA PDA Team Lead and is responsible for validating damage assessments, cost estimates, and ensuring programmatic requirements are met in the field. The Team Member and the State or Tribal Government PA Team Member facilitate the exchange of information with local officials to ensure an accurate and efficient collection of damage, work, cost, and program requirement information to validate estimated program costs. The individual must have a detailed understanding of PA program requirements as they relate to damage assessments, good understanding of construction trades, and the ability to estimate costs for multiple types of work.

FEMA Individual Assistance Damage Assessment Team

FEMA IA PDA Team Lead

The FEMA IA PDA Team Lead reports to the FEMA PDA Coordinator or Regional IA Branch Chief. The Team Lead serves as the programmatic representative responsible for overseeing all FEMA IA Joint PDA actions in coordination with their State or Tribal counterpart (State or Tribal IA PDA Team Leader), and ultimately for the efficient and accurate assessment of home damage throughout the affected areas. The Team Lead is responsible for collecting, aggregating, and archiving Joint PDA data from IA Field Team Members as well as formulating narratives and tables used to document validated damage. They may also function as an IA PDA Team Member, if the PDA is localized and roles can be combined. The Team Lead must be an IA SME, possessing the requisite knowledge, skills, abilities, and field experience in all areas of the FEMA IA program as they relate to damage assessment.

FEMA IA PDA Team Member

The FEMA IA PDA Team Member reports to the FEMA IA PDA Team Lead and is responsible for validating damage to homes in the field. This Team Member and the State or Tribal Government IA Team Member facilitate the exchange of information with local officials to ensure an accurate and efficient collection of IA damage and impact information. The Team Member must have a well-developed understanding of IA damage assessment criteria used to evaluate damage to homes and the ability to identify and document disaster impacts.

FEMA Voluntary Agency Liaison Crew Leader

The FEMA VAL is assigned to support Joint PDAs report to the FEMA PDA IA Team Lead. The FEMA VAL is responsible for coordinating with the State or Tribal Government VAL to document activity and evaluate capacity of active NGO including State and National Voluntary Organizations Active in Disaster (VOAD) and/or Community Organizations Active in Disaster (COAD) members. The Mass Care Crew Lead is assigned to support Joint PDA activity, the VAL should coordinate with them closely to ensure efficiency and effectiveness.

FEMA Mass Care Crew Lead

The FEMA Mass Care Crew Lead is assigned to support Joint PDAs report to the FEMA IA PDA Team. The Crew Leads are responsible for coordinating with the State or Tribal government. Mass Care Crew Leads document activity and evaluate capacity of government agencies and NGOs providing MC/EM care and emergency assistance support. If a VAL is assigned to support damage assessment activity, the MC/EM Crew Leads should coordinate with them closely to avoid overlap and leverage the ability of the Mass Care Crew Lead to focus on larger or traditional MC/EM service providers.

FEMA Support Personnel and Technical Experts

FEMA Mitigation Specialist

The FEMA Mitigation Specialists assigned to the PDA reports to the FEMA PDA Coordinator or programmatic Team Lead. This Specialist provides information related to the National Flood Insurance Program (NFIP) including information related to flood insurance policies and communities that are not currently participating in the program. Additionally, they are responsible for identifying mitigation opportunities on a site-specific, community, State or Tribal-wide basis. In some cases Mitigation staff may conduct their own assessments. The findings from the Mitigation Specialists will be included in the Mitigation portion of the RVAR.

FEMA Environmental and Historic Preservation Specialist

The Environmental and Historic Preservation (EHP) Specialists or a Regional Environmental Officer (REO) assigned to the Joint PDA reports to the FEMA PDA Coordinator or programmatic Team Lead. This Specialist ensures that environmental and historic preservation concerns identified during the Joint PDA are understood and can be addressed at the appropriate level of government. While this assignment is not always necessary, ready access to environmental-related expertise is useful for a comprehensive and effective damage assessment. The REO or representative may accompany a Joint PDA team to obtain information for the PDA as well as for immediate and future strategic planning purposes. The REO or representative may help facilitate potential applicant communications with Federal and State resource and regulatory agencies as needed to address real-time emergency recovery work in sensitive habitat areas and/or involving historic properties.

FEMA External Affairs Specialist

The FEMA External Affairs (EA) Specialists assigned to the Joint PDA report to the FEMA PDA Coordinator, or PDA Team Lead. The EA Specialists serve as the agency's representative to the media for matters related to the Joint PDA. External Affairs Specialists assigned to support Joint PDAs must maintain close communication with FEMA Regional EA to ensure they are aware of activity and potential challenges encountered in the field.

Small Business Administration Damage Assessment Team

U.S. Small Business Administration PDA Coordinator

The U.S. Small Business Administration (SBA) PDA Coordinator coordinates with the FEMA PDA IA Team Lead. The Coordinator serves as the agency's representative responsible for overseeing the coordination of all SBA PDA related activity, and ultimately for the efficient and accurate assessment of program related damage as defined by SBA standards and policies. The Coordinator is responsible for collecting, aggregating, and archiving PDA data from SBA PDA Team Members and formulating narratives and tables used to document validated damage. The Coordinator may also function as a SBA PDA Team Member, if the PDA is localized and roles can be combined.

SBA PDA Team Member

The SBA Team Member reports to the SBA PDA Coordinator and is responsible for accurately reporting the results of damage and impact validation surveys conducted in the field in accordance with SBA damage assessment guidelines. The Team Member should have a good understanding of damage caused by various types of disasters and the methods and approximate cost required to make repairs as they apply to SBA damage assessment policy.

Other

Other Federal Agencies (OFAs)

Information provided by OFAs and NGOs is helpful in the development of efficient and effective damage and impact information. If agency representatives are physically deployed to support PDA activity, they will coordinate with the FEMA PDA Coordinator, or programmatic Team Lead.

Federal Coordinating Officer

Federal Coordinating Officers (FCO) are appointed following a Stafford Act declaration to manage the Federal response, recovery, and mitigation operations for each presidentially declared major disaster or emergency. Understanding this responsibility, potential FCOs should coordinate with the Regional Recovery Division Director to maintain awareness of potential challenges that will complicate the delivery of assistance should a disaster be declared.

Federal Disaster Recovery Coordinator

In large or catastrophic disasters or when OFAs may be deployed for a follow on NDRF Recovery Coordination assessment, the RA or FCO may request that the regional Federal Disaster Recovery Coordinator (FDRC) be part of the coordination and information sharing process.

Regional Watch Office

FEMA Regional Watch Offices are critical to the agency's ability to monitor and report threats in the Region and capture essential information in the immediate wake of a disaster. In this capacity, the Regional Watch Center is well positioned to capture information. By capturing specific information required by FEMA Regional and headquarters leadership to determine the need for expedited Federal assistance, the Watch office can help to ensure that Federal assistance is available to meet the needs of impacted citizens and jurisdictions. The Regional Watch unit works directly with the Regional Recovery Division to maintain awareness of completion status during Joint PDAs. The Regional Watch Center reports PDA activity to the National Watch twice daily.

Evaluating Damage and Impact for FEMA Public Assistance Program

This section is intended to create a common understanding of the information and documentation collected during damage assessments to evaluate the need for the FEMA PA program. By incorporating the information described in this section, emergency managers and potential applicants will be able to confidently and consistently document damage, work, and the cost of restoring damaged infrastructure.

The six primary factors considered when evaluating a request for the FEMA PA program outlined in 44 CFR § 206.48 are:

1. Estimated cost of assistance
2. Insurance coverage in force
3. Programs of other Federal assistance
4. Localized impacts
5. Hazard mitigation
6. Recent multiple disasters

This set of factors represents the cornerstone of the PA damage assessment process. By outlining the information that is collected and analyzed for each factor, this section will support its development at the most local level possible and ready potential applicants for the verification and validation process undertaken by State or Tribal and Federal emergency management agencies.

Estimated Cost of Assistance

In order to determine that a disaster is of a size and magnitude that it might warrant Federal Assistance, a total estimated program cost is developed and compared to established county, State, and Tribal Government per-capita indicators. A minimum indicator of $1 million in PA damage per disaster has been established, as FEMA expects that even the smallest States can recover from this level of damage to infrastructure without Stafford Act assistance.

The following four program eligibility factors are considered when developing PA program cost estimates: potential applicant, facility, work, and cost. These are commonly referred to as the building blocks of PA program eligibility. Generally FEMA must determine that program eligibility requirements have been met for each building block, starting at the foundation (potential applicant) and working up to cost at the top of the pyramid.

Estimating the total cost of assistance for the FEMA PA program requires an understanding of regulations documented in Title 44 of the Code of Federal Regulations (44 CFR) and policies

found in the FEMA PA Program and Policy Guide (PAPPG). Information contained in these documents may be needed to gain specific understanding of FEMA's PA program requirements; therefore, references have been provided throughout this section. While it is not intended that every potential applicant or emergency manager have a complete understanding of these regulations and policies, a general understanding may be helpful.

There is no one-sized-fits-all approach to documenting damage, work, and costs, or to collecting supporting documentation. Damage assessment teams must weigh the benefit of increased accuracy against the timeline for delivering necessary assistance. Potential applicants should generally be prepared to provide enough information and supporting documentation to allow verification of submitted claims.

FEMA will require additional information or more substantial supporting documentation for (1) projects greater than the large project threshold or (2) projects that, given the circumstances, raise serious questions regarding eligibility. Such information and documentation may include, but are not limited to:

- Ownership, rental, or lease documents
- Maintenance records
- Insurance policies
- PNP supporting documentation, such as a tax exemption letter
- Contracts and procurement documentation
- Invoices
- Safety and inspection reports
- Other documentation necessary to establish that program requirements have been met.

Identifying Potential Applicants and Damaged Facilities

Identifying Potential Applicants

Identifying potential applicants and damaged facilities are the first steps that jurisdictions must take to conduct damage assessments for the FEMA PA program. There are four types of applicants eligible for PA funding.

1. State and Territorial Government Agencies
   The fifty States as well as the District of Columbia, American Samoa, the Commonwealth of the Northern Mariana Islands, Guam, Puerto Rico, and the U.S. Virgin Islands.

2. Tribal Governments
   Federally recognized Indian Tribal Governments, including Alaska Native villages and organizations (hereafter referred to as "Tribal Governments"). Alaska Native Corporations are not eligible, as they are private for-profit entities.

3. Local Governments
   Counties and parishes; municipalities, cities, towns, boroughs, and townships; local public authorities; school districts; intrastate districts; councils of government (regardless of

whether incorporated as nonprofit corporations under State law); regional and interstate government entities; agencies or instrumentalities of local governments; State-recognized Tribal Governments; special districts established under State law; and Community Development Districts that are legally responsible for ownership, maintenance, and operation of an eligible facility that is accessible to the general public.

4. Certain Private Non-Profit Organizations
   Private Nonprofit (PNP) organizations as defined in 44 CFR §206.221 (e).

For the purpose of damage assessments, potential applicants may be asked to verbally confirm that they meet general program requirements.

Potential PNP applicants are typically further asked to confirm that they are nonprofit organizations that perform a critical service or non-critical but essential government service as defined by FEMA (see Appendix C). Defining the type of service provided (critical or non-critical) is important during damage assessments, as FEMA will generally only consider costs that do not need to be first considered by the U.S. SBA in its estimated cost of assistance (see Programs of other Federal assistance). Certain potential PNP applicants may be asked to verbally confirm that they are open to the general public. In cases where nonprofit status is unclear, the organization may be asked to provide a current ruling tax exemption letter from the Internal Revenue Service (IRS), or documentation from the State substantiating it is a non-revenue production nonprofit entity.

Departments, offices, and other entities formed under potential applicants (public works, police, fire, sanitation, water, parks, roads, etc.) often assess damage to facilities they are responsible for as a typical course of action following a disaster. These departments are also often the most capable of estimating the cost of restoration. Emergency managers can support these efforts by ensuring that these offices are aware of the information and documentation discussed in this section and ensuring coordination. For simplicity, the term “potential applicant” used throughout this section is intended to be inclusive of any entities formed under the four types of applicant’s eligible to receive PA funding described above.

Departments, offices, and other entities formed under potential applicants often assess damage to facilities they are responsible for as a typical course of action following a disaster, and are often the most capable of estimating the cost of restoration.

Identifying Damaged Facilities

When a disaster occurs, damage should be identified as quickly as possible. FEMA will consider disaster related damage to any building, works, system, or equipment, built or manufactured, or improved and maintained natural feature that a potential applicant has legal responsibility to restore.

The location of all damage sites should be documented as specifically as possible using street addresses and/or GPS coordinates. FEMA damage assessment personnel should capture damage locations by documenting the USNG location. (Reference-"Use of the USNG FEMA Directive 092-5). When possible, potential applicants should provide annotated maps showing damage locations to the State or Tribal Government and FEMA at the time of the Joint PDA. These maps are especially helpful when damage is spread across a system or jurisdiction.

For less costly damage, program facility eligibility requirements are generally confirmed verbally with the potential applicant. For large projects or when facility's program eligibility is unclear, potential applicants will be asked to provide documentation to show that a facility meets program eligibility requirements. These documents may include but are not limited to:

- documents showing ownership;
- lease, rental agreement, or other documents showing legal responsibility for restoration;
- maintenance records or other documents showing that the facility was in use at the time of the disaster; and/or
- plans that show that improvements to natural features were made and maintained.

Additional information related to facilities can be found in Chapter 2, Section III of the PAPPG.

Documenting Damage, Work, and Cost

Once damage has been identified, potential applicants should document the work, and estimated or actual cost required to perform Emergency Work or restore damaged infrastructure. To be considered, work must be: (1) required as a result of the disaster; (2) be within a jurisdiction being assessed (with the exception of sheltering and evacuation activities); and (3) be the legal responsibility of a potential applicant.

Documenting damage

Potential applicants are encouraged to photograph damage. This may expedite damage assessment verification and help potential applicants to document pre-restoration damage should a disaster be declared. For the purpose of damage assessments, photographs only need to be submitted for a representative site when multiple similar damage sites exist. It is not necessary to include photographs of all emergency protective measure work; however, photographs should be included to verify damage at sites where emergency construction is necessary (e.g. construction of an emergency roadway). Incorporating these photographs into diagrams or maps can further illustrate the location and extent of damage and expedite decision-making.

Potential applicants are encouraged to photograph damage in order to expedite damage assessment verification and document pre-restoration damage should a disaster be declared.

Potential applicants should document damage dimensions, materials, and the size or capacity of

damaged facility elements. This is particularly important for work to be completed, as the information gathered is often critical to estimating and verifying work and cost required for restoration.

Documenting Work and Cost

In order to organize work-related information, FEMA divides each applicant's work into logical groupings. These groupings first separate activities into two primary work types, Emergency Work and Permanent Work. These work types are further divided into Categories of Work (A-G) defined by FEMA. This grouping structure is illustrated in the chart below:

Type	Category of Work	
Emergency Work:	A	Debris Removal
	B	Emergency Protective Measures
Permanent Work:	C	Roads and Bridges
	D	Water Control Facilities
	E	Buildings and Equipment
	F	Utilities
	G	Parks, Recreation and Other

Information describing work and cost should be broken down by Category of Work (Category). If a potential applicant is unsure of the Category, work and cost required to restore the facility should still be documented so that a Category can be assigned at the time of the Joint PDA.

Work and cost associated with completed work can be summarized and supported, when necessary, with the documentation described in this section. Estimates will need to be developed for work yet to be completed. Note, for accuracy, a member of a potential applicant's staff that is familiar with the damaged facility and regularly develops estimates for similar work, or a qualified professional should develop estimates. Work and cost estimate calculations should be provided for all work to be completed to allow validation of estimates and ensure that it meets program eligibility requirements. When damage to a facility is complex or beyond the ability of a potential applicant to estimate, FEMA technical experts may be requested by a State or Tribal Government to estimate work and cost.

The following are common general methods used to accomplish disaster related work and estimate cost. The information and documentation discussed are intended to assist potential applicants and emergency managers to prepare work and cost estimations and are applicable across all Categories of Work.

Labor (Force Account)

FEMA refers to potential applicant's personnel as "force account." Force account labor claimed should be based on hourly rates plus the cost of fringe benefits. Overtime, premium pay, and compensatory time claimed by potential applicants should be consistent with pre-disaster written policies. Costs related to stand-by time will be considered when incurred in preparation for and directly related to actions necessary to save lives and protect public health and safety. Hours claimed for force account employees need to be reasonable and necessary.

FEMA's criteria for considering straight-time and overtime labor costs differ depending on the type of employee and whether that employee is performing Emergency Work or Permanent Work.

Emergency Work – only overtime is considered for budgeted employees. For unbudgeted employees performing Emergency Work, both straight-time and overtime are considered.[‡]

Permanent Work – both straight-time and overtime labor costs are considered for budgeted and unbudgeted employees.

For the purpose of damage assessments, potential applicants may choose to use average pay rates for groups of force account employees performing similar work, if calculating the actual cost for individual employees is time-prohibitive. In either case, the rate claimed needs to be reasonable for the type of work performed.

Potential applicants claiming force account labor costs during damage assessments should document the number of employees performing a given task, type of employee (budgeted or unbudgeted), type of work being performed, regular time and overtime hours worked, and the hourly rate claimed in a summary. Timesheets, labor policies, and documentation to support wage rates are not typically necessary during damage assessments when the time and rates claimed are reasonable for the work.

Additional information related to potential applicant's force account labor can be found in Chapter 2, Section V (A) of the PAPPG.

Equipment (Force Account)

FEMA refers to equipment owned by a potential applicant as force account equipment. FEMA considers the cost of using force account equipment, including permanently mounted generators, based on hourly rates. Only time that the equipment was in use will be considered unless it was used intermittently for more than half of the day.

[‡] Note: Due to program allowances available through the alternate procedures debris removal pilot, authorized by the Sandy Recovery Improvement Act, both straight-time and overtime labor costs will be considered for both budgeted and unbudgeted employees engaged in debris removal work.

Potential applicants may estimate the cost of force account equipment using FEMA equipment rates or Tribal, State, or local equipment rates that meet criteria defined by FEMA. FEMA may also consider cost based on mileage rates for vehicles, if less costly than hourly rates.

Potential applicants submitting force account equipment costs during damage assessments should specifically document the type of equipment being used, type of work being performed, hours used / miles driven, and the equipment rate used in a summary. Activity logs and equipment rate documents are not typically necessary during damage assessments as long as the time and rates claimed are reasonable for the work.

Information related to a potential applicant's force account equipment, including FEMA's policies on purchased equipment, can be found in Chapter 2, Section V (B) of the PAPPG.

Leased Equipment

When a potential applicant leases equipment, FEMA will generally consider costs submitted based on the terms of the lease.

Potential applicants that wish to claim leased equipment costs should specifically document the type of equipment that was leased, type of work being performed, and the cost of the leased equipment in a summary. Lease documents are not typically necessary during damage assessments as long as the cost claimed is reasonable for the equipment.

Additional information related to leased equipment can be found in Chapter 2, Section V (C) of the PAPPG.

Supplies

FEMA will consider the cost of supplies, including materials, if:

- The supplies or materials are or will be purchased and are justifiably needed to effectively respond to and/or recover from the incident; or
- The supplies are or will be taken from the potential applicant's stock and used for the incident.

For the purpose of damage assessments, potential applicants should document any materials or supplies required for Emergency Work or Permanent Work in a summary. Minor supplies and materials may be listed as miscellaneous; however, significant expenditures should be specifically noted and include unit costs.

The cost of supplies and materials should be based on invoices, a potential applicant's established methods for pricing supplies and materials, historic prices for materials, or prices from area vendors. Unless it is a large project, it is not typically necessary for potential applicants to provide invoices or other supporting documentation to support supply cost estimations during damage assessments.

Additional information related to supplies and materials can be found in Chapter 2, Section V (D) of the PAPPG. FEMA's policy on the disposition of purchased equipment and supplies can be found in Chapter 2, Section V (E) of the PAPPG.

Contract Services

FEMA will consider the cost of contract services based on the terms of the contract. While procurement methods and contract requirements are generally not reviewed during damage assessments, potential applicants should note that complying with procurement standards and contract requirements are a conditions for receiving PA funding. Failure to adhere to these standards and requirements could jeopardize PA funding if a disaster is declared.

For the purpose of damage assessments, potential applicants should document all contract work and cost in a summary. The estimate, bid, or contract should also be made available as supporting documentation when the cost is above the large project threshold.

Additional information related to Federal procurement and contracting requirements can be found in Chapter 2, Section V (G) of the PAPPG and 2 CFR § 200.

Mutual Aid Agreements

When a potential applicant requests resources from another jurisdiction through a mutual aid agreement, FEMA will consider costs incurred by the potential applicant. When a State has a statewide mutual aid agreement that designates the State as being responsible for reimbursing mutual aid costs, FEMA will consider costs incurred by the State. In either case, agreements and cost should be consistent with past practices for mutual aid.

Additional information related to mutual aid, including post incident agreements and eligibility, can be found in Chapter 2, Section V (H) of the PAPPG.

For the purpose of damage assessments, potential applicants or States submitting mutual aid costs should provide labor, equipment, supply, and/or material costs in a summary as described previously.

Other PA program considerations can have a substantial impact on work and cost estimates. The information and documentation discussed below are intended to assist potential applicants and emergency managers to prepare work and cost estimates, and are applicable across multiple Permanent Work Categories (C-G).

Codes and Standards

Generally, damage assessment work and cost estimations should be focused on that required to restore the facility to its pre-disaster design and condition. Improvements required by current applicable codes, specifications, and standards (hereinafter referred to as "standards") may be considered when facility restoration triggers the upgrade requirement, and when the standard:

1. Applies to the type of restoration required;
2. Is appropriate to the pre-disaster use of the facility;
3. Is reasonable, in writing, formally adopted by the State, Tribal, or local government, and implemented by the potential applicant at the time of the disaster, or is a legal Federal requirement;
4. Applies uniformly; and
5. Was enforced during the time it was in effect.

If a potential applicant would like to include upgrades required by standards, the upgrade will be evaluated according to the five criteria above. When a code or standard will dramatically increase the cost of restoration, potential applicants should provide the specific code or standard to be considered, in writing, as early as possible to State or Tribal and FEMA damage assessors for consideration. Additional information related to codes and standards can be found in the PAPPG Chapter 2 Section VII (C).

Repair vs. Replacement

If the cost of repairing a facility is estimated to exceed 50% of the replacement cost, an estimate based on the replacement of the facility may be considered. If a potential applicant would like a facility to be considered for replacement, they should provide information and documentation used to develop their estimate to State, Tribal, and FEMA technical experts for review and validation. This practice does not apply to individual structural or mechanical components of a facility. Additional information on the repair vs. replacement calculation, including the specific factors considered, can be found in the PAPPG Chapter 2 Section VII (E), and 44 CFR § 206.226 (f).

Landslides and Slope Stabilization

If a facility is located on a slope and is damaged as a result of a landslide or slope instability triggered by the incident, FEMA determines the stability of the slope that supports the facility before it considers costs required to restore the facility. Site inspections and limited geotechnical assessments to determine site stability and to obtain

a technical opinion of the cause of the slope failure may be considered. The cost of restoring integral ground (ground necessary to physically support a facility) may be considered. Permanent Work to stabilize natural ground that is not integral to an eligible facility's function is not considered. Additional information regarding landslide and slope stabilization work can be found in the PAPPG Chapter 2 Section VII (H)(6).

Cost Not Considered

Costs that are not eligible for PA funding will not be considered in the calculation of the estimated cost of assistance. Examples include, but are not limited to:

- Capital improvements not required by codes and standards
- Loss of revenue
- Loss of useful service life of facilities
- Tax assessments
- Increased operating expenses (with limited exceptions for specific emergency health and safety tasks)
- General surveys to assess damage
- Cost of restoring facilities that were not in active use at the time of the disaster

Unique Considerations for each Category of Work

As discussed previously, FEMA divides work into seven categories (A-G). Each category of work has specific considerations and policies that should be taken into account when conducting a damage assessment. To assist emergency managers and potential applicants in addressing these and collecting appropriate information and documentation during damage assessments, the following sections will examine each of the FEMA PA Categories of Work. Where additional policy related information may be required, references are provided.

Category A – Debris Removal

Debris removal activities, such as clearance, removal, and disposal, will be considered during damage assessments if they do not fall under the authority of OFA's (see OFA section below) and the removal is in the public interest. Public interest is based on whether the work:

- Eliminates immediate threats to lives, public health, and safety;
- Eliminates immediate threats of significant damage to improved public or private property; or
- Ensures economic recovery of the affected community to the benefit of the community at large.

The types of debris considered include, but are not limited to, vegetative debris, construction and demolition debris, sand, mud, silt, gravel, rocks, boulders, vehicle/vessel wreckage, and contaminated debris.

Removal of debris from improved public property and public right-of-ways (ROWs), including Federal-aid roads, will be considered. If State, Tribal, or local governments authorize residents to place incident-related debris on public ROWs, FEMA will consider the cost of removing the debris from the ROWs for a limited period of time. Removal of debris placed on the public ROW from commercial properties will not be considered. Removal of materials related to the construction, repair, or renovation of either residential or commercial structures will not be considered.

Debris removal work may be considered during damage assessments if it is necessary to eliminate an immediate threat to lives, public health and safety, and improved property, or to ensure the economic recovery of the affected community to benefit the community at large.

FEMA has defined specific eligibility criteria and documentation requirements for hazardous limbs, trees, and stumps. While costs associated with the removal of these hazards will be considered, potential applicants are encouraged to review FEMA's policy located in Chapter 2, Section VI (A)(2) of the PAPPG to avoid jeopardizing PA funding should a disaster be declared.

Debris removal from the following locations/areas will not be considered:

- Federally maintained navigable channels and waterways
- Flood control works under the authority of the Natural Resources Conservation Service (NRCS)
- Agricultural land
- Natural, unimproved land, such as heavily wooded areas and unused areas

Debris removal from waterways that is necessary to eliminate the immediate threat to life, public health and safety, or improved property will be considered when not under the authority of an OFA. For navigable waterways this may include the removal and disposal of debris that obstructs the passage of vessels, to specific depths defined by FEMA. For non-navigable waterways and flood control works this may include debris that obstructs or could obstruct intake structures, debris that could damage bridges, culverts, or other structures, and debris that is causing or could cause flooding to improved public or private property during the occurrence of a five-year flood. Removal of debris in a waterway that does not meet these immediate threat criterion will not be considered, even if the debris is deposited by the incident. All work in waterways should be noted to assist in the early identification of potential environmental requirements.

When debris removal is required to restore the pre-disaster carrying or storage capacity of engineered channels, debris and sediment basins, storm water detention and retention basins, and

reservoirs it may be considered as permanent work under Category D, if information and documentation is provided to show that it meets program eligibility requirements. Additional information can be found in Chapter 2, Section VII (H)(2) of the PAPPG.

Work requirements developed for damage assessments should include the type and estimated amount of debris that will need to be removed in units (cubic yards or tons). Potential applicants should survey damage and estimate the total amount of debris that will need to be removed. For damage assessments, a rough estimate can be developed by first estimating the amount of debris that needs to be removed for an area or length of road that represents a *typical or average* amount of debris. This estimated quantity can then be divided by the area, or length of road to yield an average unit estimate. This unit estimate can then be used to estimate the total amount of debris in the jurisdiction. These calculations should be provided to support estimates developed. Locations where these estimates were developed should be documented and photographs should be taken to aid in verifying estimates.

Once a debris estimate has been developed, the cost of removal must be calculated. Costs for the pick-up, staging/transferring, separating, reducing, and disposing of debris should be taken into account. (Note alternative procedures allowance for straight time. See p.25)

Potential applicants may also use cubic yard rates supplied by contracts or historic costs to estimate costs. Unit costs for debris removal can also be calculated by dividing the amount of debris removed by the cost of removal. Calculations used to estimate the cost of debris removal should be provided to support estimates.

If a potential applicant still has work to be completed, a total estimated cost of removal can be calculated by multiplying the unit cost developed for completed work by the cubic yards of debris still requiring removal. If work is partially complete at the time of the Joint PDA, locations where typical amounts of debris can be measured should be provided to validate estimates for the remaining work.

Potential applicants should document the location of all temporary and permanent debris sites, including temporary debris staging and reduction sites (TDSR). These locations are important to validate quantity estimates and the early identification of potential environmental requirements.

Potential applicants should be aware of environmental requirements for the disposal of debris and take appropriate measures to ensure that disposal sites and methods comply with applicable laws and regulations. This is particularly important when debris removal operations may impact:

- Waterways,
- Floodplains,
- Wetlands,
- Federally listed threatened and endangered species,
- Critical habitats,
- Historic properties,
- And when the amount of debris will challenge existing certified TDSRs.

While these requirements do not typically impact damage assessment cost estimates, failure to adhere to local, State, and Federal environmental and historic preservation laws could jeopardize Federal funding if a disaster is declared.

Additional information related to debris removal can be found in Chapter 2, Section VI (A) of the PAPPG**.**

Example - Category A:

Vegetative debris on roadways:

- Total miles of road impacted = 65 miles (map)
- Average amount of debris per mile = 230 cy/mile (photographs and locations provided)
- Cost for removal and disposal = $12/cy (contract provided)
- 75% work complete – locations of work to be completed provided (map)
- Cost calculation = (65 mi x 230 cy/mile = 14950 cy) x $12/cy = $179,400
- Locations for reduction and disposal sites (map)

Total estimated cost = $179,400.

Category B – Emergency Protective Measures

Emergency Protective Measures are actions taken before, during, and after a disaster to eliminate or lessen immediate threats to life, public health, or safety, or to eliminate or lessen immediate threats of significant additional damage to improved public and private property in a cost effective manner.

Saving lives or Protecting Public Health and Safety

The following is a list of emergency protective measures often taken to save lives or protect public health or safety that may be considered. This list is not all-inclusive.

- Transporting and pre-positioning equipment and other resources for response
- Flood fighting
- Emergency Operations Center (EOC)-related costs
- Emergency Access
- Supplies and commodities
- Medical care and transport
- Evacuation and sheltering costs
- Childcare
- Safety inspections
- Search and Rescue
- Fire fighting
- Security, such as barricades, fencing, or law enforcement
- Use or lease of temporary generators for facilities that provide essential community services
- Dissemination of information to the public to provide warnings and guidance about health and safety hazards

Protecting Improved Property

The following are emergency protective measures to protect improved property that may be considered when specific requirements are met. This list is not all-inclusive.

- Constructing emergency berms or temporary levees to provide protection from floodwaters or landslides
- Emergency repairs necessary to prevent further damage, such as covering a damaged roof to prevent infiltration of rainwater
- Buttressing, shoring, or bracing facilities to stabilize them or prevent collapse
- Temporary slope stabilization
- Mold remediation
- Removal and storage of contents from facilities that meet program requirements for the purpose of minimizing additional damage
- Extracting water and clearing mud, silt, or other accumulated debris from facilities that meet program requirements

For potential PNP applicants, emergency protective measures considered are generally limited to activities associated with preventing damage to facilities that meet program requirements.

Information and documentation collected by potential applicants during damage assessments to describe required emergency protective measures are generally focused on documenting the type of actions taken, force account mutual aid or contract resources employed, and cost. Note that only overtime will be considered for permanent employees engaged in emergency protective measures. Stand-by force account labor costs will be considered when it is directly related to actions necessary to save lives and protect public health and safety. Stand-by time for equipment is not considered. Photographs should be included to verify damage and work required at sites where emergency construction is necessary. Because actions taken for emergency protective measures can be widespread, annotated maps can be particularly helpful in capturing and describing actions taken.

Additional information related to emergency protective measures can be found in Chapter 2, Section III of the PAPPG.

Example - Category B

Sandbagging of City Buildings

- FA labor - 60 overtime hrs @ $35/hr avg. = $2,100
- FA equipment - (1) 15 cy dump truck for 60 hrs @ $65/hr = $3,900
- Materials – sand and sandbags = 3,100

Total estimated cost = $9,100

Category C – Roads and Bridges

Permanent Work required to restore roads (paved, gravel, and dirt), bridges, and their components to their pre-disaster design and function is considered unless the restoration falls under the authority of an OFA. Permanent restoration of private roads, including homeowners' association roads, are not eligible for FEMA PA funding, and thus are not considered.

Road components include but may not be limited to:

- Surfaces
- Bases
- Shoulders
- Ditches
- Drainage structures, such as culverts
- Low water crossings
- Associated facilities, such as lighting, sidewalks, guardrails, and signs

Bridge components include but may not be limited to:

- Decking
- Guardrails
- Girders
- Pavement
- Abutments
- Pier
- Slope protection
- Approaches
- Associated facilities, such as lighting, sidewalks, and signs

Damage must be the result of the disaster to be considered. Work to repair potholes or fatigue cracking is generally not considered as this type of damage is rarely caused directly by a single incident.

When a system is damaged (e.g. road system), work and cost should be documented by site but may be combined into a single summary for evaluation. However, to simplify review by technical specialists, bridge restoration work should be separated from other roadwork. For large projects in which the pre-disaster condition may impact estimates, potential applicants will be asked to provide bridge inspection/safety reports to verify pre-disaster condition. If deficiencies identified in these reports were addressed, documentation supporting work performed should also be provided.

Work to repair scour or erosion damage to a channel or stream bank will be considered if the repair is necessary to restore the structural integrity of a road, culvert, or bridge. Any work required in a waterway should be noted to promote the early identification of environmental requirements.

Additional information related to road and bridge work can be found in Chapter 2, Section VII (H)(1) of the PAPPG.

Example - Category C

Lake Arnold Bridge Washout – CR 233 (map)

- Two span, 80 ft long x 24 ft wide, concrete beam and deck structure
- Restoration cost est = $240/sq ft. (historic costs provided by county engineer)
- Cost calculation = 80 ft x 24 ft x $240/sq ft = $460,800; engineering (15%) = $69,120; geotechnical (1.5%) = 6,912
- Safety inspection and basis for historic cost estimate are available

Total estimated cost = $536,832

Category D – Water Control Facilities

Work done to restore publicly-owned water control facilities that do not fall under the authority of an OFA may be considered. Water control facilities are those facilities built for the following purposes:

- Channel alignment
- Recreation
- Navigation
- Land reclamation
- Irrigation
- Maintenance of fish and wildlife habitat
- Interior drainage
- Erosion prevention
- Flood control
- Storm water management

They include:

- Dams and reservoirs
- Levees and floodwalls
- Lined and unlined engineered drainage channels
- Canals
- Aqueducts
- Sediment and debris basins
- Storm water retention and detention basins
- Coastal shoreline protective devices
- Irrigation facilities
- Pumping facilities
- Navigational waterways and shipping channels

Restoring the pre-disaster carrying or storage capacity of engineered channels, debris and sediment basins, storm water detention and retention basins, and reservoirs may be considered, but only if the potential applicant can establish:

- The pre-disaster capacity of the facility; and
- The facility was maintained on a regular schedule.

Flood control works, such as levees, floodwalls, flood control channels, and water control structures generally fall under the under the authority of USACE or NRCS. For work to restore these facilities to be considered, it must first be confirmed that it does not fall under the authority of these OFA's. Secondary levees riverward of a primary levee are not considered, unless they protect human life.

Additional information related to the eligible repair or replacement of damaged water control facilities can be found in Chapter 2, Section VII (H)(2) of the PAPPG.

Example - Category D

Fish Creek Debris Basin Restoration

- Basin dimensions: 300 ft x 200 ft x 10 ft
- Estimated depth of debris = 1.5 ft
- Amount of debris attributable to flood = 80% (basin last cleaned 3 mo earlier @ $20.00/cy)
- FA labor and equipment
- Cost calculation = 0.8 x (300ft x 200ft x 1.5 ft) x (1cy/27 cu ft) x $20.00/cy = $53,333

Total estimated cost = $53,333

Category E – Buildings and Equipment

Buildings

Work required to restore damaged buildings will be considered along with upgrades required by codes and standards. This includes all structural and non-structural components, including mechanical, electrical, and plumbing systems, as well as contents, furnishing and equipment within the building. Specific policy guidance related to the restoration of files, research-related contents, animals, irreplaceable collections and individual objects, and library books and publications can be found in Chapter 2, Section VII (H)(2) of the PAPPG.

Mold remediation and removal of mud, silt, or other accumulated debris will be considered as Permanent Work when conducted for the purpose of restoring the facility. When this work is required to eliminate or lessen an immediate threat, it will be considered but captured under Category B.

Environmental and historic preservation requirements are common to the restoration of public buildings. Potential applicants are encouraged to identify damaged facilities over 45 years old, and any work that may be environmentally or culturally sensitive to avoid jeopardizing Federal funding should a disaster be declared.

Equipment

Work required to restore damaged equipment will be considered. This includes any vehicles and construction equipment. When equipment is not repairable, potential applicants may use "blue book" values or similar price guides to estimate the cost of replacing the damaged equipment with equivalent items – similar age, condition, and capacity. If the cost to replace damaged equipment is less than the cost to repair it, the estimate should be based on the replacement cost as it represents the lowest cost option.

Equipment that is damaged performing Emergency Work, will be considered under the appropriate Emergency Work Category (A or B).

Additional information related to the restoration of damaged public buildings and equipment can be found in Section VII (H)(3) of the PAPPG.

Example - Category E

Building #212 – 123 City Center (map)

- 4 stories ea. = 120 ft. x 100 ft
- Built 1998
- Basement and first floor flooding – flood debris removal, building mechanical systems, damaged furniture removal and replacement, interior wall repair and painting
- Repairs to be performed by contract services
- Estimated cost to repair = $840,000 (contract provided)
- Insurance = $700,000 (policy provided)

Total estimated cost = $140,000

Category F – Utilities

Work required to restore damaged utility facilities to pre-disaster design and function will be considered under Category F. This includes:

- Water storage facilities, treatment plants, and delivery systems
- Power generation, transmission, and distribution facilities, including, but not limited to, wind turbines, generators, substations, and power lines
- Natural gas transmission and distribution facilities
- Sewage collection systems and treatment plants
- Communication systems

Restoration work that will be considered includes but is not limited to:

- Permanent restoration of any component of the system, including buildings, structures, or systems, even if not contiguous.
- Electrical conductor replacement (subject to specific criteria)
- Inspection or assessment of damaged components of a system (note general surveys to identify damage are not considered)
- Inspection or assessment of an inaccessible structure or component of a system (e.g. underground systems), but only when there is evidence of damage

FEMA will consider the cost of limited clearance of disaster-related debris from a right of way (ROW) to enable access to the facility. Additionally, if trees in the vicinity of the facility were damaged by the incident and an arborist confirms that the trees cause an immediate threat of further damage to the facility (e.g. overhead power lines), FEMA will consider the cost of removing those trees. Any further clearance of debris from the ROW will not be considered.

Work and cost estimates should be based on specific disaster related damage. As an example, if there is evidence of a broken sewer line between A and B Streets, potential applicants should not estimate complete replacement between A and B Streets, but use an appropriate length of repair given the above ground indicators. Likewise, potential applicants should not include sites where damage is suspected, but not confirmed.

If an electric utility cannot effectively repair damaged conductors and would like to have conductor replacement work considered, information supporting the need should be provided for review, in writing, as early as possible to State or Tribal and FEMA damage assessors for consideration. Specific information can be found in Chapter 2 Section VII (H)(4).

The cost of obtaining an alternative source of power because of the shutdown of a power generation plant will not be considered as it is an increased operating expense. Similarly, FEMA cannot provide funds for revenue lost if a utility is shut down.

Additional information related to the restoration of damaged public utilities can be found in Section VII (H)(4) of the PAPPG.

Example – Category F

Common Electric

- 14 utility poles destroyed – conductor will be re-hung (photos)
- FA labor, equipment, and materials
- Estimated cost of repair = $4,750/pole. (historic cost)
- Work has begun on 5 of 14 poles
- Cost calculation = 14 poles x $4,750/pole = $66,500

Total estimated cost = $66,500

Category G – Parks, Recreation Facilities, and Other

Eligible publicly owned facilities in this category include:

- Mass Transit facilities such as railways
- Beaches
- Parks
- Playground equipment
- Swimming pools
- Bath houses
- Tennis courts
- Boat docks
- Piers
- Picnic tables
- Golf courses
- Ball fields
- Fish hatcheries
- Ports and harbors
- Other facilities that do not fit in Categories C–F

Unimproved natural features are not eligible. The cost of replanting trees, shrubs, and other vegetation will be considered when they are part of the restoration of an eligible facility and are needed for erosion control, to minimize sediment runoff, or to stabilize slopes, including dunes on eligible improved beaches. Grass and sod replacement will be considered if it is an integral to the facility. Vegetation replacement necessary to restore the function of the facility (e.g. if vegetation is a component of a sewage filtration system) will also be considered. Long-term monitoring to ensure vegetative growth is not considered. Plantings ineligible for replacement include, but are not limited to:

- Replacement of trees, shrubs, and other vegetation not required for erosion control
- Replacement of destroyed crops
- Cosmetic or aesthetic vegetation, such as landscaping around public facilities or in median strips along roadways. This restriction applies even when the vegetation is damaged during performance of eligible work, such as when repairing underground utilities within landscaped areas.

Replacement of sand on beaches is only considered under certain conditions outlined in Section VII (H)(5) of the PAPPG.

Environmental and historic requirements are common to parks and recreation facilities. Potential applicants are encouraged to identify damaged facilities over 45 years old, any work in waterways, and other potential restoration work that may have environmental or historic preservation requirements early to avoid jeopardizing Federal funding should a disaster be declared.

Additional information related to the restoration of damaged parks, recreation facilities, and other items can be found in Section VII (H)(5) of the PAPPG.

Example - Category G

Springfield Park

- Clean/ repair: 10 wood picnic tables, playground apparatus, 4 benches, 16 trash receptacles, 2 sets of bleachers. (photos)
- Replace: 400 playground safety play surface tiles @ $24.50/tile - verbal quote (photos)
- FA labor = 20 regular hr @ $25/hr avg. (with benefits) = $500
- Playground safety tiles = 400 tiles at $24.50/tile = $9,800

Total estimated cost = $10,300

Insurance Coverage in Force

When estimating the amount of anticipated assistance during damage assessments, FEMA must reduce PA program costs for restoring a facility by actual or anticipated insurance proceeds. The reduction is based on the amount of insurance that is in place or was required following a previous disaster. If the facility is located in a Special Flood Hazard Area, estimated costs are reduced in accordance FEMA's insurance regulations including when the facility is uninsured or under insured. This is discussed in 44 CFR § 206.48 (a)(3)

Assembling available insurance policy and settlement information after the disaster can dramatically reduce the time required to complete damage assessments.

Costs not addressed by insurance, including a potential applicant's deductible, damage not covered under an existing policy or required by regulation, and in circumstances where restoration costs exceed policy limits, will be considered. For less costly damage, insurance coverage and deductibles are generally confirmed verbally with the potential applicant. For a large project, or if a potential applicant would like costs other than a deductible considered for an insured facility, a copy of their insurance policy and other related documentation should be provided to the State or Tribal Government and FEMA as soon as possible for evaluation.

For a NFIP-insurable facility located in a Special Flood Hazard Area (SFHA), FEMA will reduce estimated program costs when the facility is:

- Located in an area that FEMA has identified as a SFHA for more than 1 year;
- Damaged by flooding; and
- Uninsured for flood loss.

If a potential applicant does not have flood insurance for the facility or carries inadequate flood insurance for the insurable facility, FEMA will reduce program costs by the lesser of:

- The maximum amount of insurance proceeds that could have been obtained from an NFIP standard flood insurance policy for the building and its contents; or
- The value of the building and its contents at the time of the incident.

Assembling available insurance policy and settlement information after the disaster can dramatically reduce the time required to complete the damage assessment process. Emergency managers are encouraged to work with potential applicants to ensure that they are aware of the importance of providing this information as part of the damage assessment process.

If an applicant's facility has a requirement to obtain and maintain insurance as a result of previously receiving Public Assistance in a previous disaster, and the applicant has failed to obtain and maintain the required insurance, that facility is ineligible for assistance and FEMA will not consider the damage to that facility in the damage assessments.

Programs of Other Federal Agencies (OFA's)

FEMA considers programs of OFA's during damage assessments. This is discussed in 44 CFR § 206.48 (a)(6).

Additionally, 44 CFR § 206.226 (a) states that disaster assistance generally will not be made available under the Stafford Act when an OFA has specific authority to restore facilities damaged or destroyed by a Major Disaster event.

When it appears that a damaged facility may be within the authority of an OFA, FEMA will ask the specific Federal agency with responsibility to review the damage and advise FEMA whether the work would be eligible under that agency's authority. In most cases, decisions made for the purpose of damage assessments can be made quickly over e-mail or the telephone. If the work falls outside the statutory authority of an OFA, FEMA will include the work in its program cost estimate.

Potential Private Nonprofit Applicants

Following a Major Disaster Declaration, the SBA can provide disaster loans to individuals and businesses for facility restoration. PNPs that provide non-critical services (see Appendix C) must first apply for a disaster loan from the SBA for Permanent Work. Therefore, FEMA will only consider Permanent Work costs that a SBA loan will not cover for those PNPs. Emergency Work costs submitted by PNPs providing non-critical services, and both Emergency Work and

Permanent Work costs submitted by PNPs providing critical services will be considered.

Road Restoration

The Federal Highway Administration (FHWA) has authority to restore public roads under the Emergency Relief (ER) Program. Roads that are eligible for ER assistance are identified as Federal-aid routes, which include highways on the Federal-aid highway system and all other public roads not classified as local roads or rural minor collectors.

Debris removal from Federal-aid routes is considered; however emergency repairs and permanent restoration of Federal-aid routes is not considered during FEMA PA damage assessments regardless of whether the ER Program is activated. When a potential applicant is unsure if a damaged road is a Federal-aid route, the location of damage should be documented and coordinated with the State, FHWA, and/or FEMA to evaluate authorities for restoration.

The restoration of roads on U.S. Government "trust lands" falls under the authority of the Bureau of Indian Affairs (BIA) absent any other agreement. For this reason Permanent Work on these roads is not considered by FEMA. BIA, however, does not have authority for restoration of disaster related damage to roads on tribally owned lands, regardless of whether they are owned or maintained by BIA. Therefore, work and costs associated with the restoration of public roads on tribally owned lands are considered by FEMA during damage assessments.

Flood Control Works and Streams

Debris removal from streams, that meet FEMA's program eligibility requirements, is considered even where debris removal would also be eligible under the authority of the NRCS unless NRCS has provided assistance for the debris removal. FEMA and NRCS should coordinate during damage assessments to evaluate damage and maximize the effectiveness of their independent programs.

Debris removal and flood fighting activities for flood control works are considered even if they are associated with a facility that is eligible for the U.S. Army Corps of Engineers (USACE) Rehabilitation and Inspection Program (RIP), as USACE cannot reimburse applicants for flood fighting. Debris removal and flood fighting activities are not eligible if associated with flood control works under the specific authority of NRCS.

Emergency repairs or permanent restoration of flood control works that are under the authority of NRCS or USACE are not considered by FEMA during damage assessments, even if these OFAs do not have sufficient funding or do not provide assistance.

Federally Maintained Navigable Waterways

Debris removal from federally maintained navigable waterways is not considered by FEMA during damage assessments as it falls under the authority of the U.S. Coast Guard (USCG) and the USACE.

Hazardous Material Removal

EPA and USCG have the specific authority to remove hazardous materials. EPA is responsible for removing such material from inland zones and USCG is responsible for coastal zones.

Capturing Localized Impact

Capturing the impact that lost or damaged infrastructure had on the jurisdiction is an essential damage assessment task. Narrative statements that illustrate the impact of the disaster can help show whether or not the disaster is beyond the capacity of the impacted jurisdiction or State or Tribal Government, and whether supplemental Federal assistance is required to recover. Generally delivered in a series of short narratives, Impact Statements should include numbers or statistics that lend context to the disaster. These statements, included in the Governor's or Chief Executive's request, are important as the impact of a disaster will be taken into account regardless of whether or not a State or Tribal Government meets the per capita cost indicators.

At times there are extraordinary concentrations of damage that might warrant Federal assistance even if the statewide per capita indicator is not met. This may be particularly true where critical facilities are involved or where the cost of restoring damaged infrastructure in a localized area is extremely high. This is discussed in 44 CFR § 206.48 (a)(2). On the other hand, Federal assistance may not be warranted following disasters where the statewide indicator is met, but the damage is still within the State's or Tribal Government's ability to address without supplemental Federal assistance.

At times there are extraordinary concentrations of damage that might warrant Federal assistance even if the statewide per capita indicator is not met. This is particularly true where critical facilities are involved or where the cost of restoring damaged infrastructure in a localized area is extremely high.

To capture impact local, State or Tribal, and Federal damage assessment teams should document the direct and indirect consequences that damaged and destroyed infrastructure has on the community. The loss or degradation of facilities built to support normal community functions like roads, bridges, and critical infrastructure can have an immediate impact on the population and slow recovery. While this reality exists following most disasters, the question that needs to be considered when writing impact statements needs to be '*how will the unique resources of the Federal Government reduce the impact of the disaster and/or expedite recovery?*'

Hazard Mitigation

In order to recognize and encourage mitigation, FEMA considers the extent to which in-place hazard mitigation projects undertaken by State or Tribal Government and/or local governments contributed to the reduction of disaster damage for the disaster under consideration. This is discussed in 44 CFR § 206.48 (a)(4).

For example, if a State or Tribal Government can demonstrate in its disaster request that a statewide building code or other mitigation measure is likely to have reduced the cost of repairing damage from a particular disaster, this will be considered in the evaluation of the request. Impact statements developed to illustrate the positive impact that in-place mitigations measures have had may be significant in those disasters where, because of mitigation, the estimated cost of assistance falls below per capita indicators.

To help quickly capture this information as part of the damage assessment process, States or Tribal Governments and local jurisdictions are encouraged to maintain awareness of mitigation measures taken. This information should be provided to the FEMA damage assessment lead at the time of the Joint PDA and included in the Governor's or Chief Executive's request for Federal assistance.

Recent Multiple Disasters

Recent disasters can have a dramatic impact on a State or Tribal Government or jurisdiction's ability to recover. For this reason, FEMA considers any disasters that have occurred in the jurisdiction within the last 12 months. This is discussed in 44 CFR § 206.48 (a)(5).

FEMA considers Stafford Act declarations as well as declarations made by the Governor or the Chief Executive of a Tribal Government and the extent to which the State or Tribal Government has spent its own funds to support recovery.

States or Tribal Governments are encouraged to include information related to the prior disasters, including the counties or tribal jurisdictions designated in the declaration and specific expenses incurred by the State or Tribal Government, in their request for Federal assistance. While not required, additional information related to the ability of the State or Tribal Government to provide support following the disaster being assessed (e.g. the status of State or Tribal Government assistance programs) can provide further support for narrative statements made in requests for assistance.

Evaluating Damage and Impact for FEMA Individual Assistance Programs

This section is intended to promote efficient coordinated damage assessments by outlining the specific information that is used to evaluate the need for the FEMA IA programs. By incorporating the standards described in this section, emergency managers can obtain better information faster, expedite aggregation and analysis, and increase the confidence of senior leadership at every level.

Evaluating and Documenting Damage to Homes

To evaluate damage to homes, FEMA has identified several elements of information that should be collected during damage assessment including:

- Cause of damage
- Jurisdictions impacted and concentration of damage
- Types of homes
- Homeownership rate of impacted homes
- Percentage of affected households with insurance coverage appropriate to the peril
- Number of homes impacted and degree of damage
- Inaccessible communities
- Special Flood Hazard Areas, sanctioned communities, Coastal Barrier Resource System zones and other protected areas
- Primary or secondary residence
- Other relevant PDA data, such as income levels, poverty, trauma, and special needs

Understanding these factors and obtaining accurate and timely standardized information to inform decision-makers is critical to delivering appropriate assistance to impacted individuals and households. As the majority of the information required to assess impacted residents is available only at the local level, it is paramount that local emergency management practitioners understand the information required by decision-makers and work to develop systems and assessment teams capable of collecting standardized information quickly following a disaster. To support this activity, this section will provide an overview of the key factors used by FEMA to evaluate damage to residences.

Cause of Damage

The cause of damage is a foundational element of information that is used throughout the assessment process. Specific causes of damage may also be useful in determining if impacted residences are insured for the peril.

Causes of damage include:

- Earthquake
- Fire
- Flooding (include mudslide)
- Hurricane or Typhoon
- Landslide
- Severe storms
- Sewer back-up
- Utility outages and impacts
- Straight-line winds/Derecho
- Tornado
- Tsunami
- Terrorism
- Volcanic Eruption

Jurisdictions Impacted and Concentration of Damage

Capturing and mapping location information generally (e.g. jurisdictions impacted) and specifically (e.g. physical address of a damaged dwelling) can show the magnitude of the event and identify areas of concentrated damage. (Reference-"Use of the USNG" FEMA Directive 092-5). Collecting physical addresses of damaged homes according to the standardized degrees of damage (affected, minor, major, and destroyed) described below, along with the category for inaccessible homes, allows practitioners and senior officials to better understand the severity and magnitude of the event. Collecting this information prior to the Joint PDA will reduce the time required to verify and validate damage.

General location information can be used to show the severity and magnitude of the disaster. Widespread or statewide disasters can have an impact on the ability of the State or Tribal Government to provide assistance given the number of homes potentially impacted, while concentrated areas of damage may have a greater impact on a community's ability to recover without assistance.

More specific location information is helpful in organizing efforts to verify and validate information, and analyze the impact of the disaster. To support standard reporting information, locals should collect this information on the Street Sheet (Appendix H), or similar form used by local, State and Tribal Government for the same purpose.

Types of Homes

When identifying damaged structures, assessment teams should note whether the structure is a single family residence, a multi-family residence or a manufactured home.

- **Single family residence:** Any residence designed to accommodate a single family that is built using conventional building methods. This includes modular homes factory-built to uniform construction code standards and assembled on site.
- **Multi-Family residence:** Any residence designed to accommodate more than one family that is built using conventional building methods. Each unit should have a separate entrance, bathroom, kitchen, and living area. This may include duplexes, condominiums, and apartment buildings.
- **Manufactured homes:** a structure, transportable in one or more sections, which in the traveling mode is 8 body feet or more in width or 40 body feet or more in length or which when

erected on-site is 320 or more square feet, and which is built on a permanent chassis and designed to be used as a dwelling with or without a permanent foundation when connected to the required utilities, and includes the plumbing, heating, air-conditioning, and electrical systems contained in the structure. (24 CFR 3280.2 and 24 CFR 3285.5)

Information should be provided on the common types of construction in the impacted area, such as slab on grade, basements, and the number of manufactured home parks impacted. This information can be helpful in illustrating the length of time that may be necessary for repairs and potential impacts on the community.

Homeownership Rates of Impacted Homes

The ownership and occupancy status for impacted residences are important as factors in estimating the cost of potential FEMA assistance to the community. Under the Individuals and Households Program (IHP), only a homeowner's primary residence is eligible for home repair and personal property assistance, while renters may be eligible for temporary rental assistance and Other Needs Assistance (ONA). FEMA does not provide assistance for damage to secondary residences and outbuildings. The information collected to inform decision-making includes:

Ownership Status

- Owner
- Renter

Occupancy Status

- Primary residence: A permanent residence that is occupied more than six months out of the year.
- Secondary residence: A vacation home, home under construction, or home occupied less than six months out of the year. Not considered/assessed during damage assessments.
- Vacant property: Not considered/assessed during damage assessments.

FEMA uses U.S. Census Bureau information to estimate demographic, income, homeownership, occupancy, and insurance trends and identify areas of potential greater need. If local, State, or Tribal Governments would like FEMA to consider more localized or more recently updated information, that information should be provided to FEMA before the conclusion of the Joint PDA. If current data does not exist or does not appear to be correct, Joint PDA assessment teams may be used to collect or verify critical elements of information from residents or other knowledgeable local sources.

Percentage of Impacted Households with Insurance Coverage Appropriate to the Peril

FEMA assistance cannot duplicate assistance available through insurance. In order to estimate the level of applicable insurance coverage, the State should provide, and FEMA will utilize the best available information.

State Insurance Commissions, recent U.S. Census data, local officials, and impacted residents themselves can be useful in determining whether an impacted area or group of homes are insured. When damage may be covered under the NFIP FEMA will coordinate with program administrators within the Flood Insurance and Mitigation Administration when evaluating the number of insured homes. FEMA may be able to provide information on the number of households located in a special flood hazard area (SFHA) that have a flood insurance requirement from a previous disaster.

Disaster survivors in a SFHA that have previously received assistance and have not maintained their required flood insurance are ineligible for flood insurable real and personal property assistance from FEMA in future flooding disasters, except for non-insurable losses such as private bridges, wells, septic, etc. Additionally, if flooding has impacted homes in a community that does not participate in the NFIP, FEMA is prohibited from providing assistance to residents in the identified floodplain for damage that would have otherwise been available through the program. FEMA will coordinate with States or Tribal Governments to identify and communicate the status of non-participating communities at the outset of the damage assessment process.

Generally, insurance that may cover disaster related perils include:

- Homeowners insurance
- Condominium insurance
- Insurance for manufactured homes
- Flood insurance
- Renters insurance
- Sewer back-up rider
- Earthquake rider
- Landside rider
- Subsidence rider
- Tornado rider
- Structural only insurance
- Fire only insurance

It is important to note that FEMA may assist with some items not covered under many of these policies and riders, such as damaged septic systems. A discussion of the disaster type and the types of damage covered by various insurance policies should occur with assessment teams prior to conducting field assessments. This will help assessment team members to more confidently and consistently identify residences that are insured for the peril and increase the quality of information provided to decision-makers. The *IA Insurance Matrix* in the Appendix F may be useful in explaining assistance available through various insurance policies and riders.

Example Impact Statement - Homeownership:

While statistical information provided by the United States Census Bureau indicates that homeownership for Washington County is less than 40 percent, the homeownership rate in the area along the Washington River impacted by recent flooding is much higher. Local emergency management has stated that many of these residents have lived in the homes for multiple generations, and may be uninsured or underinsured since they do not have a mortgage requirement for maintaining insurance on the property. Based upon this input, it is estimated that insurance coverage for the affected homes is approximately 25%. As homeowners without insurance, there is likely to be high eligibility rate for FEMA's IHP in this county. Additionally, the local emergency manager stated that up to 10% of the impacted homes along the Washington River in this county are not primary residences and are used by residents that spend more than half their year in other parts of the county. These residents are unlikely to be eligible for FEMA assistance.

When insurance data is available, it generally will only be available on whether a residence is insured. If a potential underinsured population is present, then information on that population may be included in narrative Impact Statements. An example of an underinsured population may be homeowners impacted by an earthquake who have high deductibles. Additionally, in areas where property values have increased over time, longtime residents may not have purchased additional coverage and are more likely to be underinsured. Depending on the level of damage and amount of the insurance award, some of these disaster survivors may be eligible for FEMA's IHP assistance.

Number of Homes Impacted and Degree of Damage

In order to standardize damage assessment vocabulary, FEMA has established four categories to describe damage to homes; Destroyed, Major, Minor, and Affected with an Inaccessible category for the homes that cannot be reached for assessment. When assigning damage levels, it is important to recognize that FEMA assistance is not intended to restore damaged property to its pre-disaster condition but rather to provide survivors with a safe, sanitary and functional dwelling from which they can continue their recovery. The damage categories defined below closely correlate to assistance available through FEMA's IHP. They are not intended to align with other types of local assessments such as red or yellow tagging of damaged homes. FEMA's damage levels and criteria should be used for all damage assessment information reported to FEMA and should be assigned to residences independently of other assessments that may be necessary at the local or State or Tribal level.

Surveys conducted to assess damage to individual homes should be conducted quickly and focus on collecting the observable information necessary to assign a final damage level

All determinations should be based on viewed damage and focus only on disaster-related damage. Damage not caused by the disaster event should not be included when determining the level of damage, as it is not eligible for assistance through the FEMA's IHP. For multi-family buildings such as apartment buildings, only report visible damage. For example, do not assume all units in a building are damaged if the roof is missing over only a few units.

Unlike an insurance company, the purpose of the PDA is not to document all damage. Surveys conducted to assess damage to individual homes should be conducted quickly and focus on collecting the observable information necessary to assign a damage level Teams should not become preoccupied with property value, individual items of personal property, or with assessing damage to outbuildings, fences, unattached garages, recreation rooms, or other non-essential areas of the home. These items will not influence the damage level. However, narrative statements submitted in the declaration request may include examples of these types of damage to illustrate the severity and magnitude of the disaster. Narrative statements should include other variables that may further impact the homeowner's recovery, such as how long the water stayed in the home, the materials used to build the home, and the presence of contaminants in flood water (fuel oil, sewage, debris, etc.) if they present a health or safety hazard that renders the home uninhabitable. However, these variables should not influence the assigned damage levels.

Photographs taken by damage assessment teams can be very useful to FEMA in verifying damage determinations. Assessment teams are encouraged to photograph damage that was used to assign damage levels (e.g. close ups of waterlines on residences as opposed to landscapes taken from the street). Local, State and Tribal Government damage assessment teams are encouraged to photograph homes evaluated as major or destroyed, as in most circumstances

FEMA staff will be required to take photographs of damaged or destroyed dwellings.

Inaccessible: Conventionally built structures and manufactured homes

Homes located on the flooded road are generally counted as inaccessible. For those residences that have damage that can be clearly viewed from a safe vantage point, a damage level should also be assigned.

This group includes homes that are inaccessible by reasonable means, due to disaster-related loss of access (e.g. bridge out, road flooded or blocked by landslide, mudslide, severe erosion, washed out, etc.). If the homes can safely be reached by another route, they should not be considered inaccessible. Typically, inaccessible is used to denote homes that cannot be accessed or viewed at the time of the assessment. If the damage is viewable, it is preferable to assign the appropriate damage category. Individual apartment units that are not habitable due to damage to lower floors should also be included in the assessment.

Basement Damage Assessment Methods- For the purpose of recording flood or sewer back up damage, a finished basement is defined as one which contains any of the following essential rooms: Occupied bedrooms, bathrooms, kitchen and/or living room. During the assessment process, the level of damage will be recorded using the same depth of water level measurements shown for flood assessment contained within Major and Minor. Recreational and other common areas of the basement are non-essential living space, and assessments and damage should be evaluated as though the basement is unfinished.

Destroyed: Conventionally built structures

NOTE: One photo per dwelling is requested in this category.

The residence is a total loss, or damaged to such an extent that repair is not feasible.
Any of the following factors may constitute a status of destroyed:

- Complete failure of two or more major structural components - e.g. collapse of basement walls, foundation, load-bearing walls, or roof
- Only foundation remains
- A residence that is in imminent threat of collapse because of disaster-related damage or confirmed imminent danger - e.g. impending landslides, mudslides, or sinkholes.

The foundation and two or more walls of this residence have failed.

This residence has collapsed.

The roof and walls of this home have been compromised and it is off its foundation.

Major: Conventionally built structures

NOTE: One photo per dwelling is requested in this category.

A residence may be categorized as having major damage when it has sustained significant structural damage and requires extensive repairs. Some examples of major damage include:

- Failure or partial failure to structural elements of the roof to include rafters, ceiling joists, ridge boards, etc.
- Failure or partial failure to structural elements of the walls to include framing, sheathing, etc.
- Failure or partial failure to foundation to include crumbling, bulging, collapsing, horizontal cracks of more than two inches, and shifting of the residence on the foundation of more than six inches
- Residences with a water line 18 inches above the floor in an essential living space, a water line above the electrical outlets, or a water line on the first floor or when basement is completely full

Based on this view, at least 12 units should be classified as having major damage. All units in an apartment building will not necessarily have the same damage level.

The visible water line on the residence is higher than 18 inches on the first floor.

The structural elements of this wall have failed.

Minor: Conventionally built structures

Minor damage encompasses a wide range of damage that does not affect the structural integrity of the residence. Some examples of minor damage include:

- Nonstructural damage to roof components over essential living space to include large areas of shingles e.g. roof covering, fascia board, soffit, flashing, and skylight
- Non structural damage to the interior wall components to include drywall, insulation; exterior components to include house wrap, missing doors, broken window framings; or substantial loss of exterior covering, such as missing siding, vinyl, stucco, etc.
- Multiple small vertical cracks in the foundation
- Damage to chimney to include, tilting, fallen, cracks, or separated from the residence
- Damage to or submersion of mechanical components, e.g. furnace, boiler, water heater, HVAC, electrical panel, pressure tanks or well pressure switch, etc.
- Water line less than 18 inches in an essential living space
- Damage or disaster related contamination to a private well or septic system

This residence has nonstructural damage to the roof and broken windows.

The roof on this residence has been tarp covered after it lost some shingles.

Affected: Conventionally built structures

This category includes residences with minimal damage to the exterior of the home and non-essential basements. Residents can remain in the structure. Some examples of affected damage include:

- Partial missing shingles or siding (non-continuous/sporadic), home kept roof structure intact
- Cosmetic damage such as paint discoloration or loose siding
- Broken screens
- Gutter damage and debris
- Damage to an attached structure such as a porch, carport, garage, or outbuilding not for commercial use
- Damage to landscaping, retaining walls, or downed trees that do not affect access to the residence or has not collapse into residence
- Any water line in the crawl space or basement when essential living space or mechanical components are not damaged or submerged

Damage to this soffit represents nonstructural damage to the roof.

Only an outbuilding has sustained damage.

The residence has gutter and roof damage. The tree does not impact the damage level of the home.

Destroyed: Manufactured home

NOTE: One photo per dwelling is requested in this category.

The residence is a total loss. Any one of the following factors may constitute a status of destroyed regardless of the cause of damage due by disaster:

- The residence's frame is bent, twisted, or otherwise compromised
- The residence is missing the roof covering and the structural ribbing has collapsed for the majority of the roof system

The manufactured home is missing the roof and at least two walls.

The frame of the manufactured home has been bent.

This manufactured home is missing the roof covering, and at least one wall has been compromised.

Major: Manufactured home

NOTE: One photo per dwelling is requested in this category

The residence has sustained structural or significant damage that requires extensive repairs.
Any one of the following may constitute major damage:

- The residence has been displaced from the foundation, block or piers, and other structural components have been damaged
- Water has come into contact with the floor system to include belly board insulation, ductwork, and subflooring

Although much of the roof is missing, the structural ribbing of the roof system is still intact.

Visible water line above the floor system.

Minor: Manufactured home

The residence is damaged and requires minimal repairs. Some of the items that determine minor damage are listed below:

- There is no structural damage to the residence and it has not been displaced from the foundation
- Nonstructural components have sustained damage - e.g. windows, doors, wall coverings, roof, bottom board insulation, ductwork, and/or utility hook up
- Water line is below the floor system
- HVAC interior mechanical unit is impacted

A portion of the roof has been damaged.

The visible water line is below the floor system.

Nonstructural components of one wall have sustained damage.

Affected: Manufactured home

This category includes residences with cosmetic damage only. It also applies to residences with damage to a porch, carport, garage, and/or an outbuilding.

The only damage missing the skirting.

There is no visible water line and only skirting is missing or bent.

Estimated Cost of Assistance

In order to estimate the cost of the disaster and the State or Tribal Government cost share for FEMA Other Needs Assistance (ONA), if the incident were to be declared, FEMA will calculate a probable assistance cost estimate at the conclusion of the Joint IA PDA. This estimated cost of the disaster is based on the uninsured damage to homes collected during the PDA and includes the following:

- Historic program costs for repair or replacement assistance for uninsured owner occupied primary residences for each of the four dwellings assessment levels -affected, minor, major, destroyed
- Cost of providing temporary housing assistance based on the U.S. Department of Housing and Urban Development (HUD) fair market rent for the area of impacted owners and renters for each of the four dwelling assessment levels - affected, minor, major, destroyed and for inaccessible areas
- Historic program costs for ONA awards

Red Cross Damage or Disaster Assessment (DA) Information

The American Red Cross (ARC) conducts Damage Assessments to proactively assess what is required to deliver the organization's assistance program and estimated cost. While the criteria and methods used by the ARC in conducting these Damage Assessments are tailored to their programs, they generally align to the criteria used by FEMA (described in *this manual*), the information collected by the ARC can help emergency managers to develop an early understanding of the damage impact.

Emergency managers should coordinate with ARC Government or Tribal Liaisons to gather information similar to chart below to develop awareness and potentially identify areas where local damage assessments are needed.

Red Cross Disaster Assessment information by county:

Jurisdiction	Destroyed	Major	Minor	Affected	County Total

Note: Financial information related to assistance provided by nongovernmental organizations including the estimated cost of the operation may be sensitive and is not required for damage assessments.

Information Collected to Document Impact

The impact of disasters and the ability of the State or Tribal Government and affected jurisdictions to support recovery can vary greatly and cannot often be illustrated solely by the number of destroyed homes. For this reason, a variety of disaster related information should be collected to lend substance context to requests for Stafford Act assistance. This information, provided by emergency managers and nongovernmental organizations or through the use of existing databases, should illustrate the overall impact the disaster has had, and underscore how the unique resources of the Federal Government are required to support disaster survivors. This information will develop over time, but emergency managers are encouraged to begin collecting it early on in the process to ensure it is available to be included in the request for assistance. To support the identification of information that may be used to develop these impact statements, and to illustrate how it can be used to lend context to other information included in the declaration request, examples have been provided throughout this section.

Narrative Impact Statements should illustrate the overall impact that the disaster has had and underscore how the unique resources of the Federal Government are required to support disaster survivors.

There is no established threshold or indicator associated with FEMA IA; however, factors considered when evaluating the need for the IA program are discussed in the 44 CFR. Among these factors are five areas that should be taken into account as local, States or Tribal Governments are describing the impact of a disaster:

1. Concentration of damage
2. Trauma (deaths and injuries, disruption of normal community functions, emergency needs, etc.)
3. Impact on populations with greater need
4. Ability of local, State or Tribal Government, and voluntary organization programs to address needs
5. Uninsured/underinsured home and personal property losses

This section will examine each factor and discuss the kind of information that can be used to illustrate damage and impact. As information used to illustrate impact may come from a variety of sources, emergency managers are encouraged to coordinate with governmental and nongovernmental service providers prior to a disaster to discuss how they can support damage assessment efforts with reports or specific information.

Concentration of Damage

The concentration of damage to individuals is considered when evaluating requests for the FEMA IA program. High concentrations of damage may indicate a greater need for Federal

assistance in some areas. However, FEMA also recognizes that widespread damage throughout much of a State may be more difficult for the State to respond to.

> Example statement on concentration:
>
> The concentration of damage in Adams county (100 destroyed, 75 major, 200 minor, and 300 affected) will have a dramatic impact on recovery, as the number of people requiring assistance will easily overwhelm the existing support network in the area. Federal assistance provided through FEMA's IA program would reduce the local burden and concerns related to the future stability of the community.

Trauma

Generally, trauma considered when evaluating requests for the FEMA IA program includes deaths and injuries, disruptions to normal community functions, and extended power or utility outages. As trauma is discussed, preparers are encouraged to consider the ability of IA program components to address the need. Incorporate these findings in your impact statement.

Disaster Related Deaths and Injuries

The number of individuals who are missing, injured, or deceased due to a disaster may indicate higher levels of trauma and underscore the need for supplemental Federal disaster assistance such as crisis counseling. States or Tribal Governments are encouraged to capture and report disaster-related fatalities and injuries and include them in impact statements developed for the declaration request.

Disruption of Normal Community Functions

Disasters can have dramatic impact on infrastructure that supports normal community functions. State or Tribal Governments and local jurisdictions are encouraged to outline how damaged or destroyed infrastructure has impacted commerce, disrupted normal life in the community, and/or will complicate the recovery of individuals that depended on access. The following types of impacts to a community's infrastructure may adversely affect a population's ability to reside within the community and should be considered when preparing narrative impact statements included in the declaration request for Federal assistance.

- Loss of roads or bridges that serve as the sole/primary transportation route in a community
- Impact to water or sanitary treatment facilities
- Impact to schools, government offices, and other important public infrastructure

- Impact to public transportation, including busses, rail, and accessible transportation services
- Impact to supply of power and water to residential homes

Example impact statement on disruption of community functions:

Damage to the State Rt. 5 Bridge in Polk County has impacted the daily commute of more than 2,500 residents and may have an aggravating effect on the local tourist economy as the community recovers. The County Engineer estimates that the bridge will take more than a year to repair. Assistance available through the FEMA IA program and the SBA disaster loan program can help to alleviate anticipated economic injury and its impact on rebuilding damaged homes.

Transportation infrastructure or utility disruptions may render housing uninhabitable or inaccessible. Such conditions may affect the delivery of life sustaining commodities, provision of emergency services, ability to shelter in place, and efforts to rebuild. The local, State or Tribal Government may provide information regarding the impact on transportation infrastructure and utilities of a period greater than 72 hours. Examples include closed roads and bridges, impacts to public transportation such as a bus system, and extended utility outages. To the extent known, information should be provided on the length of time for critical infrastructure and utilities to be restored.

Impact to populations with greater need

The demographics of the disaster impacted population may be helpful in identifying areas of increased need that require a more robust response from the State or Tribal and Federal Government. This is important as disasters can disproportionately affect existing vulnerable populations and impact recovery. As part of the damage assessment process, FEMA and the State or Tribal Government should collect information related to and consider demographics of impacted communities. The following data points available from the U.S. and Tribal Government Census Bureau can be used by States or Tribal Governments to help illustrate impact:

- The percentage of the population living under poverty thresholds
- The percentage of the population already receiving government assistance such as Supplemental Security Income and Supplemental Nutrition Assistance Program Benefits
- The pre-disaster unemployment rate
- The percentage of the population that is 65 years and older
- The percentage of the population 18 years and younger

- The percentage of the population with a disability
- The percentage of the population who speak a language other than English and speak English less than "very well"
- Any unique considerations regarding American Indian and Alaskan Native tribal populations that may not be reflected in the U.S. Census Bureau data

Example impact statement regarding demographics:

US Census information shows that the population over 65 in northwestern Washington County is more than twice that of state and national averages. Given the high percentage of these residents living on fixed incomes, there is concern that the cost of recovery will have a serious and potentially life-long impact on homeowners if Federal assistance is not made available.

Local, State or Tribal Government

A variety of factors can affect the ability of even the most well-resourced local, State or Tribal Government to provide assistance following a disaster. Understanding this, State or Tribal Governments are encouraged to discuss available governmental and nongovernmental resources available to support recovery, and specifically discuss limiting factors that may impact the recovery of disaster survivors. This section will outline information that local, States or Tribal Governments generally use to show that current capabilities are not adequate to address disaster related needs without the support of the Federal Government.

State or Tribal Government Disaster Assistance Programs

State and Tribal Governments have a responsibility to take care of their citizens. In furtherance of that responsibility, some States and Tribal Governments have developed assistance programs. These programs vary in the amount and type of assistance available, requirements, and funding sources. When a State or Tribal disaster assistance program may be available to support disaster related unmet needs, narrative statements should be included in the declaration request to outline the assistance that will be provided and how/if the program may be applied to address needs unmet by the FEMA IA programs. As an example, a State or Tribal Government program may have in place a self-funded assistance program, specifically related to disaster assistance or generally available for housing repair or other needs that could be utilized.

Assistance from Voluntary Organizations

Voluntary, faith and community-based organizations will often provide support to disaster survivors following a disaster. Needs identified by voluntary organizations may be helpful in illustrating the scale and magnitude of the event, and limitations that impact their ability to address survivor needs may highlight the need for Stafford Act assistance. It is important to note that financial information related to assistance provided by NGOs including the overall cost of the operation may be sensitive and is not required for damage assessments.

> Example impact statement regarding voluntary organization support:
>
> The response of voluntary organizations to the feeding and sheltering needs of McHenry County has been robust, but there is concern that high profile disasters on the Gulf coast will have a negative impact on philanthropic giving and the availability of trained volunteers to support recovery. This will dramatically affect the ability of impacted low-income homeowners to rebuild damaged homes without Federal disaster assistance.

Emergency Sheltering Information – Information related to congregate and non-congregate (i.e. shelter with family, dorms, ships, tents) care sheltering operations can help to estimate the number of people displaced from their homes and serve as a key gauge that can be used to illustrate the scale and magnitude of the disaster. Activity related to emergency sheltering should be included in the declaration request for assistance, especially in cases when shelters are required for more than 72 hours and when displaced residents are unable to return to their homes due to damage sustained in the disaster. Information that can be helpful in developing these statements includes:

- Location of each shelter
- Daily overnight population for each shelter
- Number of schools closed because facility is being used as a shelter
- Number of residents provided with hotel rooms as part of a sheltering program
- Support provided by government and partners to assist with emergency sheltering
- Assistance and services required to support people with access and functional needs in emergency shelters
- Location and population of shelters established to support household pets

Information related to individual shelters described in the table below:

Jurisdiction	Shelter Name	Shelter Location	Date Opened	Date Closed	Peak Population	Current population

Mass Care/Emergency Assistance-Feeding Operations Information – Can be helpful in illustrating the scale and scope of the disaster especially when government assistance is required or feeding operations are maintained for more than 72 hours. Information that can be used to describe activity and impact may include:

- Number and location of fixed feeding sites (by county)
- Number of vehicles providing mobile feeding
- Jurisdictions being supported by mobile feeding
- Number of meals served
- Partners involved in feeding operations

Individual Client Assistance (Client Casework) Information – State social service agencies and disaster service organizations, like the ARC, will routinely open cases following a disaster to support the immediate needs of survivors. This information can be helpful in illustrating the disaster impact to survivors in a community, and can be used to illustrate the overall scale and magnitude of the disaster. Information that can be used to describe activity and impact may include:

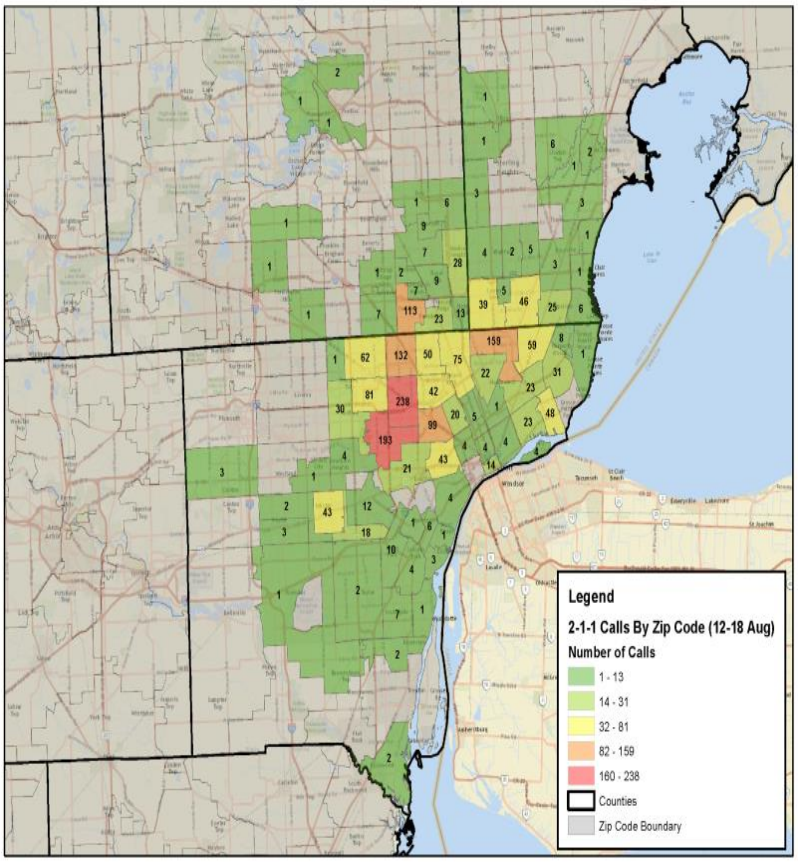
- Agency or organization providing assistance
- Number of cases opened
- Number of clients served in cases
- Number of cases closed
- Number of health services contacts
- Number of mental health contacts
- Types of assistance requested
- Presence of resources to meet the needs of clients
- Number of cases expected to be referred for substantive repair or rebuild assistance
- Number of cases with unmet needs

Information Related to Distribution – (Distribution of Emergency Supplies) – The quantity and type of assistance provided through distribution can be helpful in illustrating the scale and magnitude of the disaster. This is especially true following disasters like urban basement flooding where damage assessment may be difficult, when distribution is used to address critical life-saving/sustaining needs (e.g. distribution of shelf-stable meals and water, or health related distribution), or when government assistance is necessary to support distribution of emergency supplies. Information that can be used to describe activity and impact may include:

- Distribution used to address a critical life-saving or sustaining need
- Durable medical equipment
- General categories of items (e.g. cleanup kits, shelf-stable meals, medicine, etc.)
- Government assistance required
- Jurisdictions served by distribution
- Trend line of the volumes of distributed items by type

Information Referral Services – Information referral services like 2-1-1 and 3-1-1 are frequently used by people dependent on the social service network and may serve as a key source of information related to the needs of vulnerable populations. Increased call volume and the general type of services requested may also help to illustrate the scale and magnitude of the disaster and assist with identifying areas of unmet need. Information that can be used to describe activity and impact may include:

- Number of calls received following the disaster as compared to average steady-state call volume
- Zip codes where calls were received from
- General types of assistance requested
- The presence or absence of a service provider to refer callers to for their categories of need



Uninsured/Underinsured Home and Personal Property Losses

Discussed in much more detail in pages 45-60 above, capturing an accurate picture of the number of uninsured homes is critical to the damage assessment process. Large numbers of damaged uninsured homes or damaged homes without insurance applicable to the peril, may suggest a greater need for supplemental Federal assistance. Generally this information is developed in conjunction with State insurance commissions or through their avenues such as GIS or CENSUS information.

To protect the personally identifiable information of impacted individuals and the proprietary information held by the insurance industry, insurance information is typically aggregated at the county, census block, or zip code level.

Other Relevant Impact Data

When the factors addressed in the 44 CFR do not fully capture the impact of a disaster, the State or Tribal Government requesting Stafford Act assistance may use other impact information that better describes the situation and the need for Federal assistance. Information regularly used by States and Tribal Government includes:

- Evacuations - estimated duration
- Lack of building materials
- Contractor shortages
- Extreme weather conditions and seasonal shifts that may impact recovery
- The loss of low-cost or subsidized housing
- Economic Impact created by displaced employees or damaged businesses
- Disaster-Related Unemployment
- Cumulative Effect of Recent Disasters

Example impact statement regarding other relevant information:

Based on field assessments and self-reporting in Franklin County, it is estimated that nearly 25,000 furnaces have been damaged or destroyed. Given the short window of time available before the onset of winter (average low temperatures in October will dip below freezing), there is concern that residents will be able to make necessary repairs without Federal assistance.

Damage Assessment Methods

Efficient damage assessments require an understanding of the different methods that can be used to collect damage and impact information. While the information that is gathered to assess damage and evaluate the impact of a disaster is relatively simple and does not change, a one dimensional approach to collection may increase the time required to assess damage or limit the quality of information developed.

The assessment methods used will directly affect staffing and timeline requirements, so care should be taken to select methods that can most efficiently deliver information needed to make disaster declaration decisions. This requires emergency managers to employ methods that balance speed with quality, and to constantly consider information that can be used to verify or validate the ground-level information being obtained.

When evaluating what methods will be used to assess damage and impact, emergency managers should consider the information and timeline requirements and options available. Often, a phased approach that leverages the utility of various methodologies will be used in order to quickly assess and then refine damage and impact information. For instance, an emergency manager may choose to use a phone bank or internet-based self-reporting system to collect initial IA damage information from residents before sending field assessment teams into the field to verify the information provided.

By outlining the different methods that can be used to assess damage and impact after a disaster and the factors that influence how and when these methods may be employed, this section will assist emergency managers in developing and implementing damage assessment strategies capable of efficiently delivering accurate damage and impact information to decision makers.

Factors That Influence Assessment Methods Used

Damage assessment methodology should adapt to information collection verification and validation requirements. Major factors that influence the methodology employed include incident type, program being evaluated, and assessment phase.

Incident Types

Different types of incidents may require different approaches and timelines. While disasters like fires, tornadoes, and hurricanes often produce readily visible damage that can quickly be assessed using windshield assessments, fly-overs, or geospatial analysis, other disasters like basement flooding may require more time and resource intensive door-to-door assessments.

Programmatic Requirements

PA and IA programmatic damage assessment requirements also influence how disaster damage is assessed. While information required to make damage determinations for the FEMA IA programs may be able to be gathered quickly with minimal contact with survivors, information and supporting documents needed to accurately assess damage and estimate cost for the FEMA

PA program will often require more in-depth site assessments and direct contact with potential applicants. This may limit the effectiveness of certain damage assessment methods or require that they be used in conjunction with others capable of gathering more granular information.

Assessment Phase and Timeline Requirements

The assessment phase may influence the methods used to collect damage and impact information. This is easily understood when one considers that methods employed and the timeline required to identify and assess damage during the local assessment phase will differ from those used to validate the same during the Joint PDA. While the methods used may differ, emergency managers and assessment teams at every level should take into account the actions and information requirements of each phase when developing plans, training staff, and conducting damage assessments.

Typical Damage and Impact Assessment Methods

Self-Reporting

Self-reporting is primarily conducted at the local or county level to develop initial damage information and may use one or more intake systems including phone banks, web-based forms linked to existing local webpages, paper forms, and mobile applications. This method can be an extremely efficient way to gather initial damage information from survivors and potential applicants when damage is not easily seen, when a large number of impacted homes will challenge assessments, or when damage is extremely widespread. Initial damage information gathered through self-reporting methods will need to be verified by local assessment teams before final numbers are delivered to the State or Tribal Government. This assessment method requires forethought, effective communication, and the development of systems necessary to intake information, but may dramatically decrease the amount of time required to conduct initial damage assessments.

Benefit: Leverages community and potential applicants to rapidly conduct initial damage assessments and can be tailored to deliver more granular information

Drawback: Information will need to be confirmed and intake systems must be in place at the time of the disaster to be effective

PA damage reported by potential applicants to local or county emergency management officials will need to be confirmed before delivery to the State or Tribal Government. This will give emergency managers an opportunity to ensure that damage and cost are adequately captured and that supporting documents needed during State or Tribal Government and Federal verification and validation efforts are prepared.

Self-reporting IA methods are often employed by local or county emergency managers to quickly develop initial damage information. When aggregated, this information may be helpful in identifying areas of concentrated or heavy damage. Self-reporting systems should be designed

carefully so that the information is collected in a way that recognizes that users are not familiar with the standardized FEMA assessment criteria. Residents reporting damage are largely accurate about the information they provide, however, they will often state that they have "major damage" if given only the option of the four standard damage categories (Affected, Minor, Major, Destroyed). Therefore initial damage reports will need to be confirmed in some manner before being delivered to the State or Tribal Government. While it may not be feasible to confirm all reported damage information, local assessment teams should confirm damage to homes categorized as Major or Destroyed and sample homes categorized as Minor and Affected to ensure accuracy. Assessment teams confirming damage should take photographs of damage used to assess a home as Major or Destroyed to reduce the time required to verify and/or validate information.

Fly-Over

Fly-over surveys are an efficient way to assess damage and are used to collect information when damage is visible from the air, when rapid assessments are required, and/or when damage is remote or not easily accessed. Because this assessment method may reduce the quality of information collected, it is generally associated with disasters where damage is obvious and for initial assessments where information will be confirmed with ground-level assessments.

Benefit: Allows rapid assessment of damage

Drawback: Damage must be easily observable from the air and the quality of information may not be adequate to make IA damage assessments or estimate the cost of PA projects without follow-up

Because PA damage assessments require a considerable amount of site-level information, fly-over surveys may only be appropriate for specific categories of work where damage information and cost estimates can be developed from the air. More commonly, information developed from the air is combined with site-level information. Assessment teams conducting fly-overs should take photographs of infrastructure damage to leverage verification and validation efforts.

Fly-over surveys may be used to collect IA damage information when damage is visible from the air. Typically, damaged homes are counted in clusters (e.g. a cluster may equal 5 to 100 homes depending on the magnitude of the disaster, speed of the flight, and the density of the dwellings). It is strongly suggested that some "on the ground verification" be done to confirm damage reported during the fly-over and to collect anecdotal information related to insurance coverage, occupancy type (owner or renter), and other significant information to support census information collected to develop impact statements. Assessment teams conducting fly-over surveys should take photographs of damage clusters containing homes assessed as Major or Destroyed to reduce the time required to verify and/or validate information.

Windshield Surveys

Windshield surveys are an efficient way to assess damage from a vehicle and are used to collect

field-level information when damage is visible from the road. This assessment method can be used to quickly assess, and validate damage but may reduce the quality of information collected for certain types of incidents and PA categories of work.

Benefit: Efficient field-level assessment method

Drawback: Damage must be easily observable

Because PA damage assessments require a considerable amount of site-level information, windshield surveys may only be appropriate for specific categories of work where damage information and cost estimates can be developed from a vehicle. Local PA assessment teams conducting windshield surveys should take photographs of damage to reduce the time required to verify and validate information. In this case, windshield assessments can leverage other assessment methods (e.g. site assessments) to more efficiently develop required information.

Windshield surveys are often used during IA damage assessment to assess, verify, and validate damage. Assessment teams will record observed damage while driving through impacted areas, periodically stopping to conduct interviews to provide anecdotal evidence related to insurance coverage, occupancy type (owner or renter), and other significant information to support census information collected to develop impact statements. Assessment teams conducting windshield surveys should take photographs of damage used to document a home as Major or Destroyed to reduce the time required to verify and/or validate information. This process is repeated street-by-street for the team's assigned area.

Door-To-Door and Site Assessments

Door-to-door and site assessments are regularly used to collect field-level information needed to assess damage for the IA and PA programs. This assessment method is labor intensive but highly accurate and is generally used when damage is less visible or when a higher degree of confidence in the information is required.

Benefit: highly accurate

Drawback: time and labor intensive

Because PA damage assessments require a considerable amount of site-level information, Local PA damage assessment teams will almost always need to conduct site assessments. The teams conducting site assessments should take photographs of damage to support restoration work and cost estimates and reduce the time required to verify and validate information. If the information, photographs, and supporting documentation developed during these local assessments is adequate to remotely verify and validate damage, program requirements, and cost, local, State or Tribal Government and Federal teams may only be required to conduct site assessments for large projects (adjusted annually) and/or projects that have environmental or historic significance.

IA damage assessment teams will often use door-to-door assessments during appeal PDAs or when damage cannot otherwise be assessed, verified, or validated due to the type of damage. Assessment teams conducting door-to-door assessments should take photographs of damage used

to assess a home as Major or Destroyed to reduce the time required to verify and/or validate information. It is important to note that assessment teams are not required to enter the home during door-to-door assessments – typically information needed to make a damage determination can be gained from the occupant or viewed from outside the home. Teams should only enter damaged dwellings as a last resort, and should do so only with the permission of the occupant and after safety-considerations are evaluated by the team.

Geospatial Analysis and Geographic Information Systems

Geospatial analysis and Geographic Information Systems (GIS) play important roles throughout the damage assessment process. Geospatial analysis uses existing and post event satellite or fly-over imagery and data to assess damage and is typically used to expedite damage assessments when more traditional methods will unnecessarily protract the time required to assess damage. GIS can be used throughout the process to describe damage, perform analysis, and illustrate impact. These tools can greatly improve the efficiency and effectiveness of damage assessments; however, the capacity must be developed prior to a disaster.

Benefit: Allows rapid assessment of damage and enhances analysis

Drawback: GIS capabilities vary by State or Tribal Government and jurisdiction and Federal resources are often required for geospatial analysis. It can be difficult to discern specific damage details from GIS imagery.

GIS datasets can be a great asset during both IA and PA damage assessments, giving emergency managers the ability to analyze damage against information available from other sources (e.g. critical infrastructure networks, hazards, demographic information, and historic damage). Geospatial analysis provides a tremendous asset that can be used to quickly identify and assess damaged homes and infrastructure in the wake of a disaster. These resources will be discussed further in the *Integration of Geospatial Analysis and Technology* section. Additional information is available in FEMA publication 9321.1-PR Remote Sensing in Federal Disaster Operations for procedures.

Modeling

Predictive modeling can be used in a variety of ways to estimate probable damage. These products are produced by a number of universities, private sector firms, and Federal agencies including US Geological Survey, National Oceanic and Atmospheric Administration, National Hurricane Center, National Weather Service, USACE, and FEMA. Predictive modeling can be used to get an approximation of the extent and location of damage in large events. While damage will need to be confirmed in most cases, modeling may be helpful in identifying areas of probable damage.

Benefit: Allows rapid identification of probable damage areas

Drawback: Federal resources are often required to develop models and damage will need to be confirmed through ground-level assessments in most cases

Predictive modeling can be used to rapidly predict damage that is likely to be or likely to have been caused by a disaster and can be used to leverage resources during both IA and PA damage assessments. Common modeling products used include hurricane prediction maps (wind speed, rainfall, and storm surge), earthquake shake maps, tornado track maps, and Hazards United States (HAZUS).

Integration of Geospatial Analysis and Technology

Geospatial analysis and technology supports all phases of the damage assessment process and program implementation. Such analysis and other technical methods of gathering data related to disaster impacts can be used to augment damage assessment teams at all levels. Remote sensing data collection and analysis can be focused on areas with the most impact and visibly discernable damage, while ground teams could be directed to areas with lesser impacts that would require in-person assessments to make a damage determination. By using a combination of geospatial analysis and ground teams, more of the impacted area can be assessed at a faster rate than traditional ground team methods. In some instances the geospatial damage assessment may be capable of replacing ground assessment teams, especially in circumstances when damage assessments need to be conducted on a timeline that would not allow the use of traditional ground methods.

Geospatial analysis is an emerging tool within FEMA and the emergency management community and it is important for program decision-makers to have an understanding of the opportunities and limitations to the analysis. The information provided in this section has been developed to illustrate opportunities and best practices in the use of geospatial technology and how it can be used to support damage assessments.

Geospatial Analysis and Technology Overview

Geospatial analysis may be used to identify damage and quickly determine the type of assistance needed to support the recovery of individuals and communities. The analysis process involves the evaluation of multiple sources of imagery, using geospatial models, and other remote sensing data to assess damage.

In order to accurately and consistently evaluate damage, FEMA has developed peril specific definitions for the geospatial analysis of damaged homes and infrastructure. These damage definitions have been developed and refined over time in collaboration with FEMA program experts, experienced geospatial analysts, and structural engineering specialists from multiple organizations.

FEMA relies on multiple internal and external sources to provide data and/or analysis to support the geospatial damage assessments. Representing agencies and organizations from across government and the private sector geospatial damage assessment partners include:

- State or Tribal Governments
- FEMA Geospatial Information Officer (GIO)/Regional Geospatial Staff
- FEMA Modeling Task Force (MOTF)
- National Geospatial-Intelligence Agency (NGA)
- U.S. Geological Survey (USGS)

- National Oceanic and Atmospheric Administration (NOAA)
- Private contractors.

Geospatial Damage Assessment Process

Before, during, or after an event, an Area of Interest (AOI) is determined by analyzing forecast models or event data such as a storm track, tornado track, USGS Shake maps and other products that can be compared to population density and demographic data. After coordination to ensure the AOI meets FEMA/Federal, State or Tribal Government, and local requirements, the AOI is defined by using the U.S. National Grid and submitted to a FEMA remote sensing collection entity. If there is more than one AOI, they are prioritized before being provided to the remote sensing collection entity. There are a variety of remote sensing options available for use during an event, descriptions of which can be found in the data discussion below.

Once the imagery has been collected, it needs to be evaluated by analysts with proven understanding of the geospatial damage assessment process. Analysts can include internal FEMA geospatial analysts, a private contractor/organization, or a Federal agency such as NGA. This data is then merged with impact data produced by such groups as the FEMA MOTF and OFA's (NOAA, USGS, etc.) resulting in a detailed, house-by-house assessment that can be used to assess the need for the IA programs. This methodology can be equally applied to support geospatial damage assessments of roads, bridges, schools, hospitals and other public infrastructure used to assess the need for the PA) program.

Partnerships between FEMA and local, State or Tribal Government counterparts are important for data and analysis sharing and the accurate efficient assessment of damage. Quality parcel and imagery information maintained by States, Tribal Governments, and local jurisdictions can dramatically shorten assessment timelines and improve the quality of analysis. Similarly, information maintained by FEMA may be helpful to States or Tribal Governments as they analyze the damage and impact of an event. When needed, FEMA can often provide geospatial specialists to State or Tribal Government following a disaster to assist with the aggregation and analysis of damage information provided by municipal and county emergency managers.

Using Static and Event Data and Imagery

Data is the most significant variable in the geospatial damage assessment process. A highly accurate damage assessment begins with access to quality data from many different sources. Pre-event static data such as population density, demographic data, and property parcel information should be compared to post event information and imagery – damage to locations developed during ground-based damage assessments, hurricane path, tornado track, fire-lines, lava-flows, and other disaster related geospatial information. Static data must be analyzed along with event-specific data to determine the actual extent and severity of the disaster.

Parcel data is incredibly valuable because it provides owner specific property information such as, commercial versus residential, primary versus secondary residential use, number of structures on the parcel and valuation.

Static Data

- Pre-event imagery (see below)
- Parcel/Structure Data
- LandScan/Census Population data
- Elevation (Digital Elevation Model)
- Zip codes (+ 4)
- Floodplain Data
- Environmental/Historical Event Data
- Critical Infrastructure/Key Resources
- National Flood Insurance Program (NFIP) Data
- Census/Demographic Data

Event Data

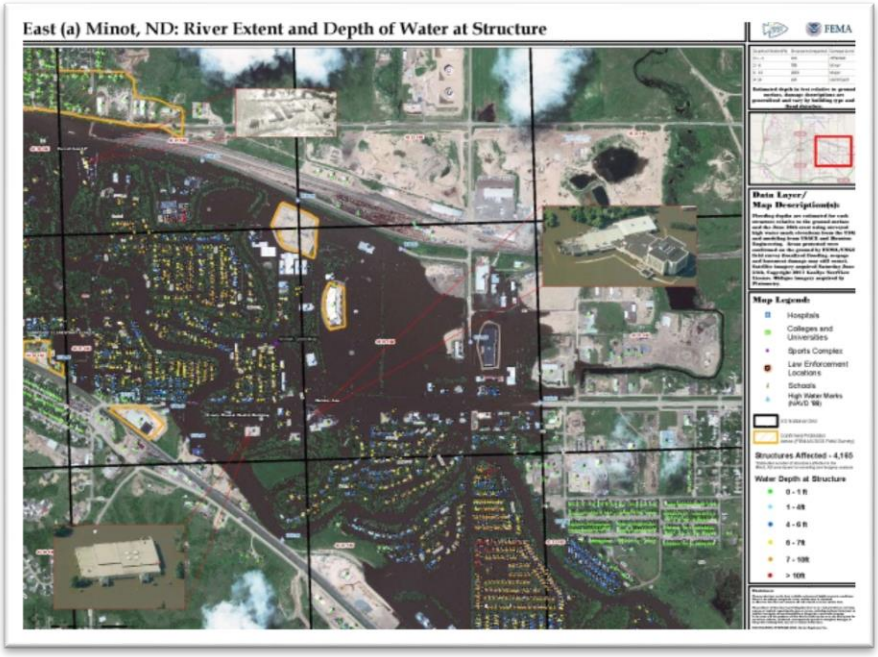
- Damage infrastructure or home locations
- Post event imagery (see below)
- High Water Lines or Flood Depth
- Property damage from aerial analysis
- Storm Track
- Shake Map (USGS)
- Sea, Lake, and Overland Surges from Hurricanes (SLOSH) Models
- HAZUS Data (economic loss impacts)
- Stream/River Gauge Data
- Depth Grids for flooding
- Precipitation Forecasts/Observations
- Road Closure/Infrastructure Status Data
- Utility/Power Outage Data

Geospatial Imagery

Remote sensing imagery helps analysts determine the extent of damage to homes and infrastructure. Imagery can fall into both the static and event category based on when it is captured. The following is a list of imagery data sources used to support analysis in which geospatial analysts will determine and request the most appropriate source based on the event and availability of the data:

- High Resolution Orthorectified Satellite Imagery (20 inch or 0.41 meter pixel resolution if possible)
- High Resolution Orthorectified Airborne Imagery (10 inch pixel resolution or better). This imagery should be acquired at an overhead/nadir angle. For best results, 6 inch oblique imagery should be acquired.
- Synthetic Aperture Radar (SAR) or Light Detection and Ranging (LiDAR) sensors: Used for mapping flooding extents and change detection on land.
- Civil Air Patrol (CAP) Photos: Geo-tagged photos collected through mission assignment that are most often simple airborne collected images that are not Orthorectified, and can also include ground collected photos.
- Traditional Media: Photos or news footage can be geo-located in order to determine locations of damaged houses.
- Social Media: Geo-tagged photos or videos posted to social media sites such as Facebook, Twitter, Instagram, etc.

Figure 1: The below graphic shows house-by-house damage assessments of flooding in Minot, ND. The analysts used multiple sources of imagery to provide the assessments



Geospatial Considerations for All Disasters

There are limitations for geospatial damage assessments that may greatly impact its use in analysis. When the following limitations exist, the timeliness of geospatial analysis can be affected.

- **Weather**: Cloud cover can often obstruct views for collection of damage in both satellite and airborne imagery. In addition, dangerous weather conditions can prevent planes from flying to collect airborne imagery.
- **Flight Prohibition**: Airborne imagery collection may be temporarily prohibited in areas with ongoing Search and Rescue Operations.
- **Poor Data Environments**: In some areas of the United States, detailed parcel and population data are not available. This creates a challenge during analysis and may affect the ability to provide the information required to support processing by the National Processing Service Center (NPSC).
- **Contract Acquisition Timeline:** The FEMA acquisition process to obtain needed airborne imagery and/or analytic support can be delayed; impacting the timely attainment of data.
- **Impacted Area**: In urban areas with more apartment buildings, geospatial analysis may not be able to further refine the damage level by apartment unit. In rural areas steep terrain, heavy tree canopies or a lack of parcel data can be a limitation. These kinds of instances require additional analytical time and can prevent the analysis for certain properties.

Integration of Mobile Technology

Mobile damage assessment applications allow field assessment teams to disseminate in-time actionable damage and impact information via cellular networks or the Internet.

Damage Assessment applications may eliminate the time required to deliver paper-based assessment reports previously delivered at the end of the day. Additionally, the ability to instantly distribute damage information to central databases removes the communication lag between local, State or Tribal Government, and Federal emergency managers.

The standardized information used to assess damage described in previous sections may appear daunting to a field assessment team member. Mobile damage assessment applications can increase the accuracy of information collected by serving as job-aids that walks the assessor through the information required to evaluate damage. This standardized information intake approach combined with the ability to attach photographs to each assessment conducted, also allows for immediate verification and feed-back. Together, these simple elements increase the quality of information developed in the field and enable emergency managers to further leverage the use of non-emergency management staff to conduct assessments and increases capability.

Collecting assessment data electronically and storing it in one central location makes it much easier to develop standard reports that allow local, State or Tribal Government, and Federal emergency management agencies to more quickly analyze information developed in the field. Rooted in the concept of interoperable communications, this requirement is fundamental to our ability to develop a common operating picture. This approach also makes it easier to take assessment data and combine it with other data sources such as demographic data from the U.S. Census Bureau or historical data from FEMA and emergency management organizations and leverages our ability to understand how an event has impacted a community.

Appendix A: Roles and Responsibilities

Note: The checklists provided in this Appendix are intended to serve as guiding principles that may assist the user with applicable tasks in their roles. They are not intended to represent a one-size fit all approach or to require staffing for any specific role.

Local or County Damage Assessment Coordinator

	Identify and train personnel to assess damage to homes according to criteria defined by FEMA
	Identify potential PA applicants and train them to collect necessary information and supporting documentation defined by FEMA
	Aggregate and submit local damage assessment information and supporting documentation to the County, State or Tribal Government as appropriate
	Coordinate with the County, State or Tribal Government as appropriate to schedule joint PDA field assessments
	Coordinate with potential PA applicants so they are prepared to schedule and attend the PA PDA briefing and interview
	Provide an overview of the incident for Joint PDA team
	Provide map(s) illustrating damage in the jurisdiction
	Serve as an expert on local disaster history, unique cultural considerations, and other challenges that complicate recovery
	Provide impact statement information to State or Tribal Government as requested
	Guide Joint PDA team members to damaged sites
	Confirm that all damaged areas are surveyed during the Joint PDA

Local or County PA Damage Assessment Team Member (Representative of Potential Applicant)

	Identify and document damage to infrastructure and estimate restoration cost
	Document emergency protective measure and debris removal activity and estimate cost
	Confirm insurance deductibles and limits for damaged facilities
	Collect documentation necessary to support estimates (important for large projects or when PA program eligibility may be in question)
	Summarize damage on annotated map(s)
	Summarize the impact damage will have on normal community functions (e.g. number of people impacted and estimated duration)
	Submit damage assessment information to the Local or County Damage Assessment Coordinator according to established protocol
	Answer questions related to submitted damage, activities, and impacts posed by Joint PDA team members
	Guide and accompany Joint PDA team to damaged sites as necessary
	Collect and submit additional information or supporting documentation requested by Joint PDA team members

Local or County IA Damage Assessment Team Member

	Document the location of and level of damage to homes and businesses according to criteria defined by FEMA
	Document trauma, disruption of normal community functions, areas of concentrated damage, and areas where there is a high numbers of residents from defined special populations observed in the field.
	Accompany Joint PDA field teams when necessary

State or Tribal Government Damage Assessment Coordinator

	Establish and maintain communication with local or county emergency managers conducting damage assessments
	Provide technical or subject matter expertise to local or county damage assessments as necessary
	Support IA and PA programmatic lead efforts to ensure that information provided by Local or County Damage Assessment Coordinators is verified in some manner and that impacted jurisdictions are ready to receive Joint PDA teams
	Coordinate the development of a State or Tribal damage assessment summary prior to the Joint PDA
	Coordinate transportation for Joint PDA teams, including the need for specialized transportation when necessary, e.g. aircraft, boats, etc.
	Sufficiently equip staff for successful task completion
	Identify and secure the facilities necessary to support Joint PDA operations
	Establish operational strategy, schedules and reporting requirements in conjunction with the FEMA PDA Coordinator
	Provide an overview of the disaster during the Joint PDA briefing for Joint PDA team members
	Participate in conversations related to PA programmatic eligibility questions and IA damage determinations that are unable to be resolved in the field (as necessary)
	Identify an External Affairs representative to serve as the primary point of contact for media inquiries
	Identify a primary State or Tribal Government point of contact for environmental, historic, mitigation, and other special considerations
	Participate in the exit briefing at the conclusion of the Joint PDA
	Participate in the development of the request for Federal assistance as necessary

State or Tribal Government PA Damage Assessment Team Lead

	Serve as a principal State or Tribal Government PA programmatic point of contact throughout the damage assessment process
	Provide PA programmatic guidance to Local or County Damage Assessment Coordinators as necessary
	Ensure that information provided by Local or County Damage Assessment Coordinators is verified in some manner and that impacted jurisdictions are ready to receive Joint PDA teams
	Provide PA input for the State or Tribal damage assessment summary that will be delivered to the FEMA Regional Office with the PDA request
	Work with the FEMA PA PDA Team Lead to develop PA Joint PDA team assignments
	Provide State or Tribal Government PA input during the Joint PDA briefing
	Coordinate with Local or County Damage Assessment Coordinators to schedule interviews with potential applicants and field assessments
	Maintain contact with Local or County Damage Assessment Coordinators and keep them apprised of changes to the Joint PDA schedule
	Provide programmatic guidance to assigned staff as needed
	Participate in conversations related to PA pragmatic eligibility questions that are unable to be resolved in the field, and coordinate with potential applicants as necessary to address challenges
	Confirm that Joint PDA teams have met with all impacted jurisdictions and validated all reported damage
	Participate in the exit briefing at the conclusion of the Joint PDA
	Participate in the development of the request for Federal assistance as necessary

State or Tribal Government PA Damage Assessment Team Member

	Serve as the State or Tribal representative on Joint PDA PA field team
	Record and maintain contacts, operational strategy, schedule, reporting requirements, and other information provided in the initial briefing
	Coordinate with Local or County Damage Assessment Coordinators to confirm schedule and meeting location for interviews with potential applicants and site assessments
	In coordination with FEMA counterpart, provide local officials and potential applicants with an overview of PA program and the information and documentation that the Joint PDA team will use to validate estimates
	Conduct interviews with potential applicants and field assessments to validate information provided
	In coordination with FEMA counterpart, review information and documentation provided or observed to validate estimates
	Provide guidance to potential applicants necessary to address missing information or documentation
	Maintain copies any documents provided by potential applicants
	Provide guidance to potential applicants on special considerations that must be taken into account as infrastructure is restored (e.g. contract requirements, environmental or historic considerations, etc.)
	Work with the FEMA counterpart to reconcile differences in assessments, and elevate challenges to State or Tribal PA Damage Assessment Lead when they cannot be resolved in the field
	Confirm with each potential applicant that no additional damage or impact information is available at the conclusion of the interview or site assessments
	Prepare and submit findings to the State or Tribal Government PA PDA Team Lead according to established requirements and timelines

State or Tribal IA Damage Assessment Team Lead

	Serve as a principal State or Tribal Government IA programmatic point of contact throughout the damage assessment process
	Provide IA programmatic guidance to Local or County Damage Assessment Coordinators as necessary
	Ensure that information provided by Local or County Damage Assessment Coordinators is verified in some manner and that impacted jurisdictions are ready to receive Joint PDA teams
	Provide IA input for the State or Tribal damage assessment summary that will be delivered to the FEMA Regional Office with the PDA request
	Work with the FEMA PDA IA Team Lead to develop IA PDA team assignments, reporting requirements, and schedule of operations o While FEMA will coordinate with SBA for the Joint PDA, the State or Tribal Government will work directly with SBA when a SBA only damage assessment is requested
	Coordinate with Local or County Damage Assessment Coordinators to schedule IA Joint PDA field assessments
	Provide State or Tribal Government IA input during the Joint PDA briefing
	Maintain contact with Local or County Damage Assessment Coordinators and keep them apprised of changes to the Joint PDA schedule
	Provide updated or localized demographic, income, homeownership, occupancy, and/or insurance to FEMA when the State or Tribe would like information other than that available from the U.S. Census to be used.
	Provide programmatic guidance to assigned staff as needed
	Participate in conversations related to damage determinations that are unable to be resolved in the field
	Confirm that Joint PDA teams have met with all impacted jurisdictions and validated all reported damage
	Conduct post field assessment briefings with assigned team members to gain any missing/additional information
	Collect and refine data and draft county impact narratives submitted by State or Tribal Government IA PDA Team Members
	Coordinate with other State or Tribal Government agencies to gather impact data.
	Participate in the exit briefing at the conclusion of the Joint PDA
	Participate in the development of the request for Federal assistance as necessary

State or Tribal Government IA Damage Assessment Team Member

	Serve as the State or Tribal representative on Joint PDA IA field team
	Record and maintain contacts, operational strategy, schedule, reporting requirements, and other information provided in the initial briefing
	Coordinate with Local or County Damage Assessment Coordinators to confirm schedule and meeting location
	In coordination with FEMA counterpart, provide local officials with an overview of IA program and the criteria that the Joint PDA team will use to validate damage
	Discuss impacts that the disaster has had with the Local Damage Assessment Coordinator
	Conduct field assessments as part of the Joint PDA team to validate damage according to criteria defined by FEMA
	Work with the FEMA counterpart to reconcile differences in assessments, and elevate challenges to State or Tribal IA Damage Assessment Lead when they cannot be resolved in the field
	Confirm with Local or County Damage Assessment Coordinator that no additional damage or impact information is available at the conclusion of the field assessments
	Prepare and submit findings to the State or Tribal Government IA PDA Team Lead according to established requirements and timelines

State or Tribal Government Voluntary Agency Liaison

	Contact the leadership of active voluntary organizations, VOADs, and COADs to gather information related to activity and capacity
	Document any challenges that may limit assistance available from voluntary organizations in the short and long term
	Discuss any trauma reported by survivors
	Discuss observed demographic trends that may impact recovery (i.e., high numbers of clients who are elderly, low income, non-English speaking)
	Document volunteer and donations management activity/capacity/challenges
	Document existing VOADs, COADs, or long term recovery groups in the area, ability to provide disaster case management, and other information that can be used to anticipate capacity to address needs through recovery
	Provide information gathered in narrative form to the State or Tribal Government IA damage assessment Team Lead

State or Tribal Government Mass Care and Emergency Assistance Crew Lead

	Contact active government and nongovernment agencies and organizations involved in mass care activities to gather information related to activity and capacity
	Document shelter locations and the number of overnight stays
	If shelters have closed or were not opened, document where impacted residents are currently living
	Document areas served by mass feeding operations and the number of meals and snacks distributed
	Document distribution activity, including the type and number items distributed
	Document evaluations and mass care activity related to evacuation support
	Document the number of health and safety contacts
	Document the number of mental health contacts
	Document the number of client cases opened and closed
	Document operation or activation levels established by active national organizations
	Document any challenges that will challenge the continued provision of required mass care and emergency assistance support
	Provide information gathered in narrative form to the State or Tribal Government IA damage assessment Team Lead

FEMA PDA Coordinator

	Establish an operational strategy, schedules, and reporting requirements in conjunction with the Local, State or Tribal Government PDA Coordinator
	Ensure that appropriate staff are deployed to support State or Tribal Government PDA requests
	Ensure that FEMA staff are appropriately equipped to accomplish assigned tasks in conjunction with the FEMA PA and IA Leads
	Coordinate with IA and PA Team Leads and the State or Tribal Government to provide an overview of programmatic validation requirements at the Joint PDA briefing
	Participate in conversations related to programmatic challenges that are unable to be resolved in the field
	Ensure that questions posed by the State or Tribal Government are responded to or appropriately routed to the FEMA Region
	Maintain awareness of PDA progress and inform the FEMA Region as appropriate
	Coordinate with FEMA External Affairs representative to respond to political and media inquiries
	Participate in PA and IA PDA exit briefings to confirm that questions and concerns are efficiently addressed

*Refer to the Use of the United States National Grid (USNG), FEMA Directive 092-5, when applicable.

FEMA PA PDA Team Lead

	Serve as a principal FEMA PA programmatic point of contact during the Joint PDA
	Work with the State or Tribal Government PA PDA Team Lead to develop team assignments
	Ensure that assigned staff are appropriately briefed and prepared to validate estimates according to defined standards
	Ensure coordination with USACE, NRCS and OFAs
	Provide FEMA PA input during the Joint PDA briefing
	Provide programmatic guidance to assigned staff as needed
	Participate in conversations related to PA pragmatic eligibility questions that are unable to be resolved in the field, and coordinate with potential applicants as necessary to address challenges
	Provide guidance on additional information and supporting documentation that can be used to determine project eligibility and/or estimate cost
	Adjust estimates as needed to align with program eligibility requirements
	Ensure awareness of the State or Tribal Government of changes or adjustments made to estimates provided by Joint PDA Field teams
	Maintain awareness of PDA progress and inform the FEMA Region as appropriate
	Confirm the Joint PDA teams have met with all impacted jurisdictions and validated all reported damage
	Facilitate PA Joint PDA exit briefing with the State or Tribal Government and FEMA Regional office
	Compile final PDA data into required tables and summary reports for submission to the FEMA Regional PA Branch Chief for review – Note: final FEMA Table A will be provided by the FEMA Regional Recovery Division Director at the conclusion of the Joint PDA
	Develop draft text and tables for the Regional Verification Analysis and Recommendation

*Refer to the Use of the United States National Grid (USNG), FEMA Directive 092-5, when applicable.

FEMA PA PDA Team Member

	Serve as the FEMA representative on Joint PDA PA field team
	Record and maintain contacts, operational strategy, schedule, reporting requirements, and other information provided in the initial briefing
	In coordination with State or Tribal Government counterpart, provide local officials and potential applicants with an overview of PA program and the information and documentation that the Joint PDA team will use to validate estimates
	Conduct interviews with potential applicants and field assessments to validate information provided
	In coordination with State or Tribal Government counterpart, review information and documentation provided or observed to validate estimates
	Provide guidance to potential applicants necessary to address missing information or documentation
	Maintain copies any documents provided by potential applicants
	Provide guidance to potential applicants on special considerations that must be taken into account as infrastructure is restored (e.g. contract requirements, environmental or historic considerations, etc.)
	Work with the State or Tribal Government counterpart to reconcile differences in assessments, and elevate challenges to the FEMA PA Damage Assessment Lead when they cannot be resolved in the field
	Confirm with each potential applicant that no additional damage or impact information is available at the conclusion of the interview or site assessments
	Prepare and submit findings to the FEMA PA PDA Team Lead according to established requirements and timelines

FEMA IA PDA Team Lead

	Serve as a principal FEMA IA programmatic point of contact during the Joint PDA
	Work with the State or Tribal Government IA damage assessment Team Lead to develop IA Joint PDA team assignments, reporting requirements, and schedule of operations
	Ensure coordination with assigned US SBA staff
	Provide FEMA IA input during the Joint PDA briefing
	Provide U.S. Census information that will be referenced to the State or Tribal IA damage assessment Team Lead
	Provide programmatic guidance to assigned staff as needed
	Participate in conversations related to damage determinations that are unable to be resolved in the field
	Confirm that Joint PDA teams have met with all impacted jurisdictions and validated all reported damage
	Conduct post field assessment briefings with assigned team members to gain any missing/additional information
	Collect and refine data and draft county impact narratives submitted by FEMA IA PDA Team Members
	Facilitate IA Joint PDA exit briefing with the State or Tribal Government and FEMA Regional office
	Compile final PDA data into required tables and summary reports for submission to the FEMA Regional IA Branch Chief for review – Note: final FEMA Joint PDA report will be provided by the FEMA Regional Recovery Division Director at the conclusion of the Joint PDA
	Develop draft text and tables for the Regional Verification Analysis and Recommendation

*Refer to the Use of the United States National Grid (USNG), FEMA Directive 092-5, when applicable.

FEMA IA PDA Team Member

	Serve as the FEMA representative on Joint PDA IA field team
	Record and maintain contacts, operational strategy, schedule, reporting requirements, and other information provided in the initial briefing
	In coordination with State or Tribal counterpart, provide local officials with an overview of IA program and the criteria that the Joint PDA team will use to validate damage
	Discuss and document impacts that the disaster has had with the Local Damage Assessment Coordinator
	Conduct field assessments as part of the Joint PDA team to validate damage according to criteria defined by FEMA
	Work with the State or Tribal government counterpart to reconcile differences in assessments, and elevate challenges to the FEMA IA PDA Team Lead when they cannot be resolved in the field
	Confirm with Local or County Damage Assessment Coordinator that no additional damage or impact information is available at the conclusion of the field assessments
	Prepare and submit findings to the FEMA IA PDA Team Lead according to established requirements and timelines

FEMA Voluntary Agency Liaison

In coordination with State or Tribal Government counterpart…

	Contact the leadership of active voluntary organizations, VOADs, and COADs to gather information related to activity and capacity
	Document any challenges that may limit assistance available from voluntary organizations in the short and long term
	Discuss any trauma reported by survivors
	Discuss observed demographic trends that may impact recovery (i.e., high numbers of clients who are elderly, low income, non-English speaking)
	Document volunteer and donations management activity/capacity/challenges
	Document existing VOADs, COADs, or long term recovery groups in the area, ability to provide disaster case management, and other information that can be used to anticipate capacity to address needs through recovery
	Provide information gathered in narrative form to the FEMA IA PDA Team Lead

FEMA Mass Care and Emergency Assistance Crew Lead

In coordination with State or Tribal Government counterpart…

	Contact active government and nongovernment agencies and organizations involved in mass care activities to gather information related to activity and capacity
	Document shelter locations and the number of overnight stays
	If shelters have closed or were not opened, document where impacted residents are currently living
	Document areas served by mass feeding operations and the number of meals and snacks distributed
	Document distribution activity, including the type and number items distributed
	Document evaluations and mass care activity related to evacuation support
	Document the number of health and safety contacts
	Document the number of mental health contacts
	Document the number of client cases opened and closed
	Document operation or activation levels established by active national organizations
	Document any challenges that will challenge the continued provision of required mass care and emergency assistance support
	Provide information gathered in narrative form to the FEMA IA PDA Team Lead

Appendix B: PA Damage Assessment Category of Work Checklists

Category A: Debris Removal

Important Information

	Classification of debris by type: ▪ Vegetative debris including hazardous limbs, trees, and stumps ▪ White goods (Appliances such as refrigerators and other household appliances) ▪ Construction and demolition (C&D) debris ▪ Hazardous, infectious, putrescent, and/or CBRN waste White goods (appliances) ▪ Buildings and contents/construction and demolition ▪ Soil, Mud, and Sand ▪ Wet debris ▪ Vehicles and Vessels ▪ Contaminated
	Location of Debris* (roads, ROW, private property, waterways, parks, etc.)
	Quantity of each type of debris being removed
	How work was/will be accomplished ▪ Force account ▪ Contract ▪ Combination
	Force Account cost ▪ Labor (include regular time and overtime hours and rates used) ▪ Equipment (include time and rates used) ▪ Supplies (list supplies used and cost)
	Contract costs
	Unit costs ($/ton or CY)– with explanation of calculation
	Percent of debris removal completed at the time of assessment
	Location of debris operations facilities (reduction sites, disposal sites, etc.)
	Unique removal requirements (special equipment, long hauls, staging, reduction, hazardous materials, local ordinances etc.)
	Recycling or reusing any of the debris (yes/no)
	Impact on normal community functions
	Environmental and historic preservation considerations

Supporting Documentation

	Photographs ▪ Work completed ▪ Work to be completed ▪ Locations where estimates were developed
	Debris quantity calculation sheets
	Contracts (provide for large projects) ▪ Contractor Bids or invoices ▪ Disposal invoices
	Force Account ▪ Labor cost summary (separate regular time from overtime) ▪ Equipment cost summary ▪ Supply cost summary
	Notated maps ▪ Debris locations ▪ Debris operations facilities

*When applicable refer to the Use of the United States National Grid (USNG), FEMA Directive 092-5

Category B: Emergency Protective Measures

Important Information

	Location (specific location address and GPS/USNG location or jurisdiction wide)
	Emergency protective measures required
	How work was/will be accomplished ▪ Force account ▪ Contract ▪ Mutual Aid ▪ Combination
	Force Account cost ▪ Labor (include overtime hours and rates used) ▪ Equipment (include time and rates used) ▪ Supplies (substantial expenditures should be noted specifically with unit cost)
	Mutual aid cost
	Contract cost
	Percent of emergency protective measures completed at the time of assessment
	Unique requirements that impact cost
	Impact on normal community functions

Supporting Documentation

	Photographs of unique requirements
	Force Account ▪ Labor cost summary (overtime) ▪ Equipment cost summary ▪ Supply cost summary
	Mutual aid agreements used (provide for large projects)
	Contracts, bids, or invoices (provide for large projects)
	Notated maps

Category C: Roads and Bridges

Important Information

	Location(s) (address and/or GPS/USNG location)
	Federal Aid Road or BIA road (yes/no/unsure)
	Road or bridge type (specific structure and material)
	Repair/replacement required (in-kind) ▪ Damaged elements ▪ Damage dimensions
	How work was/will be accomplished • Force account • Contract • Combination
	Force account cost (actual or estimate) ▪ Labor (include regular time and overtime hours and rates used) ▪ Equipment (include time and rates used) ▪ Supplies (list supplies used and cost)
	Material cost (actual or estimate)
	Contract cost (actual or estimate)
	Unique requirements that impact cost
	Impact on normal community functions
	Environmental and historic preservation considerations

Supporting Documentation

	Photographs (sample if multiple similar damage has occurred)
	▪ Force Account (work completed) ▪ Labor cost summary (separate regular time from overtime) ▪ Equipment cost summary ▪ Supply cost summary
	Contracts, bids, or invoices (provide for large projects)
	Basis for estimations (for work to be completed) ▪ Historic costs for similar work (provide example for large projects) ▪ Estimate by professional familiar with the facility (provide breakdown)

	▪ Commercial estimating source (RS Means, Cost Works, etc.) report
	Recent safety inspection reports or maintenance records that show pre-disaster condition (provide for large projects)
	Codes and standards to be considered (provide when the code or standard will dramatically increase the cost of restoration)
	Notated maps

Category D: Water Control Facilities

Important Information

	Location(s) (address and/or GPS/USNG location)
	Facility type
	Are repairs to these facilities the responsibility of USACE or NRCS? (yes/no/unsure)
	Repair/replacement required (in-kind) ▪ Damaged elements ▪ Damage dimensions
	How work was/will be accomplished ▪ Force account ▪ Contract ▪ Combination
	Force Account cost (actual or estimate) ▪ Labor (include regular time and overtime hours and rates used) ▪ Equipment (include time and rates used) ▪ Supplies (list supplies used and cost)
	Material cost (actual or estimate)
	Contract cost (actual or estimate)
	Unique requirements that impact cost
	Impact on normal community functions
	Environmental and historic preservation considerations

Supporting Documentation

	Photographs (sample if multiple similar damage has occurred)
	Force Account (work completed) ▪ Labor cost summary (separate regular time from overtime) ▪ Equipment cost summary ▪ Supply cost summary
	Contracts, bids, or invoices (provide for large projects)
	Basis for estimations (for work to be completed) ▪ Historic costs for similar work (provide example for large projects)

	▪ Estimate by professional familiar with the facility (provide breakdown – especially when replacement is requested) ▪ Commercial estimating source (RS Means, Cost Works, etc.) report
	Recent inspection reports or maintenance records that show pre-disaster condition (when pre-disaster condition may impact estimate of large project)
	Specifications or as-built drawings of the damage facility (may be helpful – only for large projects)
	Codes and standards to be considered (provide when the code or standard will dramatically increase the cost of restoration)
	Notated maps

Category E: Buildings and Equipment

Important Information

	Location(s) (address and/or GPS/USNG location)
	Facility type
	Repair/replacement required (in-kind) ▪ Damaged elements ▪ Damage dimensions ▪ Damaged equipment type ▪ Damaged building contents
	How work was/will be accomplished ▪ Force account ▪ Contract ▪ Combination
	Force account cost (actual or estimate) ▪ Labor (include regular time and overtime hours and rates used) ▪ Equipment (include time and rates used) ▪ Supplies (list supplies used and cost)
	Material cost (actual or estimate)
	Contract cost (actual or estimate)
	Value of equipment (blue book value) if replacement is required
	Insurance deductibles and limits
	Unique requirements that impact cost
	Impact on normal community functions
	Environmental and historic preservation considerations

Supporting Documentation

	Photographs (sample if multiple similar damage has occurred)
	Force Account (work completed) ▪ Labor cost summary (separate regular time from overtime) ▪ Equipment cost summary ▪ Supply cost summary

	Contracts, bids, or invoices (provide for large projects)
	Insurance documentation needed to establish deductible and limits (provide for large projects)
	Basis for estimations (for work to be completed) ▪ Historic costs for similar work (provide example for large projects) ▪ Estimate by professional familiar with the facility (provide breakdown – especially when replacement is requested) ▪ Commercial estimating source (RS Means, Cost Works, etc.) report
	Codes and standards to be considered (provide when the code or standard will dramatically increase the cost of restoration)
	Notated maps

Category F: Utilities

Important Information

	Location(s) (address and/or GPS/USNG location)
	Facility type
	Repair/replacement required (in-kind) ▪ Damaged elements ▪ Damage dimensions (size, length, capacity, etc.)
	Will reconductoring be required (yes/no/unsure)
	How work was/will be accomplished ▪ Force account ▪ Contract ▪ Combination
	Force account cost (actual or estimate) ▪ Labor (include regular time and overtime hours and rates used) ▪ Equipment (include time and rates used) ▪ Supplies (list supplies used and cost)
	Material cost (actual or estimate)
	Contract cost (actual or estimate)
	Unique requirements that impact cost
	Impact on normal community functions
	Environmental and historic preservation considerations

Supporting Documentation

	Photographs (sample if multiple similar damage has occurred)
	Force Account (work completed) ▪ Labor cost summary (separate regular time from overtime) ▪ Equipment cost summary ▪ Supply cost summary
	Contracts, bids, or invoices (provide for large projects)

	Basis for estimations (for work to be completed) ▪ Historic costs for similar work (provide example for large projects) ▪ Estimate by professional familiar with the facility (provide breakdown – especially when replacement is requested) ▪ Commercial estimating source (RS Means, Cost Works, etc.) report
	Information used to evaluate the need for reconductoring (if reconductoring is requested)
	Codes and standards to be considered (provide when the code or standard will dramatically increase the cost of restoration)
	Notated maps

Category G: Parks, Recreational, and Other

Important information

	Location(s) (address and/or GPS/USNG location)
	Facility type
	Repair/replacement required (in-kind) ▪ Damaged elements ▪ Damage dimensions
	How work was/will be accomplished ▪ Force account ▪ Contract ▪ Combination
	Force account cost (actual or estimate) ▪ Labor (include regular time and overtime hours and rates used) ▪ Equipment (include time and rates used) ▪ Supplies (list supplies used and cost)
	Material cost (actual or estimate)
	Contract cost (actual or estimate)
	Insurance deductibles and limits
	Unique requirements that impact cost
	Impact on normal community functions
	Environmental and historic preservation considerations

Supporting Documentation

	Photographs (sample if multiple similar damage has occurred)
	Force Account (work completed) ▪ Labor cost calculation sheet (separate regular time from overtime) ▪ Equipment cost calculation sheet ▪ Supply cost calculation sheet
	Contracts, bids, or invoices (provide for large projects)
	Insurance documentation needed to establish deductible and limits (provide for large projects)

	Basis for estimations (for work to be completed) ▪ Historic costs for similar work (provide example for large projects) ▪ Estimate by professional familiar with the facility (provide breakdown – especially when replacement is requested) ▪ Commercial estimating source (RS Means, Cost Works, etc.) report
	Codes and standards to be considered (provide when the code or standard will dramatically increase the cost of restoration)
	Notated maps

Appendix C: PA PNP Program Requirements

<table>
<tr><th colspan="2">PNP Eligible Critical Services</th></tr>
<tr><td>Education

• Primary or secondary education as determined under State law and provided in a day or residential school, including parochial schools, OR
• Higher education institutions that meet all of the following criteria:
  ○ Admit students or persons having a high school diploma or equivalent;
  ○ Are legally authorized to provide education beyond a secondary level;
  ○ Award a bachelor’s degree or a 2-year degree that is acceptable as full credit toward a bachelor’s degree or provides at least a 1-year training program to prepare students for gainful employment in a recognized occupation; and
  ○ Are accredited by a nationally recognized agency or association (as determined by the Secretary of Education)</td><td>Medical

• Emergency medical care (diagnosis or treatment of mental or physical injury or disease) provided in:
  ○ Clinics
  ○ Facilities that provide in-patient care for convalescent or chronic disease patients
  ○ Hospices and nursing homes
  ○ Hospitals and related facilities, including:
  ▪ Central service facilities operated in connection with hospitals
  ▪ Extended-care facilities
  ▪ Facilities related to programs of home-health services
  ▪ Laboratories
  ▪ Self-care units
  ▪ Storage, administration, and record areas
  ○ Long-term care facilities
  ○ Outpatient facilities
  ○ Rehabilitation centers that provide medical care</td></tr>
<tr><td>Utility

• Communications transmission and switching, and distribution of telecommunications traffic
• Electric power generation, transmission, and distribution
• Irrigation to provide water for drinking water supply, fire suppression, or electricity generation
• Sewer and wastewater collection, transmission, and treatment
• Water treatment, transmission, and distribution, by a water company supplying municipal water</td><td>Emergency Services

• Ambulance
• Fire Protection
• Rescue</td></tr>
<tr><td colspan="2">Administrative and support buildings essential to the operation of PNP critical services are eligible facilities.</td></tr>
</table>

PNP Eligible Non-Critical Services	

Community centers established and primarily used for the purpose of offering the following services (or similar) to the community at large:
• Art services authorized by a State, Territorial, Tribal, or local government, including, but not limited to:
  ○ Arts administration
  ○ Art classes
  ○ Management of public arts festivals
  ○ Performing arts classes
• Educational enrichment activities that are not vocational, academic, or professional training; examples include hobby or at-home pursuits, such as:
  ○ Car care
  ○ Ceramics
  ○ Gardening
  ○ Personal financial and tax planning
  ○ Sewing
  ○ Stamp or coin collecting
• Multi-purpose arts programming
• Senior citizen projects, rehabilitation programs, community clean-up projects, blood drives, local government meetings, and similar activities
• Services and activities intended to serve a specific group of individuals (e.g. women, African-Americans, or teenagers) provided the facility is otherwise available to the public on a non-discriminatory basis
• Social activities to pursue items of mutual interest or concern, such as:
  ○ Community board meetings
  ○ Neighborhood barbecues
  ○ Various social functions of community groups
  ○ Youth and senior citizen group meetings
• Community centers operated by a religious institution that provides secular activities, such as fundraising, activities that help the community at large
	• Child care
	• Day care for individuals with disabilities or access and functional needs (for example, those with Alzheimer's disease, autism, muscular dystrophy)
	• Food assistance programs
	• Health and safety programs
	• Homeless shelters
	• Libraries
	• Low-income housing (as defined by Federal, State, Territorial, Tribal, or local law or regulation)
	• Museums:
	  ○ Constructed, manufactured, or converted with a primary purpose of preserving and exhibiting a documented collection of artistic, historic, scientific, or other objects
	  ○ Buildings, associated facilities, fixed facilities, and equipment primarily used for the preservation or exhibition of the collection, including:
	  ▪ Permanent infrastructure, such as walkways and driveways of outdoor museum-type exhibition areas
	  ▪ Historic buildings, such as barns and other outbuildings, intended for the preservation and exhibition of historical artifacts within a defined area
	  ▪ Permanent facilities and equipment that are part of arboretums and botanical gardens
	  ▪ Infrastructure, such as utilities, and administrative facilities necessary for support
	  ○ The grounds at museums and historic sites are not eligible
	  ○ Open natural areas/features or entities that promote the preservation/conservation of such areas are not eligible
	• Residential and other services for battered spouses
	• Residential services for individuals with disabilities
	• Senior citizen centers
	• Shelter workshops that create products using the skills of individuals with disabilities
	• Zoos
	• Performing arts centers with a primary purpose of producing, facilitating, or presenting live performances, including:
	  ○ Construction of production materials
	  ○ Creation of artistic works or productions
	  ○ Design
	  ○ Professional training
	  ○ Public education
	  ○ Rehearsals
	• Public broadcasting that monitors, receives, and distributes communications from the Emergency Alert System

Facilities that do not provide medical care, but do provide: • Alcohol and drug treatment • Assisted living • Custodial care, even if the facility is not open to the general public (including essential administration and support facilities) • Rehabilitation	
With the exception of custodial care facilities and museums, administrative and support buildings essential to the operation of PNP non-critical series are NOT eligible facilities.	

Appendix D: PA Site Sheet Example

SHEET 1 OF SHEETS

FEDERAL EMERGENCY MANAGEMENT AGENCY PRELIMINARY DAMAGE ASSESSMENT SITE ESTIMATE			DATE
PART I - APPLICANT INFORMATION			
COUNTY	NAME OF APPLICANT	NAME OF LOCAL CONTACT	PHONE NO.

PART II - SITE INFORMATION

KEY FOR DAMAGE CATEGORY *(Use appropriate letters in the "category" blocks below)*

a. DEBRIS REMOVAL	d. WATER CONTROL FACILITIES	g. FACILITIES UNDER CONSTRUCTION
b. PROTECTIVE MEASURES	e. PUBLIC BUILDINGS	h. PRIVATE NON-PROFIT
c. ROADS AND BRIDGES	f. PUBLIC FACILITIES	I. PUBLIC RECREATION

SITE NO.	CATE-GORY	LOCATION *(Use map location, address, etc.)*		
DESCRIPTION OF DAMAGE				
IMPACT:			% COMPLETE	COST ESTIMATE
SITE NO.	CATE-GORY	LOCATION *(Use map location, address, etc.)*		
DESCRIPTION OF DAMAGE				
IMPACT:			% COMPLETE	COST ESTIMATE
SITE NO.	CATE-GORY	LOCATION *(Use map location, address, etc.)*		
DESCRIPTION OF DAMAGE				
IMPACT:			% COMPLETE	COST ESTIMATE
SITE NO.	CATE-GORY	LOCATION *(Use map location, address, etc.)*		
DESCRIPTION OF DAMAGE				
IMPACT:			% COMPLETE	COST ESTIMATE

NAME OF INSPECTOR	AGENCY	PHONE NO. OFFICE	HOME

FEMA Form 90-81, JAN 84 [M/S Excel]

Appendix E: IA Damage Assessment Matrix

Assessment Matrix for Manufactured Homes

Degree of Damage	Definition	For Flood Damage	For Damage Other Than Flood (e.g., Wind Driven Rain, Earthquake)
Affected	This category includes residences with cosmetic damage only. It also applies to residences with damage to a porch, carport, garage, and/or an outbuilding not for commercial use, etc.	▪ No damage affecting habitability; cosmetic damage only.	The dwelling's frame is not bent, twisted, or otherwise compromised. **No structural components of the dwelling have been damaged** (e.g., windows, doors, wall coverings, roof, bottom board insulation, ductwork, and/or utility hook up).
Minor	The residence is damaged and requires minimal repairs.	▪ Water line is below the floor system. ▪ Skirting or HVAC is impacted. ▪ There is no structural damage to the residence and it has not been displaced from the foundation.	▪ There is no structural damage to the residence and it has not been displaced from the foundation. ▪ Nonstructural components have sustained damage - e.g. windows, doors, wall coverings, roof, bottom board insulation, ductwork, and/or utility hook up. ▪ Skirting or HVAC is impacted.
Major	The residence has sustained structural or significant damage that require extensive repairs.	▪ Water has come into contact with the floor system. ▪ The residence has been displaced from the foundation, block or piers and other structural components have been damaged.	▪ The residence has been displaced from the foundation, block or piers and other structural components have been damaged.
Destroyed	The residence is a total loss.	• The residence is a total loss.	▪ The residence's frame is bent, twisted, or otherwise compromised. ▪ The residence is missing the roof covering or the structural ribbing has collapsed for the majority of the roof system.

Damage Assessment Matrix for Conventionally Built Homes

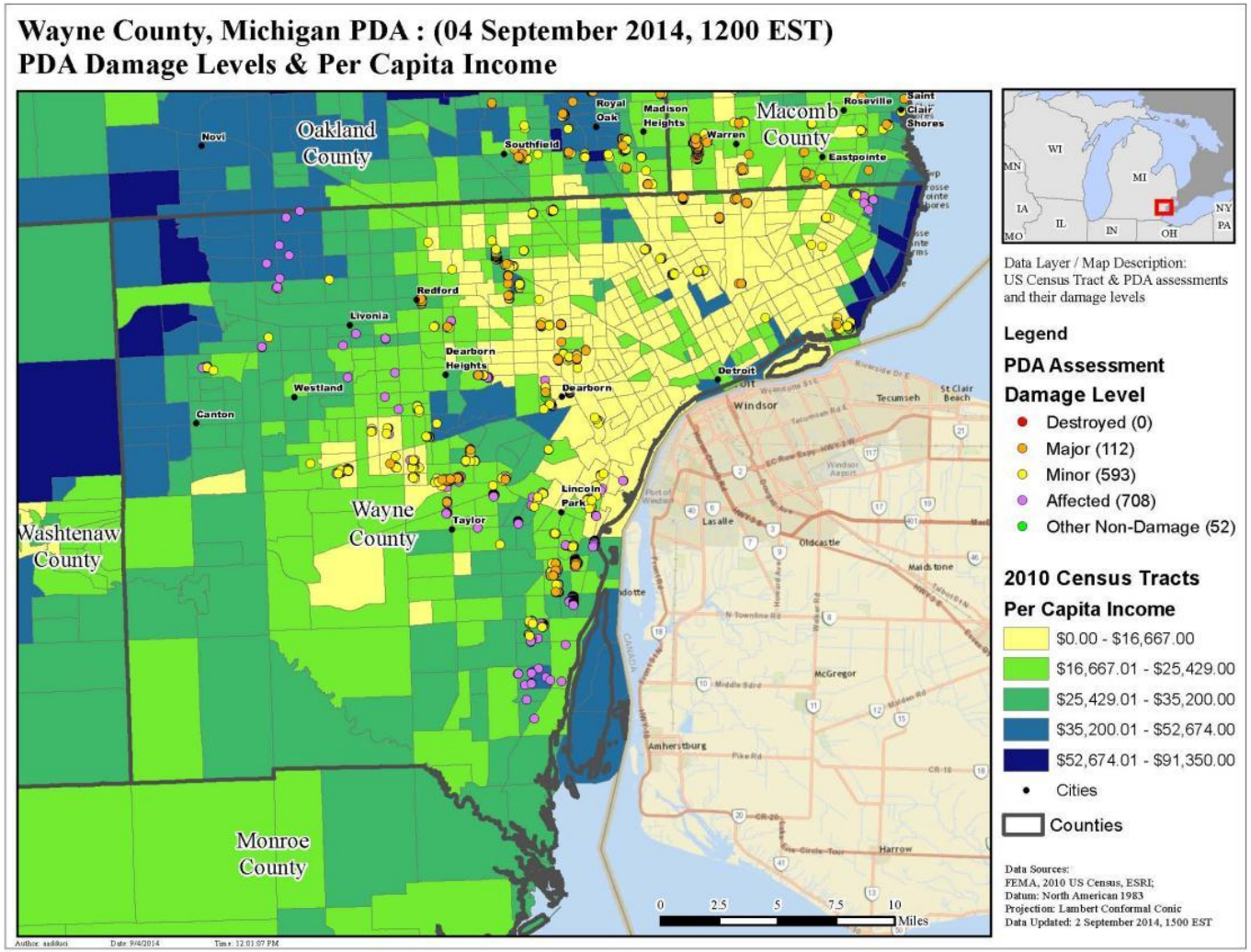
Category of Damage	Definition	Flood Examples	Non-Flood Examples
Affected	Residences with minimal damage to the exterior and/or contents of the home.	▪ Any water line in the crawl space or basement when essential living space or mechanical components are not damaged or submerged	▪ Partial missing shingles or siding. ▪ Cosmetic damage such as paint discoloration or loose siding. ▪ Broken screens. ▪ Gutter damage and debris. ▪ Damage to an attached structure such as a porch, carport, garage, or outbuilding not for commercial use. ▪ Damage to landscaping, retaining walls, or downed trees that do not affect access to the residence.
Minor	Encompasses a wide range of damage that does not affect the structural integrity of the residence.	▪ Water line up to 18 inches in an essential living space. ▪ Damage to mechanical components (e.g. furnace, boiler, water heater, HVAC, etc.).	▪ Nonstructural damage to roof components over essential living space to include shingles e.g. roof covering, fascia board, soffit, flashing, and skylight. ▪ Non structural damage to the interior wall components to include drywall, insulation ▪ Non structural damage to exterior components ▪ Multiple small vertical cracks in the foundation. ▪ Damage to chimney to include, tilting, fallen, cracks, or separated from the residence. ▪ Damage to mechanical components (e.g. furnace, boiler, water heater, HVAC, etc.). ▪ Damage or disaster related contamination to a private well or septic system
Major	A residence may be categorized as having major damage when it has sustained significant structural damage and requires extensive repairs.	▪ Water line above 18 inches in an essential living space, a water line above the electrical outlets, or a waterline on the first floor of a residence with a basement.	▪ Failure or partial failure to structural elements of the roof over required rooms to include rafters, ceiling joists, ridge boards, etc. ▪ Failure or partial failure to structural elements of the walls to include framing, sheathing, etc. ▪ Failure or partial failure to foundation to include crumbling, bulging, collapsing, horizontal cracks of more than two inches, and shifting of the residence on the foundation of more than six inches.
Destroyed	The residence is a total loss, or damaged to such an extent that repair is not feasible.	▪ Complete failure of two or more major structural components (e.g., collapse of basement walls, foundation, walls, or roof).	▪ Only foundation remains. ▪ A residence that will require immediate demolition or removal because of disaster-related damage or confirmed imminent danger (e.g., impending landslides, mudslides, or sinkholes).

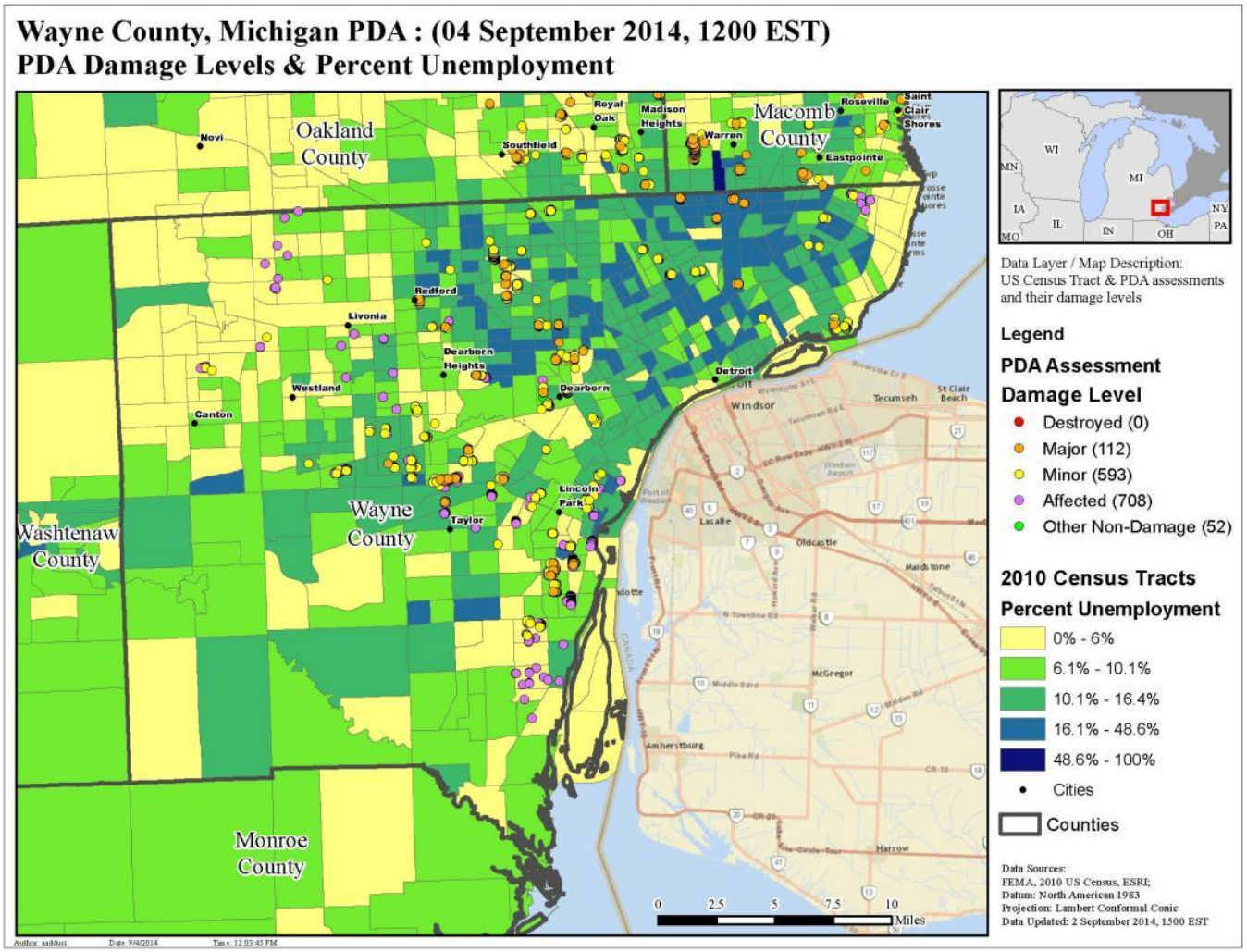
Appendix F: IA Insurance Matrix

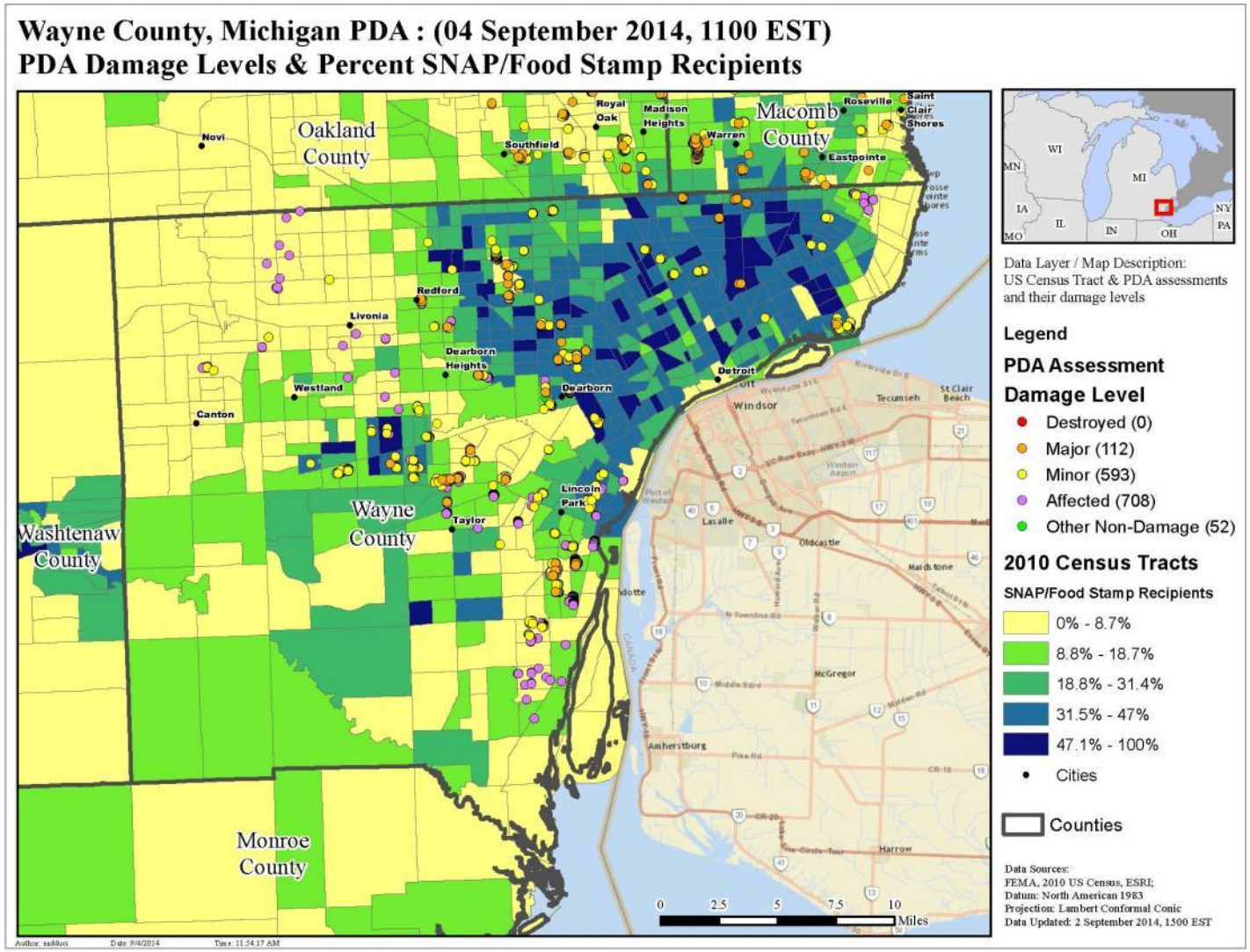
Insurance Type	Property Covered	Property Not Covered	Perils Covered	Perils Not Covered
Flood	***Owners Only:*** all real property from the first floor up; real property in basement below ground level necessary for habitability (e.g., structural wall, furnace, water heater, main panel); separate structures such as storage buildings; cost of preventing flood damage to home; removal of debris deposited by covered peril ***Homeowners and Renters:*** property in basement necessary for habitability (e.g., washer and dryer), all personal property in dwelling and separate enclosed structures (see property not covered); personal property stored away from premises	***RP*:** Water wells; well pumps; oil or propane tanks; septic tanks; seawalls; retaining walls; washouts (access); dikes ***PP:*** property stored in basements below grade level as identified by the individual policy	General condition of flooding, (e.g. overflow of inland or tidal waters; the unusual and rapid run-off or accumulation of surface waters from any source); mudflow/mudslide; seepage caused by flood (e.g. ground saturation or seeping under doors from rising water) {Note: not all perils listed are included nationwide or in OCONUS areas, please consult with Local/State or Municipalities Insurance Commissioners for details}	Anything other than perils listed, e.g. WDR; landslide; sewer backup when no general flood exists; seepage not caused by flood (e.g. melting snow or WDR blowing water under doors) {Note: not all perils listed are excluded nationwide or in OCONUS areas, please consult with Local/State or Municipalities Insurance Commissioners for details}
EQ, SBU and other riders	Any property covered by the policy rider.	Any property excluded from coverage under the policy the rider is attached.	Only the peril(s) specified on the rider	All perils except those specified by the rider

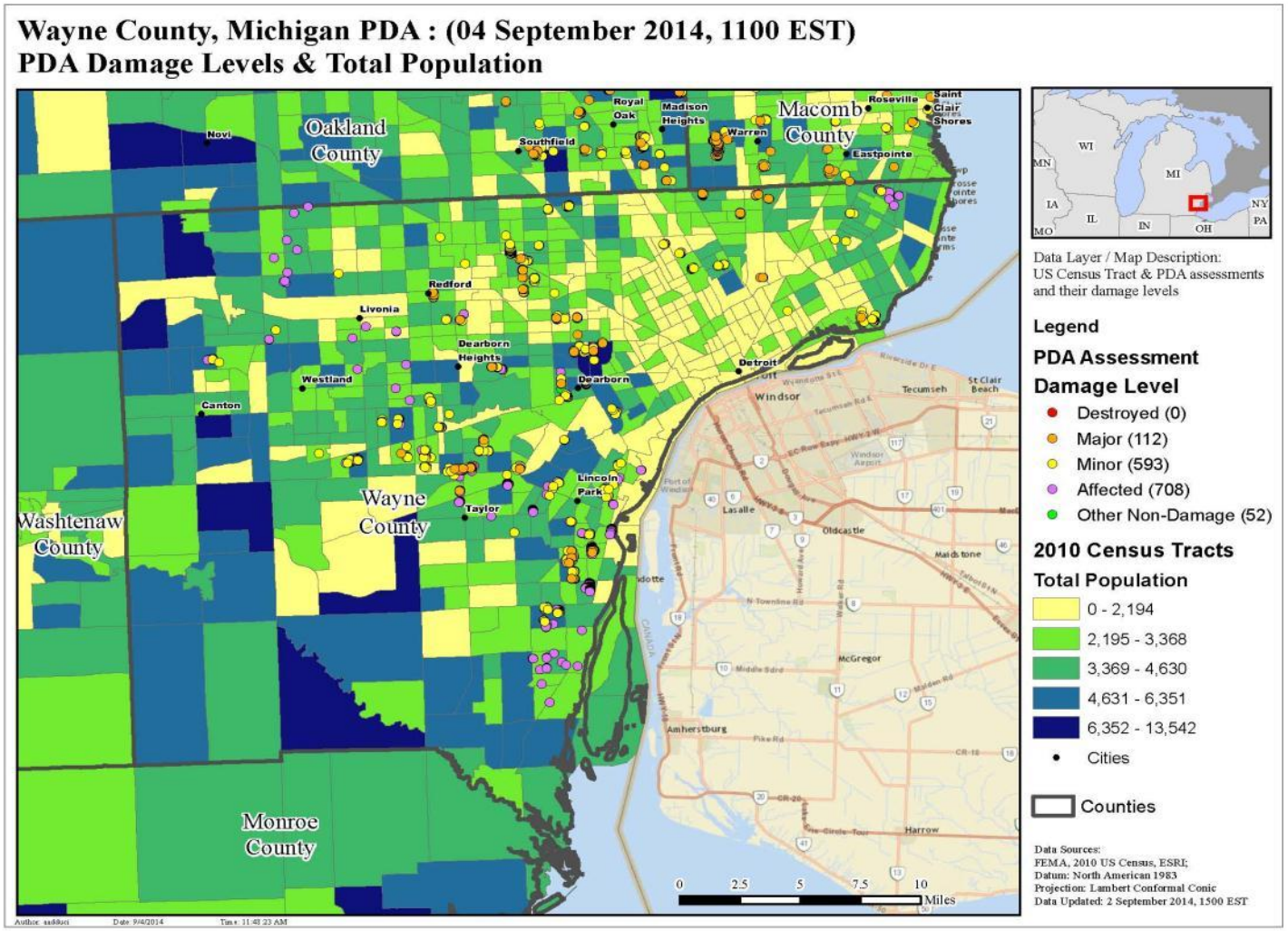
Insurance Type	Property Covered	Property Not Covered	Perils Covered	Perils Not Covered
Home owners or Renters	***Owners:*** all real property, including separate structures; removal of debris deposited by covered peril; personal property, Additional Living Expenses (ALE) for covered perils. ***Renters:*** all personal property, including personal property away from premises and ALE for covered perils.	Seawalls; retaining walls; washouts (access)	Wind; hail; lightning; falling objects including trees; freezing of plumbing; weight of ice, snow, or sleet; fire; smoke; volcanic eruption; power surge; explosion	Surface waters or flood; rain through doors, windows, or bad roof; seepage; landslides; mudslides; earthquake; sewer backup Sewer back up is usually covered in an endorsement to the policy
Manufactured Home	Manufactured home, including separate structures; removal of debris deposited by covered peril; cost of emergency repairs or removal to protect the manufactured home; ALE for covered perils; All personal property, including personal property away from premises. Structural only coverage excludes personal property and ALE coverage.	Seawalls; washouts (outside damage)	Wind; hail; lightning; falling objects including trees; freezing of plumbing; weight of ice, snow, or sleet; fire; smoke; volcanic eruption; power surge; explosion Flood may or may not be covered depending on the contract	Sewer backup; leakage from rain, snow, or sleet; freezing or electrical failure, mudslide, earthquake; Flood may or may not be covered depending on the contract Electrical failure does not pertain to power surges, only to situations where electrical service stops and there is no damage to the home
Condominium	***Unit:*** Structural elements not shared by other tenants or owned by the association, generally from the sheetrock in, including sheetrock, paneling, wall covering; ALE for covered perils; All personal property, including personal property away from premises ***Master:*** Structural elements shared by other tenants or owned by the association, generally from the studs out	Seawalls; retaining walls; washouts (access)	Wind; hail; lightning; falling objects including trees; freezing of plumbing; weight of ice, snow, or sleet; fire; smoke; volcanic eruption; power surge explosion	Surface waters or flood; rain through doors, windows, or bad roof; landslides; mudslides; earthquake; sewer backup; leakage from rain, snow, or sleet; freezing or electrical failure

Appendix G: IA GIS Product Examples




Wayne County, Michigan PDA : (04 September 2014, 1200 EST)
PDA Damage Levels & Percent Unemployment
Oakland County
Macomb County
Wayne County
Washtenaw County
Monroe County
Novi
Southfield
Royal Oak
Madison Heights
Warren
Roseville
Saint Clair Shores
Eastpointe
Redford
Livonia
Dearborn Heights
Dearborn
Westland
Canton
Detroit
Windsor
Tecumseh
St Clair Beach
Lincoln Park
Taylor
Lasalle
Oldcastle
Maidstone
McGregor
Amherstburg
Harrow
0 2.5 5 7.5 10 Miles
WI
MN
MI
IA
IL
IN
OH
MO
NY
PA
Data Layer / Map Description:
US Census Tract & PDA assessments and their damage levels
Legend
PDA Assessment Damage Level
Destroyed (0)
Major (112)
Minor (593)
Affected (708)
Other Non-Damage (52)
2010 Census Tracts Percent Unemployment
0% - 6%
6.1% - 10.1%
10.1% - 16.4%
16.1% - 48.6%
48.6% - 100%
Cities
Counties
Data Sources:
FEMA, 2010 US Census, ESRI;
Datum: North American 1983
Projection: Lambert Conformal Conic
Data Updated: 2 September 2014, 1500 EST


Wayne County, Michigan PDA : (04 September 2014, 1100 EST)
PDA Damage Levels & Percent SNAP/Food Stamp Recipients
Oakland County
Macomb County
Wayne County
Washtenaw County
Monroe County
Novi
Southfield
Royal Oak
Madison Heights
Warren
Roseville
Saint Clair Shores
Eastpointe
Redford
Livonia
Dearborn Heights
Dearborn
Westland
Canton
Detroit
Lincoln Park
Taylor
Windsor
Tecumseh
St Clair Beach
Lasalle
Oldcastle
Maidstone
McGregor
Amherstburg
Harrow
0 2.5 5 7.5 10 Miles
WI
MN
MI
IA
IL
IN
OH
MO
NY
PA
Data Layer / Map Description:
US Census Tract & PDA assessments and their damage levels
Legend
PDA Assessment
Damage Level
Destroyed (0)
Major (112)
Minor (593)
Affected (708)
Other Non-Damage (52)
2010 Census Tracts
SNAP/Food Stamp Recipients
0% - 8.7%
8.8% - 18.7%
18.8% - 31.4%
31.5% - 47%
47.1% - 100%
Cities
Counties
Data Sources:
FEMA, 2010 US Census, ESRI;
Datum: North American 1983
Projection: Lambert Conformal Conic
Data Updated: 2 September 2014, 1500 EST


Wayne County, Michigan PDA : (04 September 2014, 1100 EST)
PDA Damage Levels & Total Population
Oakland County
Macomb County
Wayne County
Washtenaw County
Monroe County
Novi
Southfield
Royal Oak
Madison Heights
Warren
Roseville
Saint Clair Shores
Eastpointe
Redford
Livonia
Dearborn Heights
Dearborn
Westland
Canton
Detroit
Windsor
Tecumseh
St Clair Beach
Lincoln Park
Taylor
Lasalle
Oldcastle
Maidstone
McGregor
Amherstburg
Harrow
0 2.5 5 7.5 10 Miles
WI
MN
MI
IA
IL
IN
OH
NY
PA
MO
Data Layer / Map Description:
US Census Tract & PDA assessments and their damage levels
Legend
PDA Assessment
Damage Level
Destroyed (0)
Major (112)
Minor (593)
Affected (708)
Other Non-Damage (52)
2010 Census Tracts
Total Population
0 - 2,194
2,195 - 3,368
3,369 - 4,630
4,631 - 6,351
6,352 - 13,542
Cities
Counties
Data Sources:
FEMA, 2010 US Census, ESRI;
Datum: North American 1983
Projection: Lambert Conformal Conic
Data Updated: 2 September 2014, 1500 EST

Appendix H: IA Street Sheet Example

City_____ County_____ State_____ Disaster Type_____ Date_____ Page _____ of _____

FEMA_____ State_____ Local_____ SBA_____

Address	Affected Habitable								Minor								Major								Destroyed															
	Single Family		Multi Family		Manufactured Home		Low Income	Insured	Single Family		Multi Family		Manufactured Home		Low Income	Insured	Single Family		Multi Family		Manufactured Home		Low Income	Insured	Single Family		Multi Family		Manufactured Home		Low Income	Insured	Not Primary	Inaccessible	Private Road or Bridge	Utilities Out	Water Depth		Other
	O	R	O	R	O	R			O	R	O	R	O	R			O	R	O	R	O	R			O	R	O	R	O	R							Basement	Living Area	
	1	2	1	2	1	2	3	4	1	2	1	2	1	2	3	4	1	2	1	2	1	2	3	4	1	2	1	2	1	2	3	4	5	6	7	8	9	10	11
Totals																																							
Category Totals																																							

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