State of Washington
Emergency Management Division

POST-DISASTER SAFETY ASSESSMENT PROGRAM(SAP) DEVELOPMENT FOR THE STATE OF WASHINGTON

Volunteer Emergency Worker & Non-Governmental Organization Capabilities Research Study & Workshop

September 2014

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Post-Disaster Safety Assessment Program (SAP) Development for the State of Washington

Volunteer Emergency Worker and Non-Governmental Organization Capabilities Research Study and Workshop

September 2014

Prepared for

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Executive Summary

The recent earthquakes and disasters around the globe have been a potent reminder about the importance of disaster preparedness in our communities. After such large-scale disasters involving buildings, bridges, and lifeline infrastructure, assessing the damage and safety of our infrastructure is necessary for post-disaster response and recovery. It is critical that these assessments are performed quickly in order for the public to return to their homes, offices, and public spaces. Currently, there is an extensive network of architects and engineers with training in post-disaster safety assessment of damaged structures within the state of Washington. The training of these professional has been ongoing for almost two decades and their registration has been with county level emergency management organizations. A problem with the current system is that there is no state-level program to organize, register or deploy these resources. Consequently, counties do not know where these county-to-county resources exist and there is no state-level organization of these volunteers to provide state-to-state level mutual aid assistance. Therefore, a robust and systematic program is required to provide a state-level organization of these highly skilled resources within the State of Washington.

The University of Washington (UW) was engaged by the Emergency Management Division of the Washington State Military Department (WA EMD) to conduct a study assessing the possible ways to implement a sustainable, state wide, post-disaster Safety Assessment Program (SAP) in the State of Washington. Researchers from both the UW along with leaders from various non-governmental organizations (NGO's) that have been active in training their members in post-disaster safety assessment procedures have collaborated on this study. This study documents the various available state-level resources, summarizes select other state-level safety assessment programs, and makes recommendations for implementing a safety assessment program in Washington State.

A workshop was conducted with participation by select governmental agencies and non-governmental organizations (NGOs), to collectively review the state's current volunteer post-disaster safety evaluation capabilities and resources, and provided a venue to collaboratively discuss criteria and priorities for implementing a state-level Safety Assessment Program. Several important ideas and concepts emerged from the workshop that will be key elements to the development of a state-level safety assessment program. Based on this workshop and the research of several similar programs around the country, this study concluded that the following actions should taken by the WA EMD in order to implement a state-wide post-disaster Safety Assessment Program:

1. A Safety Assessment Program Responder Volunteer Database should be developed using the Department of Health's WAserve Emergency Registry of Volunteers database.
2. A statewide volunteer credentialing system should be developed and deployed. It is recommended that this system be based on the Washington Association of Building Officials (WABO) Building Safety Emergency Responder Registration Program.
3. A statewide SAP Volunteer Training Program should be developed based on the current ATC-20/45 and California Office of Emergency Management (Cal OES) SAP training curriculum. This curriculum can then be utilized by the NGO's in the training of their members and other state resources.

4. Incorporate a mechanism within the WA EMD emergency management system to utilize the state-level safety assessment programs NGO's expert resource of engineers, architects, and building inspectors to be deployed to assist in post-disaster evaluations under the Non-Governmental (NGO) and Voluntary Organizations section of the Washington State Comprehensive Emergency Management Plan – Basic Plan.

1.0 Introduction

The Washington State Department of Emergency Management (WA DEM) has contracted with the University of Washington Department of Urban Design and Planning (UW UDP) and Department of Civil & Environmental Engineering (UW CEE) to perform a study and conduct a workshop to better define the capabilities, activation, deployment, coordination, training, and credentialing of post-disaster safety evaluation volunteers in the State of Washington.

There are currently many non-governmental organizations (NGO's) in the State of Washington that have been training their members in the Post-Disaster Safety Evaluation of Buildings (ATC-20/45) protocols and have rosters of hundreds of trained volunteers available to provide post-disaster safety evaluations. A partial list of these NGO's that have Washington State-based organizations with some sort of volunteer emergency worker capability includes:

- Structural Engineers Association of Washington (SEAW)
- National Council of Structural Engineering Associations (NCSEA)
- American Society of Civil Engineers (ASCE)
- American Institute of Architects (AIA)
- Washington Association of Building Officials (WABO)
- Society of American Military Engineers (SAME)
- Various Community Emergency Response Teams (CERT)

Some of these NGO's have organizational lists of trained members and procedures for volunteer callout and activation while others have less developed systems.

Figure 1.0-1. SAP Evaluators at the 2011 Christchurch Earthquake (D. Swanson Photo).

The focus of this study was to survey each organization to determine their resources; capabilities, capacities, training requirements, and credentialing, to better document the existing volunteer resource capabilities of these NGO's. A workshop was conducted with lead individuals of the NGO's and WA EMD personnel to determine a framework for organizing these ATC 20-45/Cal OSE SAP trained NGO volunteers for activation and deployment through the State of Washington Emergency Management framework or other local or state agencies.

Figure 1.0-2. Damaged Building from 2011 Christchurch Earthquake (D. Swanson Photo).

The objective of this study is to document the current capabilities of the NGO's resources, outcomes of the WA EMD and NGO workshop, and outline opportunities for the development of an organizational structure that can be implemented to better utilize the qualified post-disaster safety evaluation volunteer capabilities of the NGO's and their State of Washington affiliated organizations.

2.0 Post-Disaster Safety Assessment Programs (SAP) Components

The following is a brief summary of current post-disaster safety assessment programs, the standard of care, training requirements, and credentialing.

2.1 Post-Disaster Safety Evaluation of Buildings Standards (ATC-20/45)

The Applied Technology Council (ATC) is a private, nonprofit corporation established in 1973 by the Structural Engineers Association of California SEAOC) to develop state-of-the-art engineering resources and applications for use in mitigating the effects of natural and man-made disasters in the built environment.

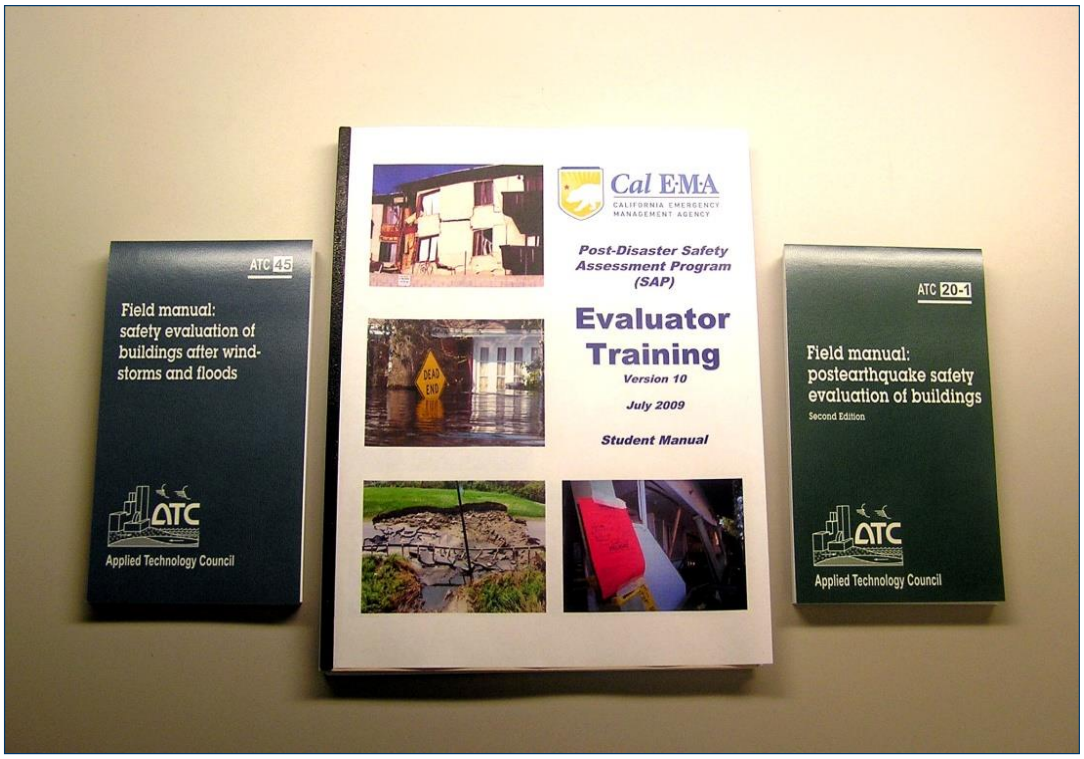


Figure 2.1-1. Post-Disaster Safety Evaluation Documents (ATC-20, CAL OES SAP, ATC-45).

In July 1987, the Applied Technology Council initiated a FEMA funded project to develop procedures for evaluating building safety after earthquakes. This led to the development of the ATC-20 report Procedures for Post-Earthquake Safety Evaluation of Buildings, which was published in 1989. This standard was successfully employed to evaluate the safety of buildings damaged in the 1989 Loma Prieta Earthquake in the San Francisco bay area.

Since its publication, ATC-20 and its safety evaluation procedures have become the de facto standard for the United States and beyond. In 2005, ATC published the document entitled Procedures for Post-Wind and Flood Safety Evaluation of Buildings (ATC-45) that utilized the

same safety evaluation methodology and placarding system as the previous ATC-20 procedures. This document was widely used after Hurricanes Katrina and Rita in 2005.

Figure 2.1-2. Post-Disaster Safety Evaluation Placards (ATC-20/45).

Today, the ATC-20/45 standards provide procedures and guidelines for the safety evaluation of damaged buildings. These procedures and guidelines are written specifically for volunteer structural engineers, architects, engineers, and others trained in the procedures. The ATC-20 and ATC-45 procedures are the standard of care for safety assessment volunteers who will be assisting public officials in determining on-the-spot safety assessment evaluations and decisions regarding the continued use and occupancy of damaged buildings.

2.2 California OES Safety Assessment Program (Cal OES SAP)

The California Governor's Office of Emergency Services (CAL OES, formerly Cal Emergency Management Agency, Cal EMA) manages a Safety Assessment Program (SAP) for training and deploying post-earthquake building inspectors. The Safety Assessment Program utilizes volunteers and mutual aid resources to provide professional engineers and architects and certified building inspectors to assist local governments in safety evaluation of their built environment in an aftermath of a disaster.

The program is managed by Cal OES with cooperation from professional organizations (NGO's) that are active in training their membership in SAP procedures. The NGO's consist of the California Association of Building Officials (CALBO), the Structural Engineers Association of California (SEAOC), the American Society of Civil Engineers (ASCE), and the American Institute of Architects (AIA). These broad NGO resources provide a wide array of expertise with CALBO providing rapid evaluations of buildings, SEAOC providing rapid and detailed

evaluation of structures, ASCE providing detailed evaluation of infrastructure, and AIA providing rapid and detailed evaluation of buildings. These NGO's represent a large post-disaster volunteer workforce with significant expertise.

The California OES SAP produces two resources, SAP Evaluators, described above, and SAP Coordinators, which are local government representatives that coordinate the safety assessment program. The Cal OES Safety Assessment Program office issues CAL OES SAP registration identification cards to all Cal OES SAP Evaluators that have successfully completed the program requirements.

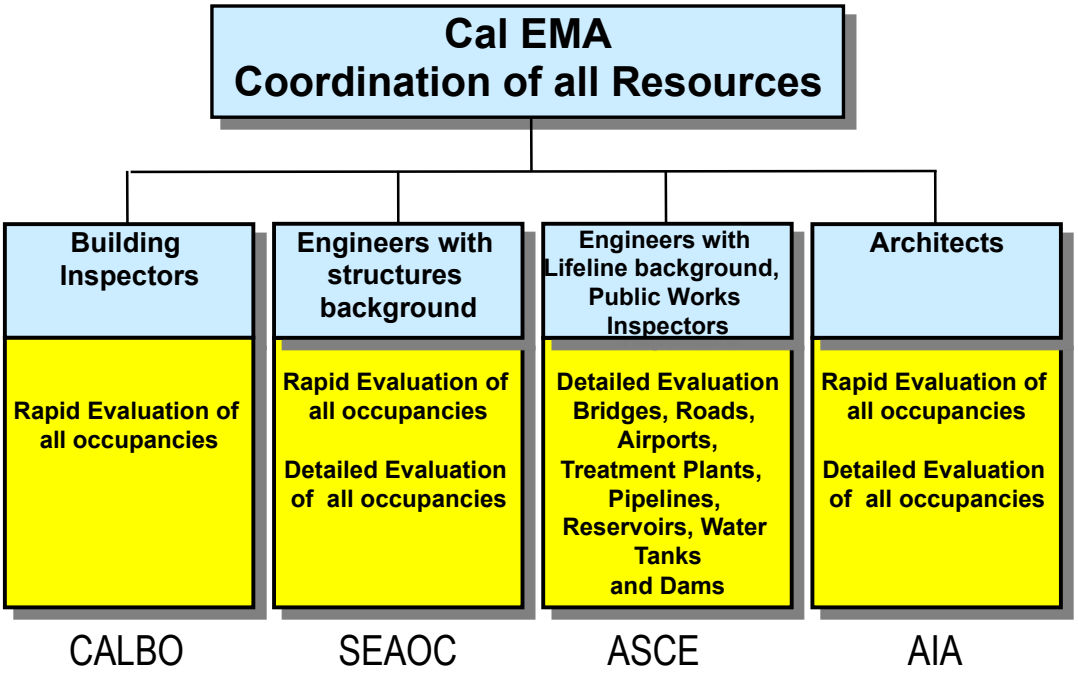


Figure 2.2-1. CAL OES SAP Evaluator Resource Types (Cal OES SAP).

Within the last decade, the Cal OES Safety Assessment Program (SAP) training program has been widely implemented throughout the United States by ASCE, SEA's, and AIA with significant numbers of Cal OES SAP volunteers registered within other states. The Cal OES Safety Assessment Program has significant annual financial support from the State of California and FEMA that utilizes fulltime government staff to manage and administer the program. The State California OES SAP Program has become a model program to emulate.

2.3 Incident Command System (ICS)

The Incident Command System (ICS) is a standardized, on-scene, all-hazards incident management approach that:

1. Allows for the integration of facilities, equipment, personnel, procedures and communications operating within a common organizational structure.

2. Enables a coordinated response among various jurisdictions and functional agencies, both public and private.
3. Establishes common processes for planning and managing resources.

The ICS approach is flexible and can be used for incidents of any type, scope and complexity. ICS also allows its users to adopt an integrated organizational structure that can be scaled to match the complexities and demands of single or multiple incidents.

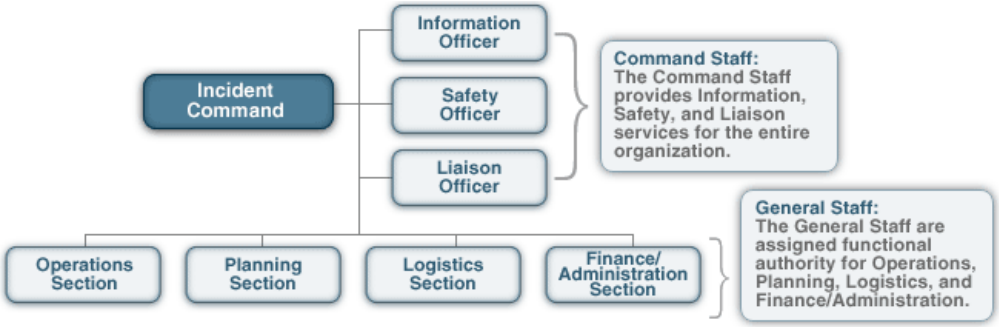


Figure 2.3-1. FEMA Incident Command System (ICS) Structure (FEMA.gov).

All levels of government use ICS: federal, state, tribal and local. It is also used by many NGO's and the private sector. ICS is also applicable across disciplines as it is typically structured to facilitate activities in five major functional areas: Command, Operations, Planning, Logistics and Finance/Administration. Each of the functional areas are only utilized based on the needs of the incident and are scaled to fit the size and complexity of the incident.

As a management system, the ICS is extremely useful in emergency incidents and disaster situations. ICS not only provides an organizational structure for incident management but it also guides the process for planning, building and adapting that structure to the incident or disaster situation. Using ICS for every incident or planned event helps hone and maintain skills needed for the large-scale incidents. It is important that Safety Assessment Program NGO volunteers have a basic understanding of ICS and how emergency services personnel and governmental agencies use it.

2.4 WABO SAP Qualifications Criteria

In 2011, the Washington State Legislature passed a bill that enacted the Washington Intrastate Building Safety Mutual Aid (IBSMA) System that established the intrastate building safety mutual aid system. Member jurisdictions of the IBSMA System may request mutual aid assistance from other member jurisdictions to respond to, mitigate, or recover from a building safety emergency, or for participation of other member jurisdictions in authorized drills or exercises. An outcome of this law was action by WABO to administer the credentialing of the state's building safety responders wishing to participate in the newly created IBSMA system.

Under the system responders are assigned a "type" that indicates their qualifications and capabilities. Applicants for credentialing indicate the type for which they are applying and provide documentation of required training and education appropriate for that level. The WABO credentialing committee reviews and approves all applications for credentials. Upon approval, responders receive a photo identification badge indicating their responder type and other competencies that may be of use in the response to emergencies.

In an effort to develop a catalogue of responder capabilities applicants are asked to provide a list of additional expertise that they are able to provide in an emergency response. That information is currently maintained in a database by WABO that will be made available to jurisdictions seeking emergency assistance.

Table 2.4-1. WABO SAP Qualifications Credential Criteria.

Type	Duties/Limits	Minimum Qualifications
I	- Structural evaluation only: Multi-family and commercial structures over 5 stories and complex structures	- ICS 100 - Registered civil or structural engineer - ATC 20 or 45 or CAL-EMA
II	- Non-structural evaluation: all multi-family and commercial structures - Structural evaluation: Multi-family and commercial structures up to 5 stories	- ICS 100 - ICC Building Plans Examiner or Building Inspector Cert or Registered Architect - ATC 20 or 45 or CAL-EMA
III	- Wood-framed, multi-family and commercial structures up to 3 stories	- ICS 100 - ICC Residential Plans Examiner or Inspector Cert - ATC 20 or 45 or CAL-EMA
IV	- Single family residences - Accessory structures	- ICS 100 - Any ICC Certification - ATC 20 or 45 or CAL-EMA

2.5 ASCE National SAP Credentialing Initiative

The American Society of Civil Engineers (ASCE) Committee on Critical Infrastructure (CCI) is working on developing a national Safety Assessment Program (SAP) credentialing system, which would identify various types of engineers for performing post-disaster safety assessment evaluations. These SAP qualification criteria have been vetted through the Federal Emergency Management Agency (FEMA) for consistency with FEMA disaster procedures and Emergency Support Functions (ESFs).

The ASCE CCI National SAP credentialing initiative is specifically targeted at engineers as resource types. Through this initiative, the term "Response Engineer" was created and various levels of qualification types were created. The Response Engineer type ranges from Type I being the highest level of qualifications to Type V being the lowest level of Response Engineer. Type I Response Engineers are highly trained US&R Structures Specialists (or equivalent) that can provide unrestricted expertise to disaster search & rescue as well as recovery. The Type V Response Engineer has the least training requirements and is intended to provide technical and administrative support assistance to SAP Evaluators.

The ASCE CCI National SAP Credentialing initiative currently defines more FEMA-based National Incident Management System (NIMS) on-line training requirements than the traditional state-specific training requirements from the Cal OES SAP Program or currently defined WABO SAP Qualifications criteria. See Table 2.5-1 for qualifications criteria for the various ASCE Disaster Response Engineer types.

Table 2.5-1. ASCE Disaster Response Engineer Types and Qualifications Criteria.

Resource:	Disaster Response Engineer					
Category:	Public Works and Engineering					
Kind:	Personnel					
Type:		Response Engineer Type I	Response Engineer Type II	Response Engineer Type III	Response Engineer Type IV	Response Engineer Type V
Component	Metric					
Personnel	Area of Specialization	US&R Structures Specialist or Equivalent	US&R Structures Specialist Support (Warm Zone Operations Only)	Building Safety Assessment Engineer/Leader	Building Safety Assessment Engineer	Technical and Administrative Support Assistant
Personnel	Training	USACE Structures Specialist Course I USACE Structures Specialist Course II ATC-20 ATC-45 NIMS/NRF IS-100 IS-200 NIMS ICS-300 NIMS ICS-400 IS-700 IS-800 SCBA/APR Fit Testing WMD Awareness WMD Enhanced OPS FEMA Orientation Physical Examination 29 CFR 1910.120 (Haz-Mat Operations) CPR Certification NFPA 1670 Awareness GPS Ops & Land Navigation Duties of the Entrant per 29 CFR 1910.146 Appendix A Rope Skill Set Structural Collapse Technician Course (recommended)	USACE Structures Specialist Course I ATC-20 ATC-45 NIMS/NRF IS-100 IS-200 IS-700 IS-800 SCBA/APR Fit Testing WMD Awareness FEMA Orientation Physical Examination Haz-Mat Awareness CPR Certification NFPA 1670 Awareness GPS Ops & Land Navigation	P.E. , S.E., or R.A. California EMA Safety Assessment Program or ICC Disaster Responder Course NIMS/NRF IS-100 IS-700 IS-800 IS-803 IS-809 CPR Certification Physical Examination GPS Ops & Land Navigation	California EMA Safety Assessment Program or ICC Disaster Responder Course NIMS/NRF IS-100 IS-700 IS-800 IS-803 IS-809 CPR Certification Physical Examination GPS Ops & Land Navigation	ICC Disaster Responder Course Including: ATC-20 ATC-45 Or ATC-20 ATC-45 NIMS/NRF IS-100 IS-700 IS-800 IS-803 IS-809

It is important to note that the ASCE National SAP Credentialing Initiative is evolving and the training requirements may change as the initiative is further developed and refined. State level SAP credentialing programs may need to change as the ASCE National SAP Credentialing initiative is further refined and incorporated into FEMA-based Emergency Support Functions.

2.6 Volunteer Emergency Worker Liability

The State of Washington has a so-called "Good Samaritan Law" that provides indemnification for volunteer emergency workers. The Revised Code of Washington (RCW) Statutes 38.52.180

sets forth the legal obligation of the State of Washington to provide this indemnification for volunteer emergency workers. In essence, the law requires the state to accept liability for harm caused by acts arising from good faith attempts to comply with the requirements of the Emergency Worker Program. The state must also indemnify a worker who has been "appointed and regularly enrolled" as an emergency worker or who is an employee of the state or a local government. This indemnification covers both liability the worker may have incurred and injury or damage the worker may have suffered as a result of the worker's good faith compliance with the Emergency Worker Program. The indemnity does not cover acts of a worker that amount to willful misconduct, gross negligence, or bad faith.

The indemnity also covers providing assistance or transportation during an emergency or during approved training. To be covered, a volunteer must be registered with the WA EMD or a local emergency management organization and must be working under a declared disaster or state-authorized training exercised. We are fortunate that the State of Washington has good liability protections for volunteer emergency workers. Many states do not have such comprehensive volunteer emergency worker liability programs.

3.0 Select Existing Post-Disaster SAP NGO Programs & Activities

3.1 Workshop Participating Organizations

The following NGO's and Governmental Organizations were selected to participate in the workshop due to their long-standing involvement in post-disaster safety assessment training activities, emergency preparedness and response activities, and experience with disaster response and recovery within the State of Washington, as well as at the national level.

Non-Governmental Organizations

- Structural Engineer's Association of Washington (SEAW)
- American Society of Civil Engineers (ASCE)
- American Institute of Architects (AIA)

Governmental Organizations

- Washington Association of Building Officials (WABO)
- California Office of Emergency Services (Cal OES)
- Washington Office of Emergency Management (WA EMD)
- Federal Emergency Management Agency (FEMA)

3.2 Deployment Protocols

The following is a discussion of various participating entities, volunteer lists, deployment protocols, and how they may be currently inter-related.

3.2.1 Office of Emergency Services (Cal OES SAP)

The California Office of Emergency Services (Cal OES) runs a Safety Assessment Program (SAP). Under the SAP Program, they train and register potential volunteers, called SAP Evaluators. The training includes ATC-20 and ATC-45 and an introduction to Incident Command (ICS) organization.

The California SAP Evaluators registry currently includes more than 10,000 volunteer members. Building inspectors and Agency staff expected to help in post-disaster environments also take the ATC 20/45 and Cal OES SAP training. This training is for engineers, architects, building inspectors and others with general knowledge of design and construction.

The Cal OES SAP Training has become the de facto training standard for engineers, architects, and building inspectors not only with the State of California but also with within the State of Washington and throughout the United States. The Cal OES SAP program is well funded by the State of California with assistance by FEMA and is a model program due to its size, organization, and effectiveness.

3.2.2 State of Washington Volunteer Emergency Worker Program (WA EMD)

The State of Washington Emergency Management Division (WA EMD) is a division within the Washington State Military Department. The State of Washington Emergency Worker Program is enacted in state law by Revised Code of Washington (RCW) Statue 38.25 – Emergency Management Act and administered under Washington Administrative Code (WAC) 118-04 Emergency Worker Program to define the role of emergency workers and regulate emergency worker activities. WA EMD is directed to establish the program under RCW 38.52.310 and develop rules for its administration.

There are 18 classes of emergency workers. The different classes of emergency workers are shown in the table below:

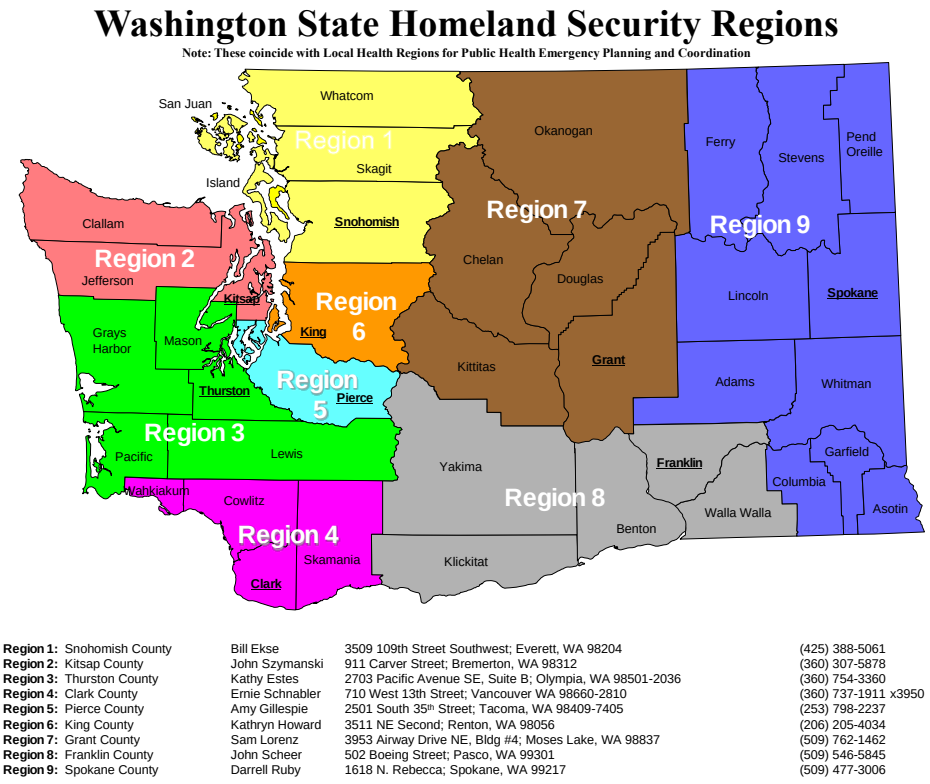
Table 3.2.2-1. State of Washington Emergency Worker Classifications.

Emergency Worker Classifications in Accordance with WAC 118-040-080	
Administration	Public Education
Aviation	Radiological
Communications	Search and Rescue
Engineering	Supply
Fire Service	Training
Hazardous Materials	Transportation
Law Enforcement	Underwater Diving
Mass Care	Utilities
Medical	

For the purposes of this study, volunteer emergency workers (architects, engineers, building officials, and other volunteers) for the post-disaster safety evaluation of buildings and infrastructure fall under the classification of Engineering. It is important to note that while the engineering classification of emergency worker is important to the post-disaster response and recovery of our communities, that it is one of many different classifications of emergency worker and therefore part of a much larger system of volunteers.

WAC 118-04-180 further sets forth responsibilities of authorized public officials that register and use emergency works and requires that they ensure that volunteers: 1.) meet basic qualifications have the requisite skills to accomplish their task, 2.) understand that local requirements may include more extensive and detailed criteria, 3.) are aware of their personal responsibilities, 4.) act in a safe manner, 5.) have an understanding of Incident Command System rules and principles.

Currently, in the State of Washington, the authority to register qualified emergency workers in the Emergency Worker Program rests with local directors of emergency management and the state EMD Director. This authority may be delegated. Volunteer emergency workers can only be mobilized by and under direction and control of an authorized public official and WA EMD must issue a mission number for the Emergency Worker Program protections to be in force.



Region 1:	Snohomish County	Bill Ekse	3509 109th Street Southwest; Everett, WA 98204	(425) 388-5061
Region 2:	Kitsap County	John Szymanski	911 Carver Street; Bremerton, WA 98312	(360) 307-5878
Region 3:	Thurston County	Kathy Estes	2703 Pacific Avenue SE, Suite B; Olympia, WA 98501-2036	(360) 754-3360
Region 4:	Clark County	Ernie Schnabler	710 West 13th Street; Vancouver WA 98660-2810	(360) 737-1911 x3950
Region 5:	Pierce County	Amy Gillespie	2501 South 35th Street; Tacoma, WA 98409-7405	(253) 798-2237
Region 6:	King County	Kathryn Howard	3511 NE Second; Renton, WA 98056	(206) 205-4034
Region 7:	Grant County	Sam Lorenz	3953 Airway Drive NE, Bldg #4; Moses Lake, WA 98837	(509) 762-1462
Region 8:	Franklin County	John Scheer	502 Boeing Street; Pasco, WA 99301	(509) 546-5845
Region 9:	Spokane County	Darrell Ruby	1618 N. Rebecca; Spokane, WA 99217	(509) 477-3006

Figure 3.2.2-1. WA EMD homeland Security Regions.

A long-standing issue of the Washington State-level Emergency Worker Program is that its administration is implemented locally. So for those NGO's that have been training and registering volunteer engineers and related emergency workers at the local level, no system is currently in place at the state level for these resources to be activated and managed at a state level. Consequently, with respect to volunteer engineers, architects, and building officials and inspector who are trained and qualified to perform post-disaster safety evaluations of buildings and structures, no state level repository of these highly trained and qualified volunteers currently exists. An outcome of this is the current fragmented registry of engineers and architects with local government organizations.

3.2.3 Structural Engineering Association of Washington (SEAW)

SEAW maintains an updated registry of members who have taken ATC-20/45 and Cal OES SAP training classes through SEAW-sponsored instruction. Through SEAW's statewide Disaster Preparedness & Response Committee, these safety assessment program training activities have been ongoing continuously for over two decades since 1990. To date, SEAW engineers have trained over 3000 people in the state of Washington to provide volunteer building safety assessments. SEAW maintains a list of over 400 ATC-20/45/CalOES SAP-registered volunteer engineers. The SEAW volunteer engineer database represents a significant resource of highly trained engineers that can provide a significant resource to emergency managers and building officials throughout the state of Washington.

3.2.4 The American Institute of Architects (AIA) Seattle

The American Institute of Architects (AIA) Seattle provides ATC-20/45/Cal OES SAP training and maintains a roster of trained volunteer architects. They have been providing an organized disaster preparedness and response committee for their local membership since 2005. The AIA Seattle volunteer architect database also represents a significant resource of highly trained architects that can provide a significant resource to emergency managers and building officials throughout the state of Washington.

3.2.5 National Council of Structural Engineers Associations (NCSEA)

In November of 2001, NCSEA formed an Ad Hoc committee named the Structural Engineering Emergency Committee (SEER Committee) to investigate establishing a national framework of volunteer structural engineers trained in post-disaster safety assessments and to encourage structural engineers to become more widely trained and nationally organized to assist local jurisdictions with post disaster assessment and recovery.

NCSEA developed and published a guide called the SEER Manual, for state and local level Structural Engineering Associations (SEA's) to develop, train, and deploy Safety Assessment Program engineers. NCSEA also developed a web-based database to make it easier to contact structural engineers for assessments following a disaster. The database lists those who are interested in assisting with post-disaster condition assessments of structures.

3.2.6 Washington Association of Building Officials (WABO)

The Washington Association of Building Officials (WABO) is a nonprofit, professional association of state, county, city, and town officials in the state of Washington engaged in the development, enforcement, and administration of building construction codes and ordinances. Membership includes building officials and inspectors, planners, architects, structural engineers, and others. Building Officials (WABO Members) are the fundamental clients of any Post-Disaster Safety Assessment Program (SAP). Thus, the credentialing work by WABO (described earlier) will play a key role in the development of a more uniformly organized state-level post-disaster building and infrastructure safety assessment program.

3.2.7 Washington State Department of Health

The State of Washington Department of Health (WA DOH) has become increasingly active in improving the state of disaster preparedness and response with state-regulated healthcare facilities.

3.2.7.1 WA DOH Strike Teams

A recent initiative is the formation of WA DOH Strike Teams that have been established to provide building safety evaluations for hospitals & other state licensed healthcare facilities within communities where pre-arrangements may be made with the local building officials. The following is an edited excerpt from a recent WABO White Paper on the WA DOH Strike Team

initiative that explains their initiative in post-disaster safety evaluations of state licensed healthcare facilities:

> *"After an earthquake, building officials are generally responsible for providing ATC-20 evaluations of the structures within their jurisdiction. Building owners generally want to know as soon as possible whether or not their building is safe to occupy. WA DOH also has a direct interest in the continued safe operation of all state licensed healthcare facilities. If the earthquake is large enough, the building official may not have the resources available to provide those evaluations in a timely manner. DOH Strike teams are specifically specialize to assess the condition of various specialty building systems relating to the safe delivery of healthcare (such as medical gas, critical care, life safety & emergency power systems (including generators, pumps, plumbing and other support building systems which must remain in operation, in good repair for the facility to continue to function as intended).*
>
> *Pre-designated SAP Certified DOH Strike Teams could aid the building official in performing the evaluations, but also engaging their services (if desired by the Local AHJ). Providing orientation to the strike teams of the local jurisdiction's policies, and getting them assigned to evaluate particular buildings or focus areas all take time (most of these policy and focus issues can be pre-arranged). Each of these DOH strike teams will have one or more SAP Certified Structural Engineers in cooperation with SEAW.*
>
> *In the mid 1990's, the City of San Francisco started their Building Occupancy Resumption Emergency Inspection Program (BORP). This program established requirements and procedures that allowed building owners to pre-qualify specific engineers to evaluate and "tag" buildings using the ATC-20 procedures.*
>
> *In a similar, but slightly different fashion two AHJ's (State of Washington DOH and City of Olympia, WA) have decided to pre-qualify strike teams to assess and report on hospitals, nursing homes and boarding homes within the jurisdiction of the City of Olympia, WA. These DOH Strike Teams are fully trained and certified in using ATC-20 procedures along with additional process guidelines outlined below.*
>
> *DOH Strike Teams would be deputized by the City to Post Placards thereby posted placards by the DOH Strike Teams would have full legal authority behind them. Procedures will be established whereby DOH Strike Teams report their findings to the building official. Therefore, the building official will have record of the safety status of all buildings assessed by DOH Strike Teams."*
>
> *The intent of this agreement is to mobilize DOH Strike Teams more quickly with a triage approach to the overall Licensed Health Care Facility assessment…"*
>
> *Excerpt from WABO White Paper 1-2014, January 2, 2014*

As noted above, WA DOH has recently implemented several initiative that help in the movement toward implementing a state-level building safety assessment program. Their leadership, participation, and resources will be a key ingredient to any successful safety assessment program.

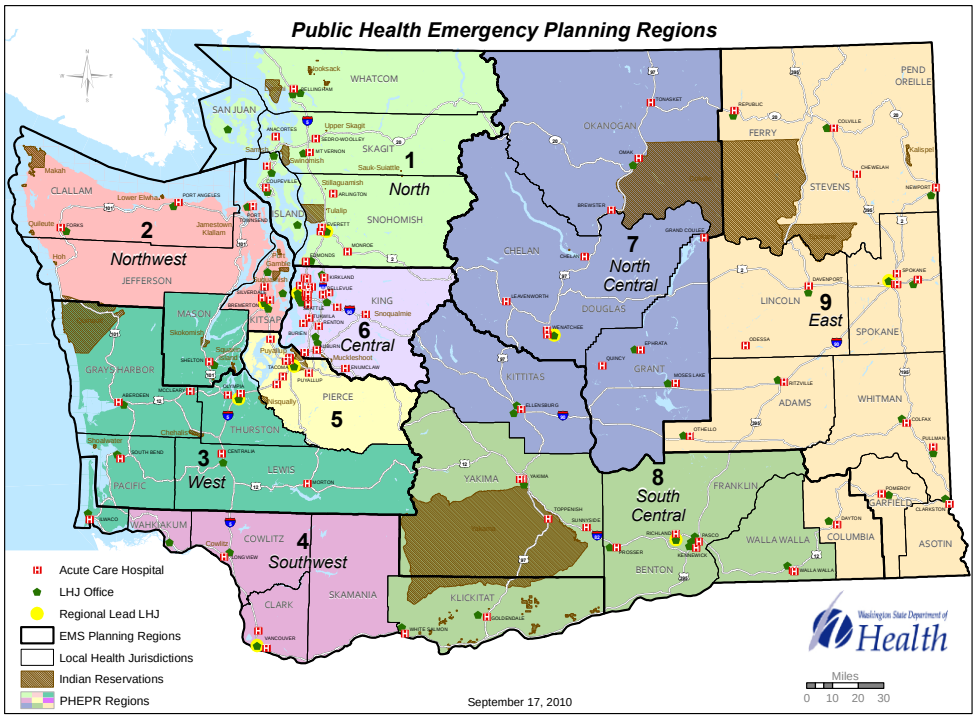


Figure 3.2.7.1-1. WA DOH Emergency Planning Regions.

3.2.7.2 WAserve Disaster Volunteer Responder Database

Another initiative by the WA DOH is their development of a statewide registry of volunteer responders who are ready to respond to public health emergencies locally, across the state, and in other states. WAserve is currently being used for Washington State's Emergency System for Advanced Registration of Volunteer Health Professionals (ESAR-VHP) database of licensed health care, public health and support professionals who want to volunteer in response to federal, state or local emergencies. Currently, the WAserve he registry allows volunteers to join the following units or groups:

1. *Medical Reserve Corps Unit*
2. *Local Volunteer Management Unit*
3. *Tribal Nations Unit*

These three groups are currently organized to provide volunteer healthcare emergency services relative to different tiers of capabilities, regions, and types of responders. The mission of the ESAR-VHP program within the WAserve database is to establish a national network of state-based volunteer registration systems for managing volunteers at all tiers of healthcare disaster response. Each system verifies the identity, credentials, certifications, licenses, and hospital

privileges of health professionals who volunteer to provide health services during a public health emergency.

WAserve allow local system administrators and volunteer managers to efficiently identify, activate, and deploy medical and support volunteers during disasters. It also functions as a communication tool for providing volunteers with information about training and exercises. The WAserve database requires healthcare volunteers to join one of the three units or groups depending on their skills, location, or affiliation. The WAserve responder database is a user populated and managed database system. It takes about 20 minutes to register in the WAserve database. WAserve requires the user to login to the website and enter information on their applicable licenses, skills, training, certifications, and contact.

The WAserve responder database can easily be scaled to add other disaster responder types such as architects, engineers, and building inspectors. The WAserve responder database can then be utilized by WA EMD and the various NGO's in registering, organizing, and administering these highly-trained volunteer resources. An initial meeting on the WAserve database at the Washington State Department of Health (WA DOH) offices demonstrated the ability of the WAserve responder database to be modified to include post-disaster safety evaluation engineer, architects and building inspectors. WA DOH noted that the administrative costs of extending the WAserve responder database to non-healthcare responders for the proposed WA EMD SAP program NGO's should be able to fit within their current WAserve administration budget.

Extending the WAserve responder database to include SAP Program volunteer engineers, architects, and building inspectors will prove to be an excellent tool for capturing, managing, and organizing volunteers for the proposed WA EMD SAP program. WA DOH has offered to make their WAserve database and available for the development, implementation, and administration of a state-level volunteer building safety evaluation responder database. This tool may become the centerpiece of a state-level WA EMD SAP Program.

3.2.8 Missouri SAVE Coalition

The Missouri Structural Assessment and Visual Evaluation (SAVE) Coalition is a group of volunteer engineers, architects, building inspectors and other trained professionals that assists the Missouri State Emergency Management Agency with building damage inspections. Established by the Missouri State of Emergency Management (SEMA) and formed by state law in 1991, the SAVE Coalition was created to establish a building inspection program for all disaster events, both natural and manmade.

SAVE Coalition volunteers are called to assist when a disaster such as a tornado or earthquake causes so much damage that local building officials need help in determining the safety of buildings and infrastructure. SAVE Coalition volunteers are well qualified to conduct emergency inspections. They are required to have at least five years of professional experience in engineering, architecture, building inspection or construction industry skills. Members must also take special training in ATC-20/45 post-disaster safety evaluation training to receive the SAVE Coalition certification, with a requirement for re-certification every three years to maintain their active status on the SAVE Coalition volunteer roster.

Currently, there are over 1,000 professionals trained as SAVE Coalition volunteers in Missouri. Deployment protocols require that local governments contact the State Emergency Management Agency (SEMA) for assistance after a disaster, SAVE Coalition volunteer coordinators are contacted and organized to send available inspectors to the affected area to help them conduct post-disaster building safety evaluations.

This administration of the SAVE coalition is performed by the Missouri SEMA and is governed by their SAVE Coalition Administration & Operations Plan. A copy of this SAVE Administration & Operations Plan is included in the appendices of this report. This document may be useful in developing a similar administration and operations plan for the development of a WA EMD SAP program for volunteer NGO's.

3.2.8 Other State-Level Safety Assessment Program Initiatives

The Central United States Earthquake Consortium (CUSEC) recently reported at their 2014 Building Inspection Resource Deployment (BIRD) Workshop that four of their member states have implemented formal post-earthquake building safety assessment programs.

These states and their programs are:

- Illinois Facility Assessment Support Team Alliance (FAST).
- Indiana Building Emergency Assessment & Management Team (I-BEAM).
- Missouri Safety Assessment and Visual Evaluation Coalition (MO SAVE).
- Tennessee Structural Assessment and Visual Evaluation Coalition (TNSAVE).

CUSEC reported that TNSAVE, the newest state-level program, has recently drafted an administrative and operations plan; built a web site and on-line application form for members (both under construction); and recently achieved not-for-profit status. TNSAVE is also moving forward with the creation of by-laws and an initial election of officers, as well as plans for recruiting potential inspectors.

4.0 Workshop Summary and Outcomes

The project study team conducted a 6-hour workshop on May 8, 2014 to investigate ways to possibly implement a sustainable, state-level, post-disaster Safety Assessment Program (SAP) within the State of Washington. Facilitating the workshop were researchers from the University of Washington and personnel from the Emergency Management Division of the Washington State Military Department (WA DEM). Workshop attendees were key members of our states most active NGO's representing the Structural Engineers Association of Washington (SEAW), the American Society of Civil Engineers (ASCE), the American Institute of Architects (AIA), and the Washington Association of Building Officials (WABO). Supporting goals of the workshop were to also define and document the current capabilities, training, credentialing, activation, deployment, and overall coordination of post-disaster safety evaluation volunteers in the State of Washington.

4.1 Overview of Workshop Activities

The workshop was conducted in a World Café format where after an initial workshop overview presentation, the main group was separated into 3 smaller groups to collaboratively investigate ideas for developing a Washington State-based Post-Disaster Safety Assessment Program to utilize the large pool of currently trained and organized NGO volunteers within the State of Washington. At the end of each individual group session, outcomes of each group discussion were shared with the larger workshop group and the results were documented for further evaluation. Detailed notes from workshop activities were recorded and are documented in the appendices of this report. Audio recordings were also made of the workshop large group discussions and were posted to the project FTP site. They are included in the report appendix.

Figure 4.1-1. WA EMD NGO SAP Workshop (D. Swanson Photo).

4.5 Workshop Ideas and Concepts for the State of Washington

Four basic questions were posed to workshop participants to stimulate discussion about how to implement a state-level post-disaster safety assessment program. They were:

1. Who is in charge of the safety assessment program and the volunteers?
2. How are volunteer resources shared?
3. What are the Authority Having Jurisdiction (AHJ) requirements for SAP volunteers?
4. Who provides training and who administers credentialing for volunteers?

Several ideas and concepts emerged from the workshop that suggest developing a sustainable state-level volunteer building safety assessment program and registry is within reach of existing public-sector and volunteer NGO resources. These ideas were:

Develop the WAserve Responder Database for a State-Level SAP Program *– The WAserve Volunteer Responder Database is a flexible tool to help develop and statewide SAP registry. WA DOH has graciously offered the database for this purpose and initial meetings with the WAserve administrators suggest that the development of SAP database information and criteria is easy to program and deploy. The NGOs need to determine required database information and to develop the criteria and protocol for database management, maintenance, and call out procedures.*

Refine the WABO Building Safety Responder Credential *– The existing WABO IBSMA Building Safety Responder Credential represents an opportunity to create a statewide Safety Assessment Program credential to ensure an established level of training and credentials to Post-Disaster NGO SAP Volunteers. WABO is an appropriate organization to provide credentialing as their membership represent local government building departments who are the end users of the safety assessment program NGO volunteers.*

Develop and Deploy WA EMD SAP Training Materials *– Development of a WA EMD/WABO/SEAW sanctioned SAP training program materials will help provide uniformity and consistency among the newly formed WA EMD SAP Program. These training materials should be based on training materials from the Cal OES SAP Program documents, but customized to follow State of Washington program requirements and to highlight our region's unique hazards.*

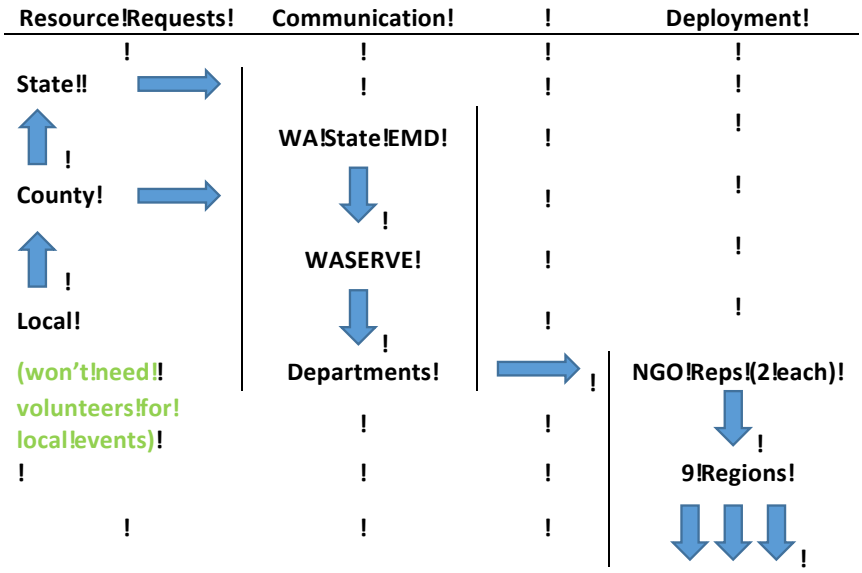


Figure 4.5-1. Conceptual Washington DOH WAserve Deployment Flowchart.

Perhaps the biggest limiting factor in developing and implementing a state-level SAP program in the State of Washington is the lack of funding for such a program. Other states, like the State of California, have long had significant state and federal level funding for the development, implementation, and administration of their Cal OES SAP program. This level of funding commitment plus the effectiveness of the program in disasters are several reasons why this program has flourished and become the model post-disaster volunteer safety assessment program in the United States. However, many states do not have the same level of funding commitment from their public official's, or frequency large-scale disasters to create the demand for a program of organized and highly trained volunteers. Therefore, these other states have had to explore less costly, yet effective options in their development of volunteer safety assessment programs.

The State of Missouri's SAVE program is one such example of a volunteer SAP program that is administered by their State Emergency Management Agency, however, with significantly less funding compared to the State of California's SAP Program. The Missouri SAVE Coalition is a very effective program and elements of their safety assessment program my be a good model for the development of the a statewide safety assessment program for the state of Washington.

Washington State SAP Evaluators Recall and Process Flow

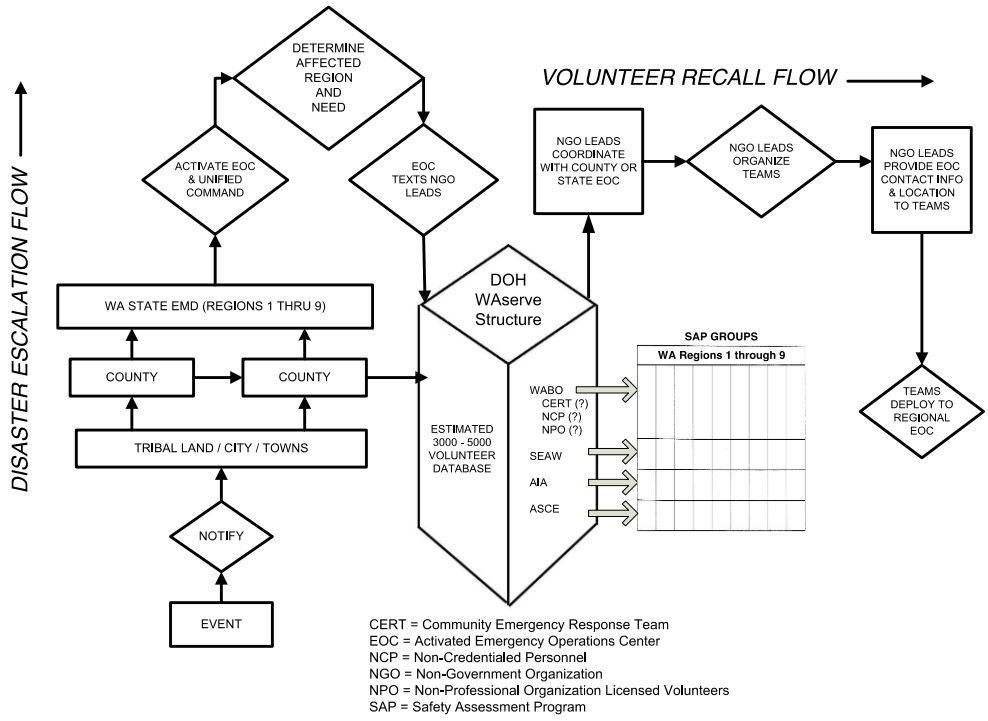


Figure 4.5.1-1. Proposed WA EMD SAP Evaluators Process Flow.

5.0 Conclusions and Recommendations

Based on the outcomes of the workshop, research of various volunteer post-disaster evaluation programs around the country, and consulting with experts in the field of disaster response and recovery, we recommend that the Washington Department of Emergency Management take the following steps towards developing a state-wide post-disaster Structural Assessment Program in Washington State:

1. **Develop and Deploy State-Wide WAserve SAP Volunteer Database**
   It is critical that the state have an automated, self-updating database of the trained disaster assessment volunteers around that state in order that they can be called up to assist, when needed after a large event. The Washington Department of Health has generously offered that a compartment of their WAserve system can be utilized to house such a database. This system has the capacity to maintain evolving fields for each field, including contact information and credentialing status, and allows members to self-update these fields, as appropriate. It also incorporates automated call-up procedures, via e-mail, phone calls, and SMS, in order to allow municipalities request for volunteers. Therefore, we recommend that the WA EMD utilize this WAserve system to house the SAP Volunteer Database.

2. **Develop and Deploy State-Wide WABO SAP Volunteer Credentials**
   All post-disaster assessment volunteers must be appropriately trained and credentialed to ensure that they providing accurate and consistent structural assessments. We recommend that the WA EMD follow the credentialing system utilized by WABO for Building Safety Emergency Responder credentialing. That is, volunteers must be licensed engineers, architects, or building inspectors, and must have been trained in the Washington State EMD sanctioned SAP Training Program. An abbreviated refresher class should renew this training every five years. Credentialed volunteers should receive a badge, including photo identification, and a unique volunteer identification number that can be utilized to track and administer the volunteers.

3. **Develop and Deploy State-Wide SAP Training Volunteer Program**
   A state-wide SAP training program should be developed and incorporated into the volunteer credentialing system. Analogous to the Cal OES SAP training program, we recommend that this program is based on the ATC-20/45 training procedures, but includes specific training related to the Washington State SAP deployment protocols. The training shall also address the unique seismicity and infrastructure risks in Washington State. We recommend that this is an 8-hour training, including a 4-hour refresher course to be taken every five years.

4. **Non-Governmental Organization Collaboration**
   Our workshop and research suggests that Washington State has a wide breadth of well organized Non-Governmental (NGO) and Voluntary Organizations full of highly trained post-disaster assessment volunteers. These organizations, such as SEAW, ASCE, AIA, and WABO have engineers, architects, and building officials/inspectors who have a high level of technical training and specific capabilities relative to post-disaster structural

assessment, and a long list of members who have already been trained with ATC-20/45/Cal OES SAP evaluation procedures. Therefore, we recommend that WA EMA SAP collaborate closely with these NGOs in order to utilize these resources. We recommend that the WAserve database is developed such that each NGO can manage their own list of trained members within the system. The WA EMA SAP call-up infrastructure should be organized in a manner that allows government agencies to request volunteers via a call-up tree through these NGOs.

5. **Volunteer NGO Capabilities in the Comprehensive Emergency Management Plan**
   Incorporate a section on the specific capabilities and highly trained post-disaster safety evaluations of building and infrastructure technical resources that engineers, architects, and building officials/inspectors non-governmental organizations such as SEAW, ASCE, AIA and WABO can provide within the Non-Governmental (NGO) and Voluntary Organizations section of the Washington State Comprehensive Emergency Management Plan – Basic Plan. This will help ensure that this expert NGO resource of volunteer engineers, architects and building inspectors is well-understood by the emergency management community and public officials.

Next steps for the development of the state-wide post-disaster safety assessment program include setting up a series of meetings between the NGO volunteer organizations and the WA EMD to develop a WA EMD SAP operational and administrative plan and to further refine volunteer inspector training requirements for WABO-sponsored SAP credentials. Additionally, the development of a State of Washington SAP training module is necessary to ensure that the program training is delivered in a consistent manner with a uniform message. Accomplishing these next steps with the help of the NGO volunteers should lead to the implementation of a newly developed WA EMD SAP Program within the next 12 to 24 months.

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A WA EMD NGO SAP Workshop Invitation, Roster, and Agenda

The following information was utilized to announce the WA EMD NGO SAP Workshop, manage the invitation roster, and outline the agenda of topics to be covered by workshop attendees.

B Workshop Introductory Presentation

The following PowerPoint presentation was utilized at the workshop to provide an overview of current local, state and national post disaster safety assessment programs.

D WABO White Papers

The following WABO White Papers provide an overview of post-disaster contract safety evaluations and post-disaster safety evaluations of healthcare facilities by WA DOH Strike teams.

E ASCE Post-Disaster Structural Condition Evaluator Certification

The following ASCE document provides an overview of the FEMA-sanctioned post-disaster structural condition evaluator certification initiative.

F State of Missouri SAVE Coalition Administration & Operations Plan

The following State of Missouri SAVE Coalition Administration & Operations plan provides an overview of their well-developed volunteer engineer and architect post-disaster response program.