Draft

ANCHORAGE EARTHQUAKE CDRP
TABLE OF CONTENTS

Letter of Transmittal.....@
Security Instructions and Record of Changes.....@@@
Plan Summary .....@
Classification Guidance.....@@
Table of Contents .....@@

Basic Plan 1
1 Situation.....1
2 Mission.....4
3 Execution.....4
4 Administration and Logistics.....6
5 Command and Signal.....7

Annex A - Task Organization.....A-1
Appendix 1 - Deployment of USACE elements.....A-1-1
Appendix 2 - Federal agency response.....A-2-1
Tab A – SECC Joint Staffing.....A-2-A-1
Appendix 3 - State of Alaska response.....A-3-1
Appendix 4 - Local government response.....A-4-1
Appendix 5 - Public utilities Response.....A-5-1

Annex B - Intelligence.....B-1
Appendix 1 - Impacted Area Assessment.....B-1-1
Tab A - General.....B-1-A-1
Exhibit 1 – Regional Description, 7.5
Shallow Crustal Event.....B-1-A-1-1
Exhibit 2 – Regional Description, 8.0
Subduction Event.....B-1-A-2-1
Tab B – Maximum Credible Planning Earthquake.....B-1-B-1
Exhibit 1 – AREST Report.....B-1-B-1-1
Tab C - Climate.....B-1-C-1
Tab D - Maps.....B-1-D-1
Appendix 2 – Assessment of Post-Earthquake Situation.....B-2-1
Tab A – Physical Damage.....B-2-A-1
Exhibit 1 – 7.5 Shallow Crustal Event.....B-2-A-1-1
Exhibit 2 – 8.0 Subduction Event.....B-2-A-2-1
Tab B – State of the Population.....B-1-A-1
Appendix 3 - Residual Corps Capabilities.....B-3-1
Tab A – Identification of Contractors in Area.....B-3-A-1
Tab B – Suppliers of Critical Response Materials....B-3-B-1
Tab C – Commercial Building Suppliers.....B-3-C-1
Appendix 4 - Residual Corps Capabilities.....B-4-1

Annex C - Operations.....C-1
Appendix 1 - Phase I Preparedness.....C-1-1
Appendix 2 – Phase IIa Activation.....C-2-1
Appendix 3 – Phase IIb Initial Deployment.....C-3-1
Appendix 4 – Phase III Deployment.....C-4-1
Appendix 5 – Phase IV Response and Recovery Operations...C-5-1
Appendix 6 – Phase V Transition and Closeout.....C-6-1
Appendix 7 – Continuity of Operations.....C-7-1
Appendix 8 - Technical Assistance.....C-8-1
Appendix 9 - Urban Search and Rescue.....C-9-1
Appendix 10 - Structural Safety Assessment.....C-10-1
Appendix 11 - Emergency Electrical Power.....C-11-1
Appendix 12 - Emergency Drinking Water.....C-12-1
Appendix 13 - Emergency Access.....C-13-1
Appendix 14 - Temporary Housing.....C-14-1
Appendix 15 - Debris Removal.....C-15-1
Appendix 16 – Other Emergency Missions.....C-16-1
Appendix 17 – Support for Regular Customers.....C-17-1

Annex D - Logistics.....D-1
Appendix 1 - Corps Services for Corps Deployees.....
Appendix 2 - Corps Facilities Support.....
Appendix 3 - Corps Supply Support.....
Appendix 4 - Local Transportation.....
Appendix 5 - Deployment/ Redeployment Transportation.....
Appendix 6 - ADP.....
Appendix 7 - Communications Support.....

Annex E - Personnel.....E-1
Appendix 1 - Corps MOBTDA.....E-1-
Appendix 2 – Working Conditions.....E-2-
Appendix 3 - Medical Standards.....E-3-
Appendix 4 – Pay Policy Issues.....E-4-
Appendix 5 – IMA Procedures.....E-5-
Appendix 6 – Family Support Activities.....E-6-
Appendix 7 - Medical Treatment.....

Annex F - Public Affairs.....F-1
Appendix 1 - Corps Support to FEMA.....F-1-1
Appendix 2 - Corps Public Affairs Policy.....F-2-1
Appendix 3 – PAO Equipment Lists.....F-3-1

Annex G - Civil Affairs (Community Relations).....G-1

Annex J - Command Relationships.....J-1
Appendix 1 - Corps Deployed Command.....J-1-
Appendix 2 - Federal Agency Relationships.....J-2-
Appendix 3 - State Agency Relationships.....J-3-
Appendix 4 - Local Government Relationships.....J-4-
Appendix 5 - Public Utilities.....J-5-

Annex K - Command and Control.....K-1
Appendix 1 - Communications Equipment Requirements.....K-1-
Appendix 2 - Database Requirements.....K-2-
Appendix 3 - Reports.....K-3-
Appendix 4 - ADP Support to Operations.....K-4-

Annex L - Environmental.....L-1
Appendix 1 – ESF #3/USACE Operations.....L-1-1
Tab A – National Register of Historic Properties.....L-1-A-1
Appendix 2 - Support to ESF 10.....L-2-1
Appendix 3 – General Support to Response and Recovery
Efforts.....L-3-1
Tab A – Emergency Permit Procedures.....L-3-A-1
Exhibit 1 – Telephone Log – Agency Contacts.....L-3-A-1-1
Exhibit 2 – Telephone Log – to CEPOD-CO-R –
Verbal Permit Request/Approval.....L-3-A-2-1
Exhibit 3 – FAXed Confirmation of Telephone
Request to CEPOD-CO-R.....L-3-A-3-1
Exhibit 4 – FAXed Confirmation of Telephone
Approval from CEPOD-CO-R.....L-3-A-4-1
Exhibit 5 – Telephone Log – Authorization
Notice to Applicant.....L-3-A-5-1
Exhibit 6 – Letter of Authorization w/Conditions,
Confirming Emergency Authorization....L-3-A-6-1
Exhibit 7 – Emergency Public Notice.....L-3-A-7-1

Annex M – Geospatial Information and Services.....L-1
Appendix 1 - Corps GIS.....L-1-
Appendix 2 - Other Federal Agency GIS.....L-2-
Appendix 3 - State and Local GIS.....L-3-

Annex W – USACE Functional Activities.....X-1

Annex X - Execution Checklist.....X-1

Annex Y - Acronyms and Specialized Terms.....Y-1
Appendix 1 - Acronyms.....Y-1-1
Appendix 2 – Specialized Terms.....Y-2-1

Annex Z - Distribution.....Z-1

Draft

HEADQUARTERS, USAED PACIFIC OCEAN
Bldg. 525 Fort Shafter, HI 96858-5440

USAED PO Catastrophic Disaster Response Plan, Alaska
Anchorage, Alaska Earthquake

REFERENCES

a. **Maps and Charts**. See Annex B.

b. **Documents**:

a. Federal Response Plan (for Public Law 93-288, as amended), including Appendices for Alaska and Region X (The Plan).

b. National Oil and Hazardous Substances Contingency Plan (NCP), 40 CFR Part 300.

c. Department of Defense Directive 3025.1, Military Support to Civil Authorities (MSCA)

d. AR 500-60, Disaster Relief.

e. COMALCOM CONPLAN 5210, Civil Emergencies/ Natural Disasters.

f. COMUSAFAK OPLAN 5210, Civil Emergencies/Natural Disasters.

g. COMUSARAK CONPLAN 5210?

h. ER 500-1-1, Natural Disaster Procedures.

i. ER 500-1-28, Response Planning Guide.

j. The Alaska Federal/State Preparedness Plan for Response to Oil & Hazardous Substance Discharges/Releases. (The Unified Plan)

k. The Cook Inlet Subarea Contingency Plan (regional supplement to The Unified Plan)

l. State of Alaska Emergency Operations Plan

m. Planning Directive for Anchorage, Alaska Catastrophic Earthquake

TASK ORGANIZATION: See Annex A

1. **SITUATION**

a. **General**. Anchorage is the major population, commerce, and transportation center in Alaska. It is in one of the most active seismic regions of the world, and has relatively severe winter conditions that can quickly kill persons who are not properly protected. Electrical and natural gas supplies would be reduced or cut off by a severe earthquake in the Anchorage area. In addition, many of the in-state resources and personnel needed for disaster response would themselves be seriously impacted by such an event. Immediate large-scale Federal support would be necessary to protect lives and prevent additional property damage. Military support would be provided by the Alaskan Command (ALCOM) functioning as, or organizing, a military Joint Task Force (JTF).

b. **Threat**. Two events are considered probable in the immediate future:

(1) A magnitude 7.5 shallow crustal earthquake within the Municipality of Anchorage, with significant damage occurring within the Matanuska-Susitna Borough. This earthquake could occur on the Border Ranges Fault (a known fault, but current activity a matter of debate) or on an unknown fault west of the Border Ranges Fault.

(2) A magnitude 8.0 subduction zone earthquake on the portion of the Alaska-Aleutian Megathrust Fault that runs directly under Anchorage. The failure zone would probably extend to the Sterling Highway area within the Kenai Peninsula Borough, and could also extend into the Palmer area in the Matanuska-Susitna Borough. The earthquake would cause major damages beyond the failure zone. The failure zone would extend northwest from a portion of the fault segment that was involved in the 1964 Good Friday Earthquake.

c. **Response Organizations**. (See Annex A for additional information.)

(1) Federal: FEMA will coordinate the Federal response, in accordance with the Federal Response Plan. The Regional Operations Center will be immediately activated at Region X in Bothell, WA. The initial on-scene response force will assemble at the Alaska Division of Emergency Services office (State Emergency Coordination Center) at Camp Denali on Fort Richardson, Alaska..

(2) Military: Pacific Command (PACOM) is the DoD planning agent for Military Support to Civil Authorities (MSCA) within the POD area of operations, In Alaska, CDRPACOM has delegated the planning and operations functions to Commander, Alaskan Command (COMALCOM). Alaskan Command may function as the Joint Task Force for military support.`

(3) State: The Alaska Division of Emergency Services (ADES) will manage the state's disaster response activities through its Emergency Coordination Center at Camp Denali (Fort Richardson). All state agencies participate in the ECC. ADES is part of the Department of Military and Veterans Affairs, which also contains the National Guard, the Naval Militia, and the State Defense Force. A working group from the Governor's cabinet provides policy guidance during state disaster responses.

(4) Local: The Municipality of Anchorage, the Matanuska-Susitna Borough, and the Kenai Peninsula Borough all have emergency management organizations that would coordinate local responses. Boroughs and cities in the region have public works and contracting departments, although the smaller departments would be overwhelmed by the scale of the event.

d. **Assumptions**.

(1) Either of the two maximum probable earthquakes would produce sufficient damage to overwhelm local and State response capabilities.

(2) A Federal emergency declaration or major disaster declaration will be issued, and the Federal Response Plan activated, within a few hours after the initial situation report reaches FEMA Region X.

(3) Either of the two maximum probable earthquakes would cause an initial loss of long-distance telephone communications, and would cause at least partial loss of local telephone service.

(4) The event will occur during the winter. Immediate action, including rescue and sheltering, will be necessary to prevent a significant number of additional deaths among victims of the event.

(5) A significant portion of the District workforce will be unable to immediately respond to a local disaster, either because of damage to access routes or because of personal or family impacts. Estimated availability is 25% of key personnel during the 4 to 12 hour time frame, and 33% through 50% of key personnel during the 12 to 24 hour time frame. (Availability would be lower for the 7.5 shallow crustal earthquake than for the 8.0 subduction earthquake.) Other agencies at all levels will have similar staffing limitations.

(6) The initial response will be with local personnel. Personnel from CONUS and Hawaii will arrive and beginning performing response operations no later than 24 hours after the event. Initial supplies will arrive in Anchorage within 48 hours.

(7) Restrictions placed on local travel will initially be limited to areas of major damage. In Anchorage, that would include the downtown area, slide areas, damaged or suspect bridges, and possibly the midtown high-rise buildings (which could spread broken glass even if they escaped structural damage). Major bridges/overpasses within Anchorage will be either blocked off, or limited to light traffic, pending evaluation.

(8) Land access routes to Anchorage, from both directions, will be damaged. The Glenn and Seward Highways may allow limited traffic. The Alaska Railroad will be closed, pending track and bridge inspection and repair.

(9) One of the two major airfields in Anchorage (Elmendorf A.F.B. or Anchorage International Airport) will be operational within 24 hours.

(10) The Port of Anchorage will survive, but damage to cranes, pipelines, and other support equipment will interfere with port operations.

(11) The District Headquarters will survive the event, but may be damaged. Utility services from the base will initially be interrupted.

(12) A portion of the District workforce will attempt to report to the District, provided

(a) Doing so will not endanger their families, or result in significant additional property loss, and

(b) They believe that such effort will help other victims of the event.

(13) USACE will not be involved in a second earthquake and/or catastrophic disaster response, and will be involved in no more than one other large-scale disaster response.

(14) The United States will not be involved in a major military contingency operation at the time of the earthquake, but will need to maintain military readiness for such an event.

(15) Response activities during the first week will be conducted 24 hours a day. Lighting equipment from the construction industry will be used to maintain operations at night.

(16) None of the Cook Inlet volcanoes will be active at the time of the earthquake.

(17) The primary CONUS staging, deployment, and logistics support area will be the Puget Sound area, including Sea-Tac Airport and McChord A.F.B. However, items from FEMA logistics center in California (and possibly in Hawaii) will normally be shipped directly to Anchorage.

(18) HAZUS data is used for the projected damages.

(19) Looting and civil unrest will be minor problems.

(20) Military cold weather supplies and equipment from Elmendorf A.F.B. and Fort Richardson will not be available during the primary deployment period.

2. **MISSION**. Provide timely assistance, as a supplement to State and local efforts, to save lives, prevent human suffering, and/or mitigate major property damage. This assistance may be provided under any appropriate legal authority, including those where the primary responsibility is assigned to another agency. In addition, the Alaska District will repair damages to USACE projects and to the facilities of those agencies that currently use Alaska District as their contract construction agent.

3. **EXECUTION**

a. **Commander's Intent.** POD will conduct response activities to save lives, alleviate human suffering, mitigate severe property damage, assist regular USACE customers, support the recovery of the community, and restore the capabilities of the Alaska District. This will be accomplished through rapid deployment of both POD and USACE-wide resources in support of both the Federal Response Plan and regular Alaska District customers, including the military. The mission will be completed when local civil government is able to take over disaster recovery efforts and when the Alaska District is able to support customers through its regular procedures and with its regular staff.

b. **Concept of Operations.** This is a five-phase operation, requiring a total Division effort augmented by extensive support from throughout USACE. Alaska District will provide initial response, within surviving capabilities, until support can arrive from CONUS and from Hawaii.

POD will deploy a “division forward” management cell while Honolulu District will establish an Emergency Response and Recovery Office (ERRO) to manage the primary operations. POH will also provide personnel to assist in the reconstitution of Alaska District. NWD will provide initial representation at the Region X ROC and will provide logistics support. Depending on transportation availability, Northwest Division/North Pacific Region employees may deploy to Anchorage during the first 12 hours after the event. POA will reconstitute, and will support military and other regular customers in the repair of earthquake damages.

(1) Phase I: Pre-event planning. There is no warning phase involved, due to the no-notice nature of the threat.

(2) Phase II: Activation. This has two sub-phases

(a) assembling a minimum operating staff at each initial operating location, using local personnel.

(b) deploying the initial response team, from Hawaii and CONUS, to Anchorage and to the Region X ROC.

(3) Phase III: Deployment. The ESF 3 management team and PRT management teams become operational in Anchorage; initial delivery/production begins on critical missions.

(4) Phase IV: Response Operations. The Emergency Response and Recovery Office (ERRO) is in charge of activities in Anchorage. Major response missions are accomplished; recovery missions are initiated. The Alaska District reconstitutes and begins to provide recovery support to its regular customers.

(5) Phase V: Transition and Closeout. The ERRO is closed out; management of recovery operations is transferred to the Alaska District. Alaska District accomplishes long-term recovery projects for its regular customers and for FEMA, and handles the administrative closeout of disaster accounts.

c. **Tasks.** (critical tasks are in bold type)

(1) Specified:

(a) **Support military forces in Alaska in maintaining/restoring mission readiness.** (POA)

(b) **Provide MSCA: Support Urban Search and Rescue Operations, plus safety evaluations of shelters and key operational facilities** (POA)

(c) Provide representation for ESF #3 and other USACE operations in the DFO. (POD)

(d) **Accomplish ESF #3 missions.** (POA, or POH as replacement for a victim district, functioning through the ERRO.)

(e) Assist in operation of the logistics supply line from CONUS to Anchorage. (NWD LPRT, or other CONUS LPRT assigned by HQUSACE)

(f) Provide support under PL 84-99 authority (POA, or POH as replacement for a victim district.)

(g) Maintain ongoing workload outside the disaster area (POA; Northern Area Office assisted by POH in case of a "victim district" scenario.)

(h) Support long-term recovery of regular POA customers, including DoD activities. (POA)

(2) Implied: Assist ALCOM in the transition of missions from MSCA to contractor accomplishment. (POD and POA)

4. **ADMINISTRATION AND LOGISTICS.**

a. Concept of Support. A catastrophic disaster will cause a major shortage of resources within the affected area. The initial response will utilize on-hand resources. Once the plan is activated, agencies will bring in resources from outside the disaster area and the logistical ESFs will organize general support. The Joint Mobility Complex on Elmendorf AFB will be the primary Logistics point of arrival (POA) within the Anchorage area. Secondary POAs will be set up at Anchorage International Airport and at the Port of Anchorage. Most supplies and personnel will be transported to Anchorage from the Puget Sound area. Materials from the FEMA logistics center in California, and to some extent materials from other FEMA logistics centers, will be shipped directly to Anchorage.

b. Logistics. As a DoD agency, USACE will receive logistical support from ALCOM. Logistical support beyond USACE/DoD capabilities will primarily be furnished by: ESF 7, Resource Support; ESF 1, Transportation; and ESF 2, Communications. Some needs will also be met by having personal supplies, such as cold weather gear, furnished to augmentees before they travel to the scene of the disaster. Southern Area Office/Richardson Resident Office will provide initial support to USACE activities at the Federal Initial Operating Facility/State Emergency Coordination Center. See Annex D for details.

c. Personnel. Significant activities under this plan will require major augmentation of the District and Division workforce. Planning and Response Teams (PRTs) and supplemental personnel will be furnished by all other USACE activities. Requests for assistance will be forwarded from the Division Forward to the Pacific Ocean Division EOC. POD will request assistance from the HQUSACE UOC for any personnel needs that cannot be met from within the division. See Annex E for details.

d. Public Affairs. The Disaster Field Office will establish a Joint Information Center (JIC) to coordinate the release of information to the public. The State of Alaska is expected to participate in this JIC. The purpose of the JIC is to insure the consistency and accuracy of information, and to emphasize the coordinated nature of the Federal and State responses. See Annex F for details.

5. **COMMAND AND SIGNAL.**

a. Command Relationships.

(1) HQUSACE is responsible for supervision of the ESF #3 management cell, at the Initial Operating Facility (IOF) and, later, the Disaster Field Office (DFO).

(2) Pacific Ocean Division, represented by the Commander, Division Forward, will be in charge of USACE response and recovery efforts. This includes supervision of the Emergency Response and Recovery Office (ERRO). Pacific Ocean Division will remain in command of both Alaska and Honolulu Districts.

(3) Alaska District is responsible for response and recovery activities conducted under regular authorities, such as military construction activities and wetlands/navigable water permitting activities. Alaska District's Northern Area Office, in Fairbanks, will serve as the Alternate Headquarters if the district headquarters is not able to function following the earthquake. During the longer-term recovery and closeout periods, Alaska District will also provide the "division forward" function and manage the ERRO.

(4) Honolulu District will be responsible for ERRO activation and support until Alaska District has reached adequate reconstitution.

(5) Other ESFs will be managed by the appropriate primary agencies, as specified in the Federal Response Plan. In certain cases in Alaska, interim primary agencies will provide management at the Federal Initial Operating Facility until personnel arrive from the Lower 48. (See Annex A for the ESF matrix.)

(6) The Federal Coordinating Officer is responsible for coordinating response activities with the ESFs and with the State. The FCO is in charge of the Disaster Field Office and acts as the President's representative in assuring that Federal assistance is properly furnished.

(7) The State Coordinating Officer is responsible for coordinating the response activities of State agencies, and for coordinating all State and local requests for Federal assistance. The SCO is the Governor's representative and is normally the Director, ADES. The SCO is also responsible for furnishing priorities to the DFO when demands exceed resources.

(8) Within the DFO, the Response Operations Chief will provide coordination of those ESFs that come within that category. This role will not supersede the responsibility of each primary agency to manage its ESF. However, it will include oversight of missions that involve multiple ESFs, to insure proper coordination.

(9) Within the Operations Section, the Chief, Infrastructure Support Branch provides coordination for ESF 3, Engineering and Public Works, as well as ESF 12, Energy, and the FEMA Public Assistance Grant Program.

(10) The Defense Coordinating Officer (DCO) will be provided by ALCOM to serve as the point of contact to the FCO and the ESFs regarding requests for military assistance.

b. Command Posts.

(1) Pacific Ocean Division: Bldg. 525, Fort Shafter, HI. Division Forward location will be at, or close to, the ERRO. (Location can not be identified in advance.)

(2) Alaska District: Primary: Alaska District Headquarters, 2204 Third Street, Elmendorf AFB. Alternative: Richardson Resident Office, Bldg. 736 Ft. Richardson. In case of personnel and/or facility unavailability in the Anchorage Area, Northern Area Office (Fort Wainwright, Alaska) will serve as Alternate Headquarters.

(3) Honolulu District: Bldg. 230, Fort Shafter, HI; however, Emergency Operations Center is located in Bldg. 525 of Fort Shafter.

(4) Regional Operations Center: FEMA Region X Headquarters, Bothell, WA.

(5) Federal Initial Operating Facility: Primary: Alaska National Guard Headquarters, Camp Denali, Ft. Richardson, AK. Alternatives: see listing for State Emergency Coordination Center.

(6) State of Alaska Emergency Coordination Center: Primary: Alaska National Guard Headquarters, Camp Denali, Ft. Richardson, AK. Alternative: Field facility established by the National Guard adjacent to their regular headquarters.

(7) Long-term DFO: To be established by FEMA, based on the specific post-disaster situation. The location can not be preselected, as availability is subject to both real estate market conditions and the effects of the event.

(8) ESF 3: Interim or long-term DFO.

(9) ERRO: To be determined, based on the situation.

(10) ALCOM: Building 9480 Pease Ave., Elmendorf AFB, AK; ALCOM headquarters will be located in the ALCOM Battle Staff Room, with the Crisis Action Team located in the Current Situation Room.

c. Succession to Command.

(1) Pacific Ocean Division: Deputy Division Engineer, followed by the senior assigned officer within the POD area of operations. (Alaska, Far East, and Japan Districts have O-6 commanders.) The succession list is maintained by the Division Executive Office, which will not be impacted by the event.

(2) Alaska District: Senior military officer. (If senior officer is in Fairbanks, the senior available officer and appropriate civilian employees in Anchorage will use delegated signature authority for operational actions.)

(3) Honolulu District: Senior military officer. The list is maintained by the District Executive Office, which will not be impacted by the event.

(2) Alaska District Crisis Management Team: Deputy District Engineer (Chief, Programs and Project Management Division); Chief, Construction-Operations Division; Chief, Engineering Division.

d. Signal.

(1) In the event of loss of local telephone service, VHF radio will be used between the District EOC and its representatives–including the Interim DFO and Military Liaison Officers.

(2) In the event of loss of long-distance telephone service, satellite telephones and HF-SSB radio will be used between Alaska District and Pacific Ocean Division, and between Alaska District and any remote field teams.

(3) HF-SSB radio communications may require use of a relay station. The operator at the relay station would communicate with Alaska District by radio, and with the Pacific Ocean Division by telephone, fax, or e-mail. Potential relays are the Northern Area Office, the Chena Project Office, and the NWP radio center in Portland. (POD does not have a permanently installed HF-SSB radio.)

(4) A limited number of long-distance circuits will be quickly restored in the Federal Initial Operating Facility, at Camp Denali, as part of the State's emergency communications plan. ESF #3 will be provided with two telephone lines.

(5) The Emergency Alert System will be used as the primary means of notification for employees who are not on duty when the event occurs. Contact with the Emergency Alert System will be through the Interim DFO and the State EOC.

(6) See Annex K for detailed communications information.

Annexes

A -- Task Organization
B -- Intelligence
C --Operations
D -- Logistics
E -- Personnel
F -- Public Affairs
G -- Civil Affairs
J -- Command Relationships
K -- Command and Control
L -- Environmental
M – Geospatial Information and Services
X -- Execution Checklist
Y -- Acronyms and Definitions
Z -- Distribution

ANNEX A TO ANCHORAGE EARTHQUAKE CDRP
TASK ORGANIZATIONS

ORGANIZATION

U.S. Army Engineer Division, Pacific Ocean
U.S. Army Engineer District, Alaska
U.S. Army Engineer District, Honolulu
U.S. Army Engineer Division, Northwestern (Support)
U.S. Army Corps of Engineers, Western Processing Center (Support)
Headquarters, U.S. Army Corps of Engineers (Support)
Headquarters, Alaskan Command (Coordination)
Alaska Division of Emergency Services (Coordination)
Federal Emergency Management Agency, Region X (Coordination)
Alaska Regional Interagency Steering Committee (Coordination)
Alaska Regional Response Team (Coordination)

ATTACHMENTS:

Appendices

1: Deployment of USACE elements
2: Federal agency response
3: State of Alaska response
4: Local government response
5: Public utilities response

APPENDIX 1 TO ANNEX A TO ANCHORAGE EARTHQUAKE CDRP
DEPLOYMENT OF USACE ELEMENTS

1. **General Considerations:**

a. Personnel deploying to Alaska during phases II and III must be provided with appropriate clothing for the season prior to departure from CONUS (or Hawaii). This is a requirement from FEMA and ALCOM, as unprepared augmentees may themselves become casualties.

b. During Phase IV, the Division Forward element will provide guidance as to whether the cold-weather clothing can be obtained from military theater stocks, or needs to be obtained prior to departure. This will require coordination with ALCOM, to determine the condition of the warehoused supplies.

1. **Phase IIa:**

a. **Pacific Ocean Division:**

(1) Emergency Management Staff: Division Office

(2) EOC Staff: Division Office

(3) POD to add others—cmt/cat, etc

b. **Alaska District:**

(1) Initial staff to State ECC/Federal Initial Operating Facility

(2) District EOC Staff/EM Staff: District Office

(3) District Crisis Management Team: District Office

(4) District Urban Search and Rescue personnel: District Office

(5) District ATC-20 structural engineers (detailed inspections):

(a) Group a to SECC

(b) Group b to District Office

(6) Liaison Officer: ALCOM

c. **Honolulu District:**

(1) EM staff: regular office

(2) EOC staff: District EOC, in Bldg. 525 Fort Shafter

POH--Add CMT, etc----

d. Northwestern Division

(1) Initial ESF #3 Staff (1 EM, 1 general, 1 logistics): Region X ROC
(This first increment should be from NWS, due to the urgency of need.)

(2) NWD LPRT: at Seattle District, to assist with initial deployments. (If NWD LPRT is deployed, team alternates must fill in until arrival of another LPRT.)

(3) PAO (should be initially from NWS): one representative (at NWS or ROC??)

e. Prime Power, Fort Lewis, 1 representative: Region X ROC

f. USACE, General (coordinated by UOC):

(1) ERT-A team: location to be determined, tentatively Region X ROC.

(2) ESF #3 ROC team: Region X

(3) Emergency Power PRT: coordinate with ROC as to CONUS deployment location.

(4) ATC-20 detailed inspection personnel: coordinate with ROC as to CONUS deployment location.

(5) Urban Search and Rescue personnel: coordinate with ROC as to CONUS deployment location.

1. **Phase IIb** (additional to the Phase IIa personnel):

a. **Pacific Ocean Division:**

(1) Division Forward initial element: deployment may be either through the Puget Sound Area (coordinated by ESF #1 at the ROC) or directly (with PACOM elements).

b. **Alaska District:**

(1) Additional staff to District Headquarters or other location identified on commercial radio Emergency Alert System.

c. **Honolulu District:**

(1) ERRO initial staff: deployment may be either through the Puget Sound Area (coordinated by ESF #1 at the ROC) or directly (with PACOM elements).

d. **Northwestern Division:**

(1) Provide one EM representative and one Logistics representative for deployment to Anchorage with initial FEMA delegation (deploy only if HQUSACE does not provide other personnel in time).

(2) Provide available ATC-20 detailed inspectors to assist in evaluating shelters and operating facilities; also to perform initial liaison for regular SSA mission (actual SSA team could be provided by Seattle, Sacramento or Buffalo District).

e. Prime Power, Fort Lewis, 1 representative: deploy with initial FEMA delegation to Anchorage. (Representative could be provided by another detachment, provided deployment schedule could be met. A representative from Fort Shafter could potentially deploy with PACOM elements.)

f. USACE, General:

(1) ERT-A team: location to be determined, tentatively Region X ROC.

(2) ESF #3 ROC team: Region X

(3) Emergency Power PRT: location to be determined, tentatively Region X ROC.

3. **Phase III:**

a. **Pacific Ocean Division:**

(1) Division Commander, Deputy Division Engineer, or other senior officer: to Anchorage as Division Forward Commander

(2) Additional ESF #3/Division Forward personnel

b. **Alaska District:**

(1)

c. **Honolulu District:**

(1) ERRO Staff: to Anchorage

d. **Northwestern Division:**

(1) LERT Team (or LERT Liaison for Puget Sound area activities)

e. Prime Power: Additional personnel, select from all detachments.

f. USACE, General:

(1) ESF #3 Team.

(2) Management Team for Structural Safety Assessment.

(3) Management Team for Debris Removal

(4) Alert: Management Teams for Emergency Access, Temporary Housing, and Potable Water.

3. **Phase IV:**

APPENDIX 2 TO ANNEX A TO ANCHORAGE EARTHQUAKE CDRP
FEDERAL AGENCY RESPONSE

1. **Initial Response, Anchorage:**

a. The Federal Initial Operating Facility is collocated with the SECC, Camp Denali (Fort Richardson), Alaska.

b. Because of the potential for transportation problems in the early stages of the disaster, FEMA Region X has established the Alaska Emergency Response Team. This is an initial response team composed of Anchorage-based representatives of Federal agencies. This is described in detail in the State of Alaska Annex (Annex H, Tab AK) of the FEMA Region X Regional response Plan.

(1) The Federal Liaison Officer (FLO) is a position unique to Alaska. Region X has acknowledged this position to provide coordination among federal agencies in Alaska during major events when such support to the State of Alaska and coordination is needed before FEMA can make contact or arrive to assume it's coordination role under the FRP. The FLO provides a single point of contact for the SCO and the Region X ROC for coordination with federal agencies in the response to major disaster events. After the occurrence of a major event, the FLO will report to the State SECC and will collect information about the status and capabilities of Federal agencies based in Alaska and assist the SCO in making contact with these Federal agencies.

(2) The following ESFs have local personnel, from their primary agencies, who would report to the Interim Operating Facility following the earthquake: ESF #1, Transportation; ESF #3, Public Works and Engineering; ESF #4, Firefighting (Department of Interior, not Department of Agriculture, per a special provision in the Federal Response Plan); ESF #6, Mass Care; ESF #7, Resource Support; ESF #8, Health and Medical Services; ESF #10, Hazardous Materials; ESF #11, Food (limited staffing), the Defense Coordinating Officer (DCO), and the Defense Coordinating Element (DCE).

(3) The following ESFs will initially be represented by local personnel from a support agency: ESF #2, Communications (limited staffing); ESF #5, Information and Planning; and ESF #9, Urban Search and Rescue.

(4) The following ESF has no initial representation in Anchorage: ESF #12, Energy.

(5) The Defense Coordinating Officer and Defense Coordinating Element have been pre-designated from within the ALCOM staff (on Elmendorf AFB).

(6) The above representatives of Federal agencies, working together with State personnel, will develop the initial situation assessment.

2. **Initial Response, Seattle:**

a. The Region X ROC will be activated at Bothell, WA, north of Seattle. For this type of event, the activation would be at Level 1 (the highest of the 3 designated levels). This level includes full engagement of Federal regional and national resources, including a fully staffed ROC with full representation from all Federal Response Plan (FRP) signatory agencies with Emergency support Function (ESF) responsibilities.

b. Most ESF lead agencies have a regional headquarters in Seattle (or, for the U.S. Forest Service and USACE, in Portland, OR). In cases where that region does not include Alaska (e.g., ESF #3, ESF #4, and DCO), representatives from the Region X/Puget Sound RISC would normally provide interim representation.

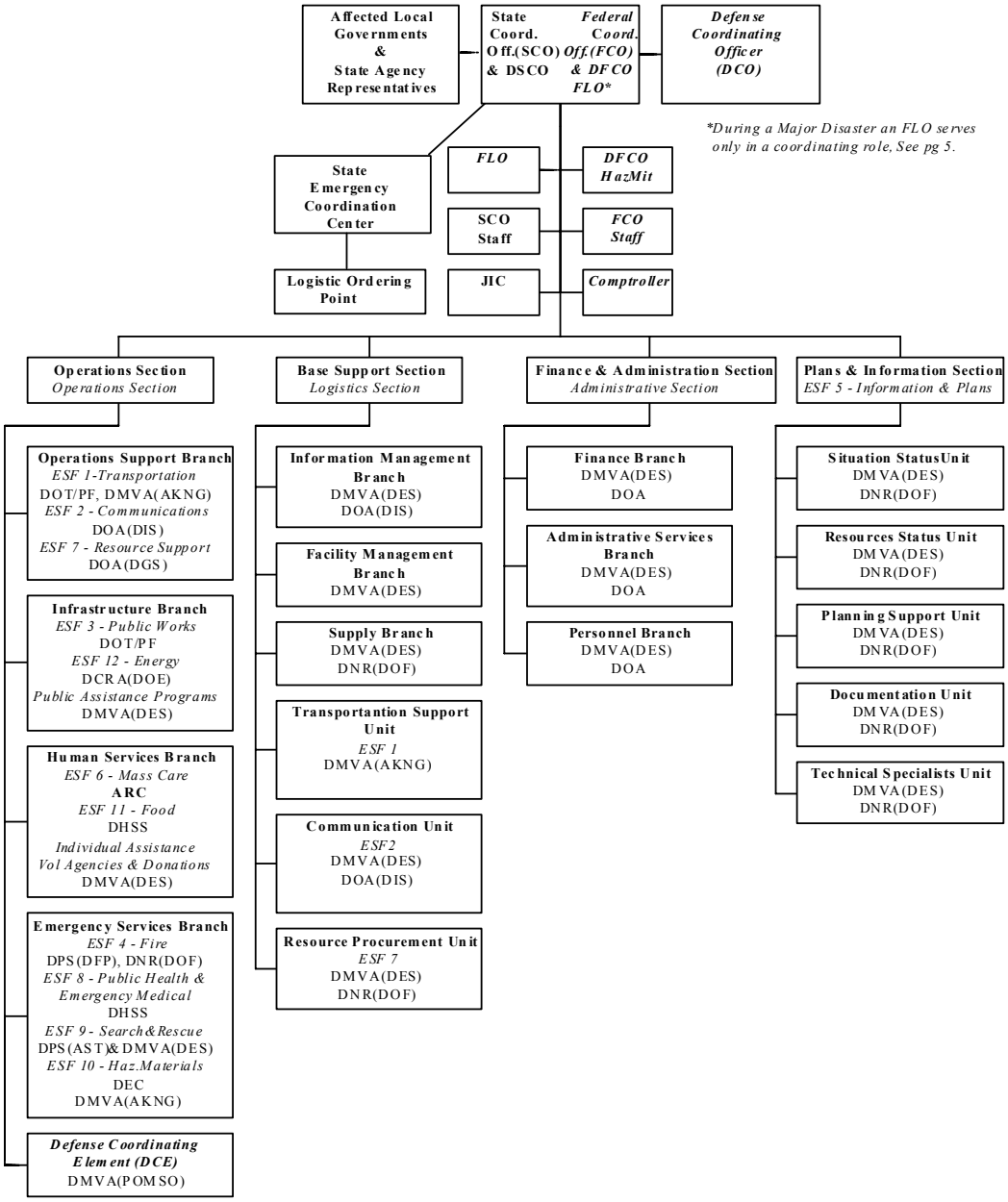
c. FEMA Region X would deploy an Emergency Response Team-Advance (ERT-A) to Anchorage as soon as transportation became available. This is especially important in the case of a catastrophic event, since the AERT personnel would be distracted by personal and agency impacts.

d. For a catastrophic event, the ERT-A would be quickly augmented by other Federal workers from the Seattle/Tacoma area, and by predesignated nationwide teams (such as the USACE PRTs). Normally this will occur within 24 to 72 hours after the ERT-A deployment.

e. An initial Disaster Field Office (DFO) would be set up at the Alaska National Guard Headquarters (Camp Denali). FEMA will immediately look for a suitable locations for a full DFO, as well as Disaster Recovery Centers to provide direct support, information, and assistance to affected citizens.

Tab A: Federal/State Joint Staffing Structure

TAB A TO APPENDIX 2 TO ANNEX A TO ANCHORAGE EARTHQUAKE CDRP
SECC FEDERAL/STATE JOINT STAFFING STRUCTURE



***Initial* SECC Federal/State Joint Staffing Structure** *(Italics is federal only resource)*

APPENDIX 3 TO ANNEX A TO ANCHORAGE EARTHQUAKE CDRP
STATE OF ALASKA RESPONSE

1. Alaska State Emergency Coordination Center (SECC) is automatically activated, at a Level 2 response, at Camp Denali, Fort Richardson, Alaska. Level 2 is the higher of the two designated levels of response in the State of Alaska plan; it involves complete staffing of the State Emergency Coordination Center (SECC), activation of all State agencies, and the anticipated activation of Federal agencies (under the AERT concept).

2. Local representatives from State agencies report to SECC. (The Alaska Department of Military and Veterans Affairs has its headquarters at Camp Denali; most agencies have a major regional headquarters in the Anchorage area.)

3. ADES has priority for the first block of commercial long-distance telephone circuits restored to the Anchorage area. (This includes circuits for both State and Federal operations at the SECC.)

4. When long distance service is available, ADES will set up a conference call with the Governor and the State disaster policy cabinet (the heads of the key State agencies providing response support).

5. State and Federal sections will work side by side and communicate and coordinate directly at the staff level. However, actual project authorizations will follow traditional channels:

a. Assistance funded under the Stafford Act will require a request from the State Coordinating Officer (SCO) to the Federal Coordinating Officer (FCO), and will be issued by Mission Assignment to the appropriate Federal activity.

b. Activities funded under the Alaska State Disaster Fund must be authorized by the SCO.

c. Activities funded under agency authorities (State or Federal) will be coordinated through the SCO and FCO, to insure that they do not use personnel and/or equipment resources that are needed for higher priority activities.

6. State operations are managed under the Incident Command System (ICS). For this event, the SECC will be functioning as a coordination center, arranging for support for the four primary local jurisdictions involved. (In some other areas of Alaska, the State also serves as the local government.)

7. See Annex A, Appendix 2, above for the organization of the SECC.

APPENDIX 4 TO ANNEX A TO ANCHORAGE EARTHQUAKE CDRP
LOCAL GOVERNMENT RESPONSE

1. Municipality of Anchorage. This is a unified home-rule municipality (combined city and borough—the Alaskan equivalent to a county).

a. Emergency operations will be coordinated at the Municipality EOC, located at 14th and E. The EOC has an emergency power system with 10 days capacity, extensive communications and computer systems, and the backup police and fire dispatch center.

b. The Municipality has a well-established ATC-20 program. Several hundred persons have been trained (to a higher than standard level) and registered to perform inspections. Many of these persons are involved in building maintenance, or are employees of engineering firms retained by the building owners. Following an earthquake, these inspectors are authorized to conduct structural safety assessments, to permit the buildings to be reoccupied.

2. Matanuska-Susitna Borough. The Emergency Management function is located in Palmer. The borough and its three cities each have small public works organizations. Palmer and Wasilla are in areas that will probably receive moderate damage from the earthquake.

3. Kenai Peninsula Borough. The borough has an emergency management office, which reports to the mayor. The borough EOC is in Soldotna; a secondary EOC is located in Seward. The borough, Kenai, and Soldotna have Public Works Departments.

a. The borough would have moderate damage during a subduction earthquake. Direct damage from the shallow crustal event would be primarily along the north shore of the Kenai Peninsula, in the Kenai National Wildlife Refuge (some oil wells and production pipelines could be impacted). For either event, land access to Anchorage would probably be cut.

b. The emergency response capability of the borough is quite high, as it has had to respond to a number of natural and technological emergencies. It uses the Community Alert Network, and will be a test site for an experimental radio-based system that will utilize GIS data to broadcast warnings to the specific areas affected by a localized emergency.

4. City of Whittier. The city has a small public works department. The city is somewhat more capable than would be expected from its permanent population of about 300, due to its status as an active port. Still, it would require assistance from the State of Alaska for any major damages.

APPENDIX 5 TO ANNEX A TO ANCHORAGE EARTHQUAKE CDRP
PUBLIC UTILITIES RESPONSE

1. General. Utilities in the area will rely extensively on mutual aid assistance from outside the disaster area. However, since this event will affect about half the population of the state, most of the personnel and equipment will need to be brought in from CONUS. This will require either air delivery or several days sea/land transit time. Utility systems in Anchorage will be represented at the Municipality's EOC.

2. Electricity. Generation and distribution systems are owned by either governments or cooperatives, so direct Federal assistance may be utilized.

a. The Anchorage Municipal Light and Power provides electricity in downtown and midtown Anchorage. ML&P has generating plants in East Anchorage, near the Muldoon Road/Glenn Highway intersection. This location is heavily impacted by the 7.5 shallow crustal earthquake (~0.5 g).

b. Chugach Electric provides electricity in most of the Anchorage Bowl, as well as the areas along Turnagain Arm. Chugach is the largest electric co-op in Alaska, and one of the largest in the United States. A 7.5 shallow crustal earthquake on the Border Ranges fault would cause extensive damage to Chugach's distribution system damage in the Hillside area of Anchorage. The primary generating plant is across Cook Inlet, but emergency/peak load generators in Anchorage could be damaged. The primary transmission line includes a submarine cable system under Cook Inlet. This could be very hard to repair during the winter. It was installed by barge; ice in Cook Inlet could prevent barge operations, and winter storms in the Gulf of Alaska could prevent mobilization. The alternate supply line, along Knik Arm, is vulnerable to the 7.5 Border Ranges earthquake.

c. Matanuska Electric Association provides electricity in the Knik Arm portion of Anchorage (Eagle River to Eklutna) as well as in the Palmer-Wasilla area. MEA is the oldest and the second largest electric co-op in Alaska. The 7.5 Border Ranges Fault earthquake would cause extensive damage to the distribution system along Knik Arm. MEA has limited generating capability, but it is able to obtain power from Healy through the Railbelt Intertie.

d. Homer Electric Association provides power to the western Kenai Peninsula, including Kenai and Soldotna. (Chugach Electric has the Northeastern portion of the peninsula, while the City of Seward has its own electrical utility.) Adequate power is available from the Bradley Lake hydropower plant, and the distribution system in this area is less vulnerable to the two potential events than is the system in Anchorage.

3. Telephone. Matanuska Telephone Association, a cooperative, provides service to the Matanuska-Susitna Borough and to the Knik Arm portion of Anchorage. Private telephone companies provide service elsewhere within the impacted area.

4. Water. The Municipality of Anchorage and most cities in the region own the local water systems. However, many residents of these communities, and almost all rural residents, use private wells. About 80 percent of the water supply for the Municipality of Anchorage comes through the Eklutna Lake pipeline, which runs near the Border Ranges Fault, or is from the Ship Creek Dam, which is also near the fault. The remainder of the supply comes from various wells in the Anchorage Bowl, some of which could be damaged. The Hillside area (closest to the fault) relies almost entirely on private wells.

5. Sewer. The Municipality of Anchorage and most cities in the region own the local sewer systems. However, many residents of these communities, and almost all rural residents, use private septic tanks. Within the MOA, the Hillside area (closest to the Border Ranges Fault) relies almost entirely on septic tanks.

6. Solid Waste. The Municipality of Anchorage and the two Boroughs each have central publicly-operated landfills; collection is by a combination of public agencies and private companies. Landfill availability is generally not a problem, although access could be a problem following an earthquake in the Municipality of Anchorage.

7. Building heating. Most buildings in the Municipality of Anchorage and the Palmer-Wasilla area use natural gas for heating. Oil and electricity are used to some extent, and some residents use wood stoves as backup (occasionally primary) heat sources. Natural gas comes from the Cook Inlet fields, and is transmitted through two pipelines: one around Knik Arm (running near the Border Ranges Fault) and the second near the mouth of Turnagain Arm (still fairly close to the fault).

The purpose of this annex is to identify the entire responding community. A detailed description and anticipated deployment locations of all support teams required to support response and recovery operations is given. Each Corps team description will include geographical and/or functional responsibilities, mission(s), personnel requirements including skill and grade ranges, and source of personnel (either sourced from within the MSC's resources or supported by other MSCs or other Federal agencies).

Appendix 1 will identify the Corps requirements for deployed organization(s) and their respective functions.

Appendix 2 will address anticipated response by other Federal agencies participating in the FRP.

Appendix 2A will identify anticipated response by civil agencies in the FRP.

Appendix 3 will identify the anticipated response from state agencies, including the state national guard.

Appendix 3A will identify the anticipated state response.

Appendix 3B will identify the anticipated state response.

Appendix 3C will identify the anticipated response by regional or quasi-government agencies.

Appendix 4 will identify the anticipated response by local governments and quasi-government agencies.

Appendix 4A will identify anticipated response by county governments.

Appendix 4B will identify anticipated response by major city governments.

Appendix 4C will identify anticipated response by regional quasi-government agencies.

Appendix 5 will identify anticipated response by public utilities. A detailed description of the response planned by each public utility, and any other entities that provide critical support to community health and welfare which have implications for ESF #3 missions.

ANNEX B TO ANCHORAGE EARTHQUAKE CDRP
SITUATION/INTELLIGENCE

1. **SITUATION**

a. **General**. This plan describes the USACE response to a catastrophic earthquake in the Southcentral Alaska region. To qualify as catastrophic, an earthquake in this region would have to cause severe damage to Anchorage, which is the major population, commerce, and transportation center. Such an earthquake would also cause damage to the adjacent Matanuska-Susitna and Kenai Peninsula Boroughs, and to the City of Whittier.

This region contains over half the population of Alaska. It is part of one of the most active seismic regions of the world, and has relatively severe winter conditions that can quickly kill persons who are not properly protected.

b. **Threat.** There are two potential sources of catastrophic earthquakes in the region:

(1). Anchorage is located above the inner side of the Alaska-Aleutian Megathrust Fault, a subduction fault that extends south of the Alaskan coast, from Yakutat past the tip of the Aleutian Islands, almost to the Kamchatka Peninsula in Russia. The 1964 Good Friday Earthquake, located on this fault, was the second strongest earthquake worldwide since 1900. (Two others along the same fault rank in the top 10 worldwide for that same period of time.)

(2). Because of the plate movement, Anchorage is in a "crush zone" similar to Los Angeles. This could result in a shallow crustal earthquake of up to magnitude 7.5. Such an earthquake would affect a much smaller area than a subduction earthquake, but the shaking close to the fault could be several times stronger than that produced in 1964. In addition, such an earthquake would have a relatively greater impact on shorter structures, such as residences, than would a subduction earthquake.

c. **Geography.** Anchorage is separated from other population centers. The closest support is from Fairbanks, with a total population of around 84,000 persons (including two major military installations, Fort Wainwright and Eielson A.F.B.). Major aid would have to come from the Pacific Northwest, over 3 hours away by air and several days away by sea or road.

d. **Climate.** Anchorage is in the border region between the maritime Gulf of Alaska region and the continental Interior Alaska region. Nighttime low temperatures below freezing are normal from the end of September until mid-April; high temperatures below freezing are normal from late October until mid-March. Temperatures are noticeably colder in the Matanuska-Susitna (Mat-Su) Valley, as well as in certain "cold spots" within the Anchorage Bowl. See Tab C of Appendix 1 for additional climate information.

ATTACHMENTS:

APPENDIX 1: Impacted Area Situation
- TAB A: GENERAL
  - EXHIBIT 1: REGIONAL DISCRIPTION, 7.5 SHALLOW CRUSTAL EVENT
  - EXHIBIT 2: REGIONAL DISCRIPTION, 8.0 SUBDUCTION EVENT
- TAB B: MAXIMUM CREDIBLE PLANNING EARTHQUAKE
  - EXHIBIT 1: AREST REPORT
- TAB C: CLIMATE
- TAB D: MAPS

APPENDIX 2: ASSESSMENT OF POST-EARTHQUAKE SITUATION
- TAB A: PHYSICAL DAMAGE
  - EXHIBIT 1: 7.5 SHALLOW CRUSTAL EVENT
  - EXHIBIT 2: 8.0 SUBDUCTION EVENT
- TAB B: STATE OF THE POPULATION

APPENDIX 3: RESIDUAL CONTRACTING CAPABILITY
- TAB A: IDENTIFICATION OF CONTRACTORS IN AREA
- TAB B: SUPPLIERS OF CRITICAL RESPONSE MATERIALS
- TAB C: COMMERCIAL BUILDING SUPPLIERS

APPENDIX 4: RESIDUAL CEPOA CAPABILITIES

APPENDIX 1 TO ANNEX B TO ANCHORAGE EARTHQUAKE CDRP
IMPACTED AREA SITUATION

1. **SITUATION**

a. **General**. The region has four major political subdivisions:

(1) Anchorage is the major population, commerce, and transportation center in Alaska. The Municipality of Anchorage is a unified government, merging the original Greater Anchorage Area Borough with the City of Anchorage and other cities.

(a) The municipality extends from Girdwood on Turnagain Arm to Eklutna on Knik Arm. Most of the population is in the area from Rabbit Creek to Fort Richardson, with a secondary concentration along the east side of Knik Arm (Eagle River to Eklutna). The total land area is slightly over three times that of the City of Los Angeles.

(b) The Office of Emergency Management is part of the Public Safety Team, reporting to the Municipal Manager. The Municipality EOC is located at 14th and E. The building survived the 1964 earthquake, and was extensively remodeled in 1999 to serve its new function. The remodeling included structural reinforcement, an emergency power system with 10 days capacity, extensive communications and computer systems, and the backup police and fire dispatch center.

(2) The Matanuska-Susitna Borough is north of Anchorage.

(a) This is a second class borough with three incorporated cities: Palmer, Wasilla, and Houston. The Palmer-Wasilla area contains the primary business district of the borough; Palmer also contains the borough government offices and the hospital. The Emergency Management function is located in the Borough Public Safety Department (note: this does not include law enforcement), while the borough and its three cities each have small public works organizations.

(b) Most of the population lives in the Palmer-Wasilla area, but the borough extends out about a hundred miles each way along the Parks and Glenn Highways. In area, it is the fourth largest local government unit in the United States; it is larger than 9 of the individual states. The Palmer-Wasilla area would be damaged by either of the probable events.

(3) The Kenai Peninsula Borough includes the Kenai Peninsula plus a small area along the west shore of Cook Inlet.

(a) This is a second class borough with six incorporated cities (Kenai, Soldotna, Seward, Homer, Kachemak, and Seldovia); three organized Alaska Native communities (Tyonek, Port Graham, and Nanwalek), and several unorganized communities. The twin cities of Kenai and Soldotna, along with the unincorporated community of Nikiski, form the major economic center of the Borough. Nikiski contains refineries and petrochemical plants. Homer and Seward are also commerce centers, and Seward (at the southern end of the Alaska Railroad) is one of the four

primary seaports in mainland Alaska. The total land mass of the borough equals that of Massachusetts and New Jersey combined (larger than 9 of the individual states).

(b) The Borough offices are in Soldotna; small hospitals are located in Soldotna, Homer, and Seward. The Borough has an emergency management office, which reports to the mayor. The Borough EOC is in Soldotna; a secondary EOC is located in Seward. The Borough, Kenai, and Soldotna have Public Works Departments.

(c) The Borough would have moderate damage during a subduction earthquake. However, there is a major concern for oil and hazardous materials spills. from Direct damage from the shallow crustal event would be primarily along the north shore of the Kenai Peninsula, in the Kenai National Wildlife Refuge (some oil wells and production pipelines could be impacted). Land access to Anchorage would probably be cut.

(d) The Kenai-Soldotna area would be damaged by the projected 8.0 subduction zone earthquake. The impacted area contains an active oil production area, including related seaport, refinery, and petrochemical manufacturing facilities. The Kenai-Soldotna includes the majority of the hazardous materials facilities within Southcentral Alaska.

(4) The City of Whittier is in the Unorganized Borough. Access is through a combined railroad-highway tunnel or by sea; the airport is only suitable for light planes. Whittier should escape major damage from either event, and the tunnel remained functional in 1964. However, the city's electrical supply could be cut off and the road/rail access could be blocked by avalanches. (These problems occurred during the 1999-2000 Winter Storm and Avalanche disaster.)

b. **Demographics.** About 42% of the population of Alaska (260,283 of 626,932) lives in the Municipality of Anchorage. An additional 9% (59,322) lives in the adjacent Matanuska-Susitna Borough. (27% of the Borough's employed residents work in Anchorage. In addition, 5% work in the North Slope oil fields, and 5% elsewhere; both groups normally travel through Anchorage International Airport.) In addition, 8% of the state's population (49,691) lives in the Kenai Peninsula Borough. Whittier, a second class city in the Unorganized Borough, has about 300 residences.

c. **Logistics.** Anchorage serves as the primary supply point for most of Alaska. The Port of Anchorage and Anchorage International Airport are the primary ocean and air ports for the region. The Port of Anchorage handles 85% of the general cargo for the Alaska Railbelt area. Anchorage International Airport has a regional hub for Federal Express and a major United Parcel Service facility. In terms of total cargo aircraft landing weight, Anchorage International airport is the busiest air cargo port in the United States, and the sixth busiest in the world. In addition, the seaports of Whittier and Seward rely on the road and railroad routes that run through Anchorage for access to areas other than the Kenai Peninsula. Port MacKenzie, a medium-draft port on the west side of Knik Arm, is in the area affected by the two planning earthquakes. The majority of the freight into Anchorage is shipped from the Puget Sound area, but direct shipments arrive from a variety of sources in Alaska, the Lower 48, and international locations such as Japan.

d. **Military Significance.** Anchorage is a major military center. Alaska is in a strategic location that allows rapid deployment of aircraft to both Europe and the Western Pacific Ocean. Elmendorf Air Force Base has been designated as the home of one of Air Force's ten fighter Expeditionary Aerospace Force (EAF) lead wings. Elmendorf AFB also provides aerial refueling support for air transport between CONUS and eastern Asia. Army personnel from Fort Wainwright and Fort Richardson rely on the Port of Anchorage for deployment of vehicles and other major items; a Joint Mobility Complex on Elmendorf A.F.B. supports the deployment of Army personnel by aircraft.

e. **Geology.** Anchorage is located in a subduction zone, where the Pacific Plate is moving under the North American Plate. The area has several known local (shallow crustal) faults and is believed to have blind faults, similar to the Los Angeles area. See Tab B for further information on potential earthquake sources. As an additional concern, the volcanoes on the Western side of Cook Inlet could be triggered by an earthquake, if they were in a pre-eruptive stage at the time.

f . **Geography.** Anchorage is separated from other population centers. The closest support is from Fairbanks, with a total population of around 82,840 persons (including two major military installations, Fort Wainwright and Eielson A.F.B.). Major aid would have to come from the Pacific Northwest, over 3 hours away by air and several days away by sea or road. Access between the Matanuska-Susitna Borough and downtown Anchorage requires crossing the Matanuska River, the Knik River, Peters Creek, Eagle River, and Ship Creek, plus use of an overpass over the Alaska Railroad at Eklutna where there is no bypass. All river crossings have at least 3 existing bridges, and Peters Creek, Eagle River, and Ship Creek all have at least one short, low-level crossing where a bridge could be quickly replaced.

g. **Climate.** Anchorage is in the border region between the maritime Gulf of Alaska region and the continental Interior Alaska region. Nighttime low temperatures below freezing are normal from the end of September until mid-April; high temperatures below freezing are normal from late October until mid-March. Temperatures are noticeably colder in the Matanuska-Susitna (Mat-Su) Valley, as well as in certain "cold spots" within the Anchorage Bowl. The City of Whitter, as well as the populated areas in the Kenai Peninsula Borough, have a milder climate due to a greater "maritime climate" influence. The upper Turnagain Arm area and Turnagain Pass on the Kenai Peninsula are known for heavy annual snowfalls, and avalanches are often a problem.

TAB A TO APPENDIX 1 TO ANNEX B TO ANCHORAGE EARTHQUAKE CDRP
GENERAL

1. **GENERAL SITUATION**. As noted below, there are two major threats to Anchorage. Because of the variations in types and areas of damages, the regional descriptions and projected damages are listed separately. Because both would have major impacts on the same areas of Anchorage, response capabilities are the same unless otherwise noted.

2. **THREAT**. Anchorage is located above the inner side of the Alaska-Aleutian Megathrust Fault, a subduction fault that extends south of the Alaskan coast, from Yakutat past the tip of the Aleutian Islands, almost to the Kamchatka Peninsula in Russia.

a. The Alaska-Aleutian Megathrust Fault is formed by the Pacific Plate subducting under the North American Plate. At approximately Yakutat, the plate boundary becomes the Fairweather Fault, a transform fault. (Some Alaskan geologists maintain that the San Andreas Fault is the southern extension of the Fairweather Fault.) This region is the location for the eight strongest earthquakes in the United States since 1800, including three of the ten strongest earthquakes in the world since 1900.

b. The 1964 Alaska Good Friday Earthquake, moment magnitude 9.2, was the second strongest recorded worldwide since 1900. This earthquake was located on a portion of the megathrust fault east of Anchorage Subsequent research has established that such an earthquake involves about 500 years of energy storage on the fault. However, two current threats exist.

c. Because of the plate movement, Anchorage is in a "crush zone" similar to Los Angeles. This could result in a shallow crustal earthquake of up to magnitude 7.5. Such an earthquake would affect a much smaller area than a subduction earthquake, but the shaking close to the fault could be several times stronger than that produced in 1964. In addition, such an earthquake would have a relatively greater impact on shorter structures, such as residences, than would a subduction earthquake.

d. The portion of the megathrust fault directly under Anchorage could rupture, producing an earthquake of up to magnitude 8.0. This portion of the fault remained locked during the 1964 earthquake. The shaking from this earthquake would be less violent than that from a subduction earthquake. The shaking would be similar in intensity to that in 1964, but with a shorter duration, and it would have a relatively greater impact on taller structures. The rupture zone is estimated at 200 km by 45 km, with the long axis roughly paralleling Knik Arm. Depending on the exact location of the fault rupture, the zone of greatest shaking would extend into the Matanuska-Susitna Borough and/or the Kenai Peninsula Borough.

3. **IMPACTED AREAS**.

a. The 7.5 shallow crustal earthquake would be on a fault that is primarily within the Municipality of Anchorage. If it were to occur on the Border Ranges fault, the northeastern end would be within the MOA, while the southwestern end would be in an essentially undeveloped

area on the Kenai Peninsula. Moderate damage would occur in the Palmer-Wasilla area; impacts to the Kenai Peninsula Borough and to Whittier would be primarily due to damage to access routes along Turnagain Arm.

b. The 8.0 subduction earthquake would involve a rupture zone approximately 200 x 45 kilometers. The position in regard to northwest-southeast location is fairly certain, as it is limited by fault characteristics. The position is less certain in regard to the northeast-southwest location. The location selected would cause impacts to both the Palmer-Wasilla and Kenai-Soldotna areas. An earthquake located further southwest on the fault would have greater impact on the Kenai Peninsula Borough, but less impact on the Matanuska-Susitna Borough. Any location involving the fault area under Anchorage would also involve the road and rail access corridor along Turnagain Arm.

EXHIBIT 1 TO TAB A TO APPENDIX 1 TO ANNEX B TO ANCHORAGE EARTHQUAKE CDRP
REGIONAL DESCRIPTION, 7.5 SHALLOW CRUSTAL EVENT

HAZUS is a regional earthquake loss estimation model that was developed by the Federal Emergency Management Agency and the National Institute of Building Sciences. The primary purpose of HAZUS is to provide a methodology and software application to develop earthquake losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from earthquakes and to prepare for emergency response and recovery. The following is the background information used to develop the damage estimates for the 7.5 shallow crustal earthquake:

The geographical size of the region is 1,960 square miles and it contains 56 census tracts. There are over 83,000 households in the region and a total population of 226,300 people (1990 Census Bureau data).

There are an estimated 60,000 buildings in the region with a total building replacement value (excluding contents) of 15.166 billion dollars (1994 dollars). Approximately 96% of the buildings (and 76% of the building value) are associated with residential housing.

The replacement values of the transportation and utility lifeline systems are estimated to be 2.693 billion dollars and 0 dollars (1994 dollars), respectively.

Building and Lifeline Inventory

Building Inventory

HAZUS estimates that there are 60,000 buildings in the region which have an aggregate total replacement value of 15.166 billion dollars (1994 dollars). Table 1 presents the relative distribution of the value with respect to the general occupancies.

Table 1
Building Exposure by Occupancy Type

		Building Value (millions of dollars)		
Locality Name	Population	Residential	Non-Residential	Total
Anchorage	226,338	11,451	3,716	15,166

In terms of building construction types found in the region, wood frame construction makes up 84% of the building inventory. The remaining percentage is distributed between the other general building types.

Critical Facility Inventory

HAZUS breaks critical facilites into two groups: essential facilities and high potential loss (HPL) facilities. Essential facilities include hospitals, medical clinics, schools, fire stations, police stations and emergency operations facilities. High potential loss facilities include dams, levees, military installations, nuclear power plants and hazardous material sites.

For essential facilities, there are 7 hospitals in the region with a total bed capacity of 808 beds. There are 168 schools, 7 fire stations, 5 police

stations and 1 emergency operation facility. With respect to HPL facilities, there are 7 dams identified within the region. Of these, 1 of the dams is classified as 'high hazard'. The inventory also includes 3 hazardous material sites, 2 military installations and 0 nuclear power plants.

Transportation and Utility Lifeline Inventory

Within HAZUS, the lifeline inventory is divided between transportation and utility lifeline systems. There are seven transportation systems that include highways, railways, light rail (no systems in the area), bus, ports, ferry and airports. There are six utility systems that include potable water, wastewater, natural gas, crude & refined oil, electric power and communications. The lifeline inventory data is provided in Tables 2 and 3.

The total value of the lifeline inventory is over 0 million dollars. This inventory includes over 133 kilometers of highways, 143 bridges, and 0 kilometers of pipes.

Table 2: Transportation System Lifeline Inventory

System	Component	# Locations/ # Segments	Replacement value (millions of dollars)
Highways	Major Roads	12	1,334
	Bridges	143	179
	Tunnels	0	0
		Subtotal	1,513
Railways	Rail Tracks	53	292
	Bridges	0	0
	Tunnels	0	0
	Facilities	1	3
		Subtotal	295
Bus	Facilities	0	0
Ferry	Facilities	0	0
Port	Facilities	2	3
Airport	Facilities	22	125
	Runways	27	756
		Subtotal	881
		Total	2,693

Table 3: Utility System Lifeline inventory

System	Component	# Locations / Segments	Replacement value (millions of $)
Potable Water	Pipelines	0	0.00
	Facilities	0	0.00
	Distribution Lines	NA	0.00
		Subtotal	0.00
Waste Water	Pipelines	0	0.00
	Facilities	1	0.00
	Distribution Lines	NA	0.00
		Subtotal	0.00
Natural Gas	Pipelines	0	0.00
	Facilities	2	0.00
	Distribution Lines	NA	0.00
		Subtotal	0.00
Oil Systems	Pipelines	0	0.00
	Facilities	6	0.00
		Subtotal	0.00
Electrical Power	Facilities	12	0.00
	Distribution Lines	NA	0.00
		Subtotal	0.00
Communication	Facilities	53	0.00
	Distribution Lines	NA	0.00
		Subtotal	0.00
		Total	0.00

EXHIBIT 2 TO TAB A TO APPENDIX 1 TO ANNEX B TO ANCHORAGE EARTHQUAKE CDRP
REGIONAL DESCRIPTION, 8.0 SUBDUCTION EVENT

HAZUS is a regional earthquake loss estimation model that was developed by the Federal Emergency Management Agency and the National Institute of Building Sciences. The primary purpose of HAZUS is to provide a methodology and software application to develop earthquake losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from earthquakes and to prepare for emergency response and recovery. The following is the background information used to develop the damage estimates for the 8.0 subduction earthquake:

The area involved consists of the Municipality of Anchorage plus portions of the Matanuska-Susitna and Kenai Peninsula Boroughs. The HAZUS model did not include damage to the City of Whittier, which is in the Unorganized Borough; however, some damage is possible there as Whittier is near the rupture zone.

The geographical size of the region is 48,833 square miles and contains 91 census tracts. There are over 111,000 households in the region and a total population of 306,800 people (1990 Census Bureau data).

There are an estimated 96,000 buildings in the region with a total building replacement value (excluding contents) of 20.857 billion dollars (1994 dollars). Approximately 97% of the buildings (and 78% of the building value) are associated with residential housing.

The replacement values of the transportation and utility lifeline systems are estimated to be 15.873 billion dollars and 0 dollars (1994 dollars), respectively.

Building and Lifeline Inventory

Building Inventory

HAZUS estimates that there are 96,000 buildings in the region which have an aggregate total replacement value of 20.857 billion dollars (1994 dollars). Table 1 presents the relative distribution of the value with respect to the general occupancies.

Y
Building Exposure by Occupancy Type

		Building Value (millions of dollars)		
Locality Name	Population	Residential	Non-Residential	Total
Anchorage	226,300	11,450	3,720	15,170
Kenai Peninsula	40,800	2,340	550	2,890
Matanuska-Susitna	39,700	2,550	250	2,800
Alaska impacted:	306,800	16,340	4,510	20,860

In terms of building construction types found in the region, wood frame construction makes up 85% of the building inventory. The remaining percentage is distributed between the other general building types.

Critical Facility Inventory

HAZUS breaks critical facilites into two groups: essential facilities and high potential loss (HPL) facilities. Essential facilities include hospitals, medical clinics, schools, fire stations, police stations and emergency operations facilities. High potential loss facilities include dams, levees, military installations, nuclear power plants and hazardous material sites.

For essential facilities, there are 13 hospitals in the region with a total bed capacity of 983 beds. There are 264 schools, 17 fire stations, 10 police stations and 3 emergency operations facilities. With respect to HPL facilities, there are 7 dams identified within the region. Of these, 1 of the dams is classified as 'high hazard'. The inventory also includes 3 hazardous material sites, 2 military installations and 0 nuclear power plants.

Transportation and Utility Lifeline Inventory

Within HAZUS, the lifeline inventory is divided between transportation and utility lifeline systems. There are seven (7) transportation systems that include highways, railways, light rail (no systems in the area), bus, ports, ferry and airports. There are six (6) utility systems that include potable water, wastewater, natural gas, crude & refined oil, electric power and communications. The lifeline inventory data is provided in Tables 2 and 3.

The total value of the lifeline inventory is over 0 million dollars. This inventory includes over 133 kilometers of highways, 143 bridges, 0 kilometers of pipes.

Table 2: Transportation System Lifeline Inventory

System	Component	# Locations/ # Segments	Replacement value (millions of dollars)
Highways	Major Roads	32	10,181
	Bridges	291	403
	Tunnels	0	0
		Subtotal	10,584
Railways	Rail Tracks	64	677
	Bridges	0	0
	Tunnels	0	0
	Facilities	4	12
		Subtotal	689
Bus	Facilities	0	0
Ferry	Facilities	0	0
Port	Facilities	9	14
Airport	Facilities	120	834
	Runways	134	3,752
		Subtotal	4,586
		Total	15,873

Table 3: Utility System Lifeline inventory

System	Component	# Locations / Segments	Replacement value (millions of $)
Potable Water	Pipelines	0	0.00
	Facilities	0	0.00
	Distribution Lines	NA	0.00
		Subtotal	0.00
Waste Water	Pipelines	0	0.00
	Facilities	0	0.00
	Distribution Lines	NA	0.00
		Subtotal	0.00
Natural Gas	Pipelines	0	0.00
	Facilities	1	0.00
	Distribution Lines	NA	0.00
		Subtotal	0.00
Oil Systems	Pipelines	5	0.00
	Facilities	12	0.00
		Subtotal	0.00
Electrical Power	Facilities	5	0.00
	Distribution Lines	NA	0.00
		Subtotal	0.00
Communication	Facilities	118	0.00
	Distribution Lines	NA	0.00
		Subtotal	0.00
		Total	0.00

TAB B TO APPENDIX 1 TO ANNEX B TO ANCHORAGE EARTHQUAKE CDRP
MAXIMUM CREDIBLE PLANNING EARTHQUAKE

1. **Background.** Earthquake planning for Anchorage has traditionally been based on a repeat of the 1964 Good Friday Earthquake. However, in recent years scientists have made breakthroughs in understanding plate boundary earthquakes. The 1964 earthquake is now believed to represent approximately 500 years of energy storage along the plate interface, so this particular scenario is not a current threat. However, there are other faults that are a current threat to the Anchorage area. The Castle Mountain Fault, on the west side of Cook Inlet, has also been used in local earthquake exercises.

2. **AREST Study.** In 1996, the Alaska Regional Interagency Steering Committee (RISC) organized the Alaska RISC Earthquake Scenario Team (AREST) to develop a realistic earthquake threat assessment for the Anchorage area. On 29 May, 1997, the AREST met with Alaskan geologists and geophysicists at the University of Alaska Geophysical Institute in Fairbanks. At that meeting, scientists and planners verified that the 1964 scenario was not a short-term threat, and also determined that the Castle Mountain Fault was too far from Anchorage to produce a catastrophic event. However, two potential earthquakes, listed below, were identified as serious near-term threats to Anchorage. The AREST report is included as Exhibit 1, below.

3. **Maximum Credible Planning Earthquakes.** The following two scenarios were identified as having the potential to cause a catastrophic earthquake in Anchorage in the near future:

a. Shallow Crustal Earthquake: Magnitude 7.5. This could be on the Border Ranges Fault, which runs through the Hillside, Eagle River, and Chugiak areas of Anchorage; it could also be on an unknown fault, similar to those involved at Northridge and Kobe. This would produce severe damage in areas close to the fault. Due to the orientation of the local fault systems, such an earthquake could cause severe damage to almost all of the utility and land transportation systems that come into Anchorage. The projected damages are described in Exhibit 1 to Tab A to Appendix 2, below.

b. Alaska-Aleutians Megathrust Fault: Magnitude 8.0, involving the portion of the plate boundary west of the 1964 event, and east of the Cook Inlet volcanic axis. This area did not release in 1964, and it includes the portion of the plate boundary that is directly under Anchorage. The only recorded major earthquake in Alaska that appears to be similar to this event occurred in 1948 in the Shumagin Island area, but two earthquakes greater than magnitude 8 and deeper than 100 kilometers have been reported in the Andes. The peak acceleration would be less than for a shallow crustal earthquake, but the duration would be longer (90 to 120 seconds) and the impacted area would be much greater. In addition to the Municipality of Anchorage, this earthquake would produce major damage in the Matanuska-Susitna Borough, the Kenai Peninsula Borough, and possibly the City of Whittier in the Unorganized Borough. The projected damages are described in Exhibit 2 to Tab A to Appendix 2, below.

4. **Associated Risks.**

a. Tsunamis. Both events were determined to be unlikely to produce a Tsunami, due to the shallow water in the impacted areas.

b. Avalanches/Landslides. These are probable, especially between Anchorage and the Kenai Peninsula. The Seward Highway and the Alaska Railroad are often blocked by avalanches during the winter, and the avalanche situation was so severe in Southcentral Alaska during the 1999-2000 winter that it resulted in a Federal major disaster declaration.

c. Plumbing damage. During the winter, extended natural gas and/or electrical outages will result in frozen pipes in residences and commercial buildings. Partial repairs will be needed to allow normal use of the buildings. In December, 1975, a power plant fire in the Southwestern Alaska city of Bethel caused freezing damage in almost every building that had water and/or sewer service, resulting in a Federal major disaster declaration.

5. **Limitations on damage predictions.** The default data included with HAZUS does not adequately portray the local situation. While the Municipality of Anchorage has been updating the data base, and the Alaska District updated records on about 450 buildings during a training program in 2000, there are still major gaps. For example, the data does not include electrical and natural gas lines, and two of the four major hospitals in Anchorage have moved into new buildings in the past few years. Local planners believe that HAZUS is under-estimating damages to highways, railways, ports, and airports/runways, as well as over-estimating damage to water, waste water, natural gas, electric power, oil, and communications systems.

Alaska RISC Earthquake Scenario Team (AREST)

Purpose

This document describes the "maximum credible" planning earthquakes that will serve as the foundation for two Alaska Regional Interagency Steering Committee (RISC) earthquake response planning scenarios. To achieve scientific consensus on these earthquake descriptions, the Alaska RISC Earthquake Scenario Team *(AREST)* met with Alaskan geologists and geophysicists on May 29, 1997 at the University of Alaska Geophysical Institute in Fairbanks. At that meeting, AREST members and the scientists agreed on two different earthquake events as described below in Table 1.

For the next step of the scenario development, the AREST will provide these earthquake descriptions to technical experts, such as engineers, to define damages most likely to occur. Based on these damages, the AREST will then prepare 2 scenarios designed to test capabilities, plans, resource identification, staging, mass care facilities, and other elements of Federal and State disaster response.

Table 1

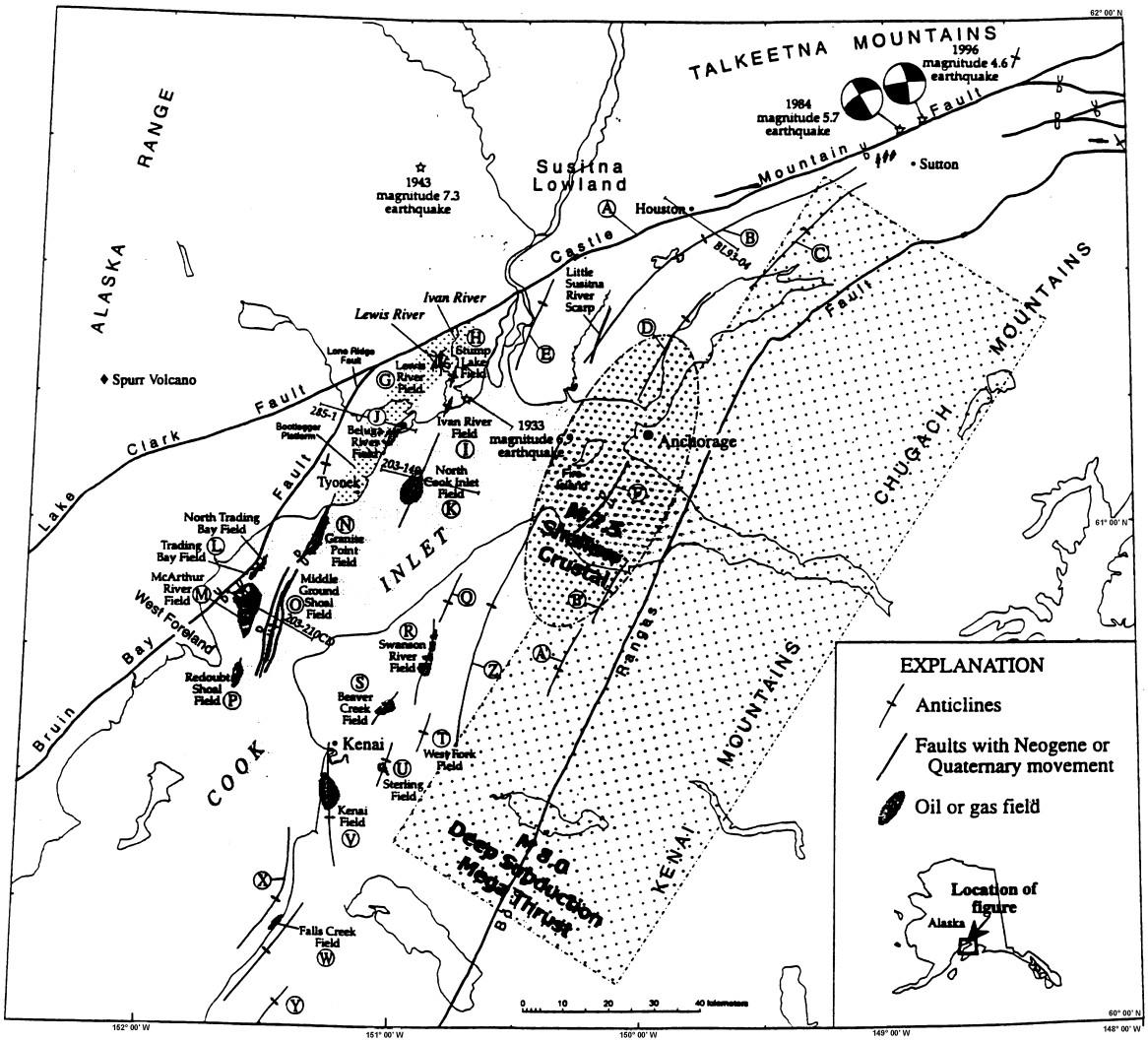
Maximum Credible Planning Earthquakes: Anchorage Area

(Likely to occur within 50 years)

	EQ #1	**EQ #2**
Magnitude	M 7.5	M 8.0
Description	Shallow Crustal	Deep Subduction Mega Thrust
Location *(See Figure 1)*	Near Anchorage	Upper Cook Inlet
Depth	3-15 km	40-50 km
Peak Acceleration	0.8g	0.2g
Duration	~40-50 seconds	1 ½-2 minutes
Characteristics	Sudden jolt, then high frequency shaking 1 – 10 cycles/second (1-10 motions/second) 1-10 Hz	Continuous rolling motion 2-5 seconds/cycle (0.2-0.5 motions/second) 0.2-0.5 Hz
Rupture Area	70 x 20 km	200 x 45 km
Secondary Hazards	Land slides Snow avalanches Submarine landslides	Land slides Snow avalanches Submarine landslide
Local Tsunamis	not likely due to shallow water	not likely due to shallow water

Disclaimer: *The earthquakes described here are intended to be used as the foundation for Federal and State response planning. The descriptions provide insufficient data to support any other application.*

Figure 1.
General Areas of Planning Earthquakes



(Haeussler et al.)

Seismic Sources

The Alaska RISC recognizes that Anchorage is not the only Alaskan city in danger of severe earthquakes -- Alaska's location along the Ring of Fire puts the majority of Alaskan communities at risk. The RISC group decided to focus first on the Anchorage and coastal communities because of the large population base and complex problems associated with earthquake response in coastal communities.

As indicated in the *Anchorage Earthquake Sources* table below, Anchorage's earthquake threat is not limited to a single source -- in fact, the greatest threat may be from an unidentified fault. Anchorage is potentially as at risk from a shallow crustal quake as from a larger magnitude subduction earthquake like the 1964 event. Both earthquake types could generate damage sufficient to overwhelm local and state response capabilities. Consequently, the geologists and geophysicists recommended defining two different planning events.

These two "maximum credible" planning earthquakes should be discussed in the larger context of Alaska's immense geological picture. The descriptions should illustrate the seismic consequences of the Pacific plate thrusting under the North American plate. That tectonic activity drives all of the other Alaska mechanisms, including the Castle Mountain Fault, the Border Ranges Fault, the Denali Fault, the strike slip faults in Southeast Alaska, and many others (see Figure 2). It would be negligent to focus on one specific fault when we don't know if Alaska's next damaging earthquake will originate from an unknown fault, a fault previously considered inactive, a known fault, or from the subduction zone.

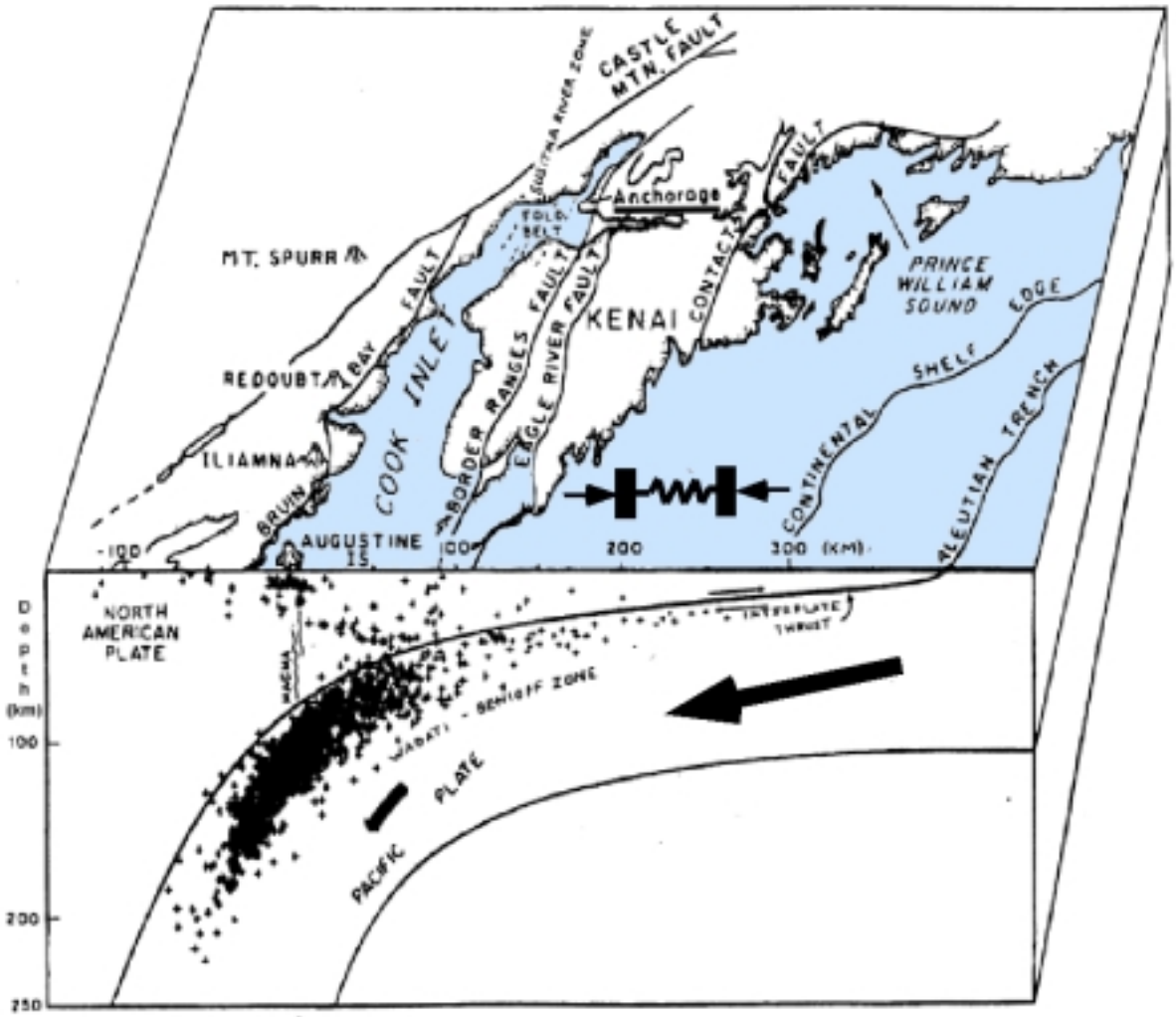
Table 2

Anchorage Earthquake Sources

(Modified from Combellick and Lahr, 1996)

	Maximum Magnitude	Closest Distance to Rupture	Average Return Period
INTERPLATE THRUST			
Shallower than ~20 km	9¼-9½	75 km	600-800 yr
Deeper than ~20 km	8	40-50 km	Unknown
SUBDUCTED PLATE	7-7½	>40 km	Unknown
OVERRIDING PLATE			
Border Ranges fault	7½?	<10 km	>10,000 yr?
N. Cook Inlet fold belt	7?	<10 km	Unknown
Castle Mountain fault	7½-7¾	40 km	1,000 yr?
Susitna River zone	7½	60 km	Unknown
Volcanic axis	6	130 km	Unknown
Other sources	7½	<10 km	Unknown

Figure 2.
Anchorage Seismic Sources
(Combellick & Lahr)



Glossary to Table of Anchorage Earthquake Sources

average return period – the average time interval between earthquakes of maximum magnitude, estimated from seismological and geological data.

interplate thrust – fault contact along which the Pacific plate slides beneath the North American plate.

magnitude – a measure of earthquake size, determined from recorded ground motion and corrected for distance to the event. Common types of magnitude are local (M_L), body wave (m_b), surface wave (M_s), and moment (M_w). As a rule of thumb, the energy released by an earthquake increases by a factor of 32 for each unit increase in magnitude. For example, a magnitude 9 event releases 32 times more energy than a magnitude 8 event.

maximum magnitude – magnitude of the largest earthquake that might reasonably be expected to occur on each source.

N. Cook Inlet fold belt – a zone of folded and faulted rocks in the North American plate which may be the source of a band of shallow earthquakes beneath northern Cook Inlet.

other sources – allows for unknown sources that may be buried or are as yet undiscovered.

overriding plate – Rock material of the North American plate, which is seismogenic from the surface to about 35 km depth.

subducted plate – portion of the Pacific plate that has been thrust beneath the North American plate and continues downward into the mantle, reaching ~100 km below the Aleutian volcanoes. Many earthquakes occur within this plate, creating a pattern of seismicity known as the Wadati-Benioff zone.

Susitna River zone – a diffuse zone of shallow seismicity that extends northward from Cook Inlet to the Alaska Range.

volcanic axis – shallow seismicity associated with the Aleutian volcanic arc, which extends northeastward as far as Mt. Spurr.

Reference

Combellick, R.A., and Lahr, J.C., 1996, Earthquake potential and hazards in southcentral Alaska [abs.]: Geological Society of America Abstracts with Programs, v. 28, no. 5, p. 56-57.

Scientific Advisors to the AREST

Mr. Rod Combellick
AK Division of Geology and Geophysical Surveys

Dr. Roger Hanson
State Seismologist

Dr. John Lahr
UAF Geophysical Institute

Dr. Niren Biswas
UAF Geophysical Institute

Dr. Max Wyss
UAF Geophysical Institute

Dr. Peter Haeussler
US Geological Survey

Dr. Thomas J. Sokolowski
West Coast Alaska Tsunami Warning Center

Dr. Elena Troshina
UAF Geophysical Institute

Alaska RISC Earthquake Scenario Team *(AREST)*

Mr. Mike Webb
Alaska Division of Emergency Services

Mr. Merv Mullins
Alaska District USACE

Ms. Joan Rave
FEMA Region 10

Ms. Chris Jonientz-Trisler
FEMA Region 10

Ms. Pamela Bergmann
Department of the Interior

Mr. Matthew Kenney
American Red Cross

Mr. Vince McCoy
Municipality of Anchorage

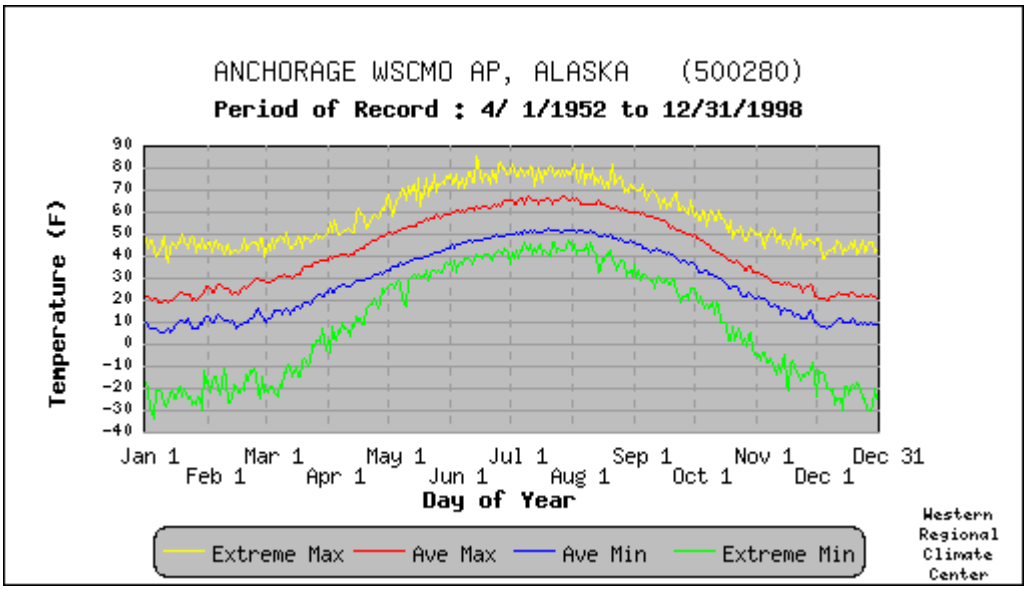
Mr. Robert B. Stewart
Municipality of Anchorage

Dr. Thomas J. Sokolowski
NOAA/West Coast & Alaska Tsunami Warning Center

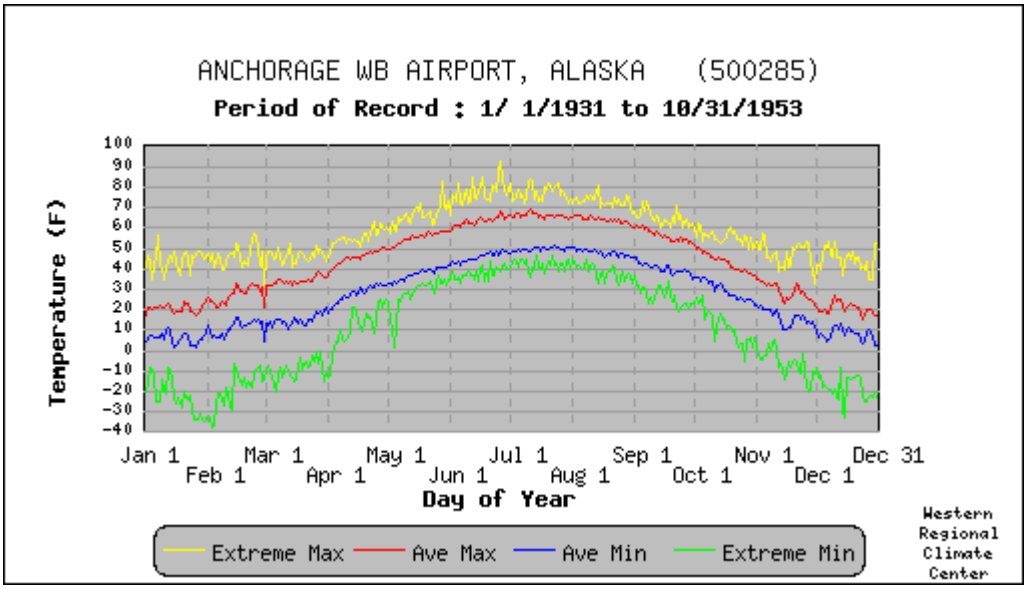
♥ Thanks to Dale Kloes of FEMA Region 10 for facilitating the Fairbanks meeting and for his contributions to this document – J.R.

TAB C TO APPENDIX 1 TO ANNEX B TO ANCHORAGE EARTHQUAKE CDRP
CLIMATE

Daily Extreme Temperatures—Current Weather Station



Daily Extreme Temperatures—Prior Weather Station



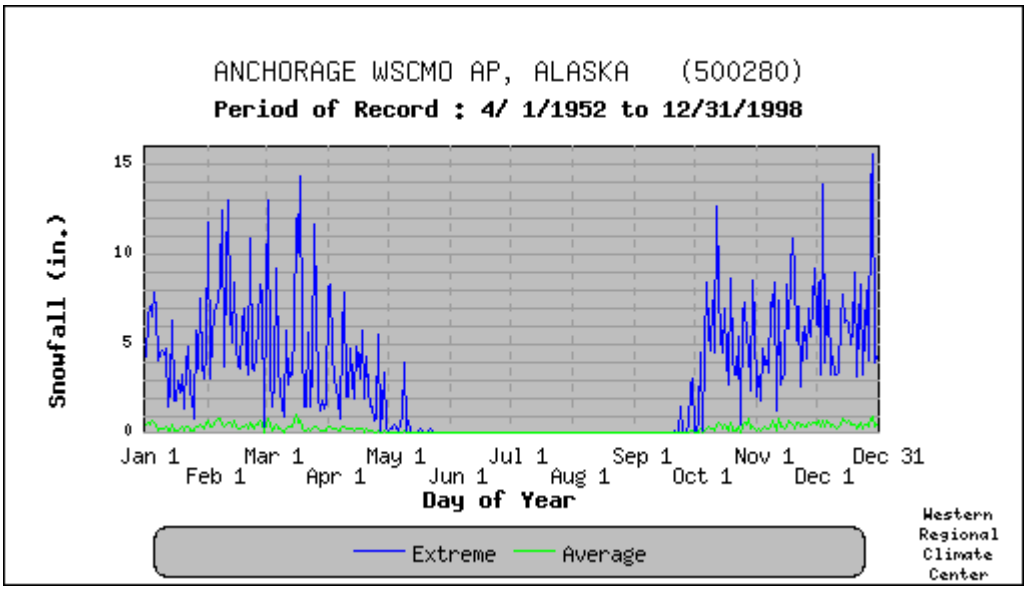
MINIMUM DAILY TEMPREATURES, ANCHORAGE, 1952-1999

	DEC	JAN	FEB
MAX	32.81	27.58	26.93
MEAN	28.91	8.03	11.07
MIN	-7.35	-4.71	-5.00
RECORD	-30	-34	-26

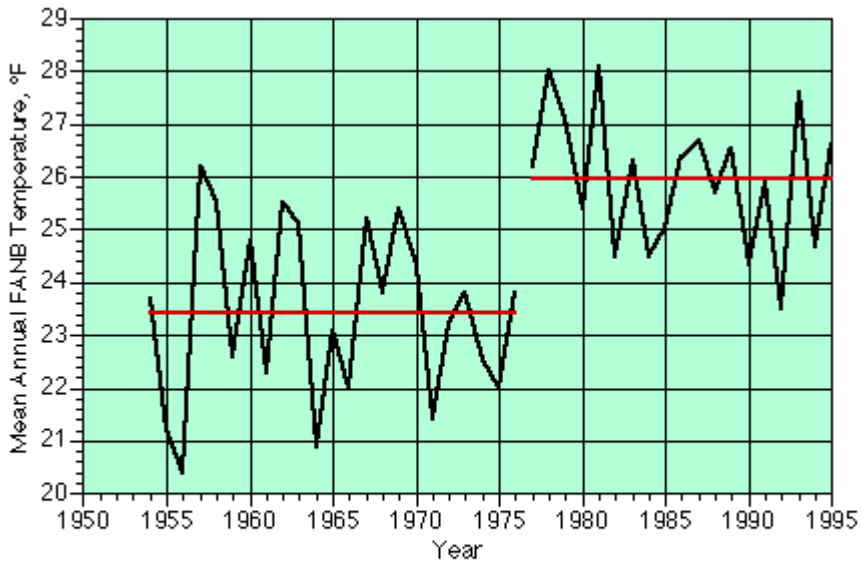
MINIMUM DAILY TEMPERATURES, ANCHORAGE WB, 1931-1953

	DEC	JAN	FEB
MAX	19.26	19.42	25.43
MEAN	7.62	5.41	10.89
MIN	-7.26	-10.39	-5.25
RECORD	-33	-35	-38

(Station was further from Cook Inlet)



Daily Snowfall—Current Weather Station

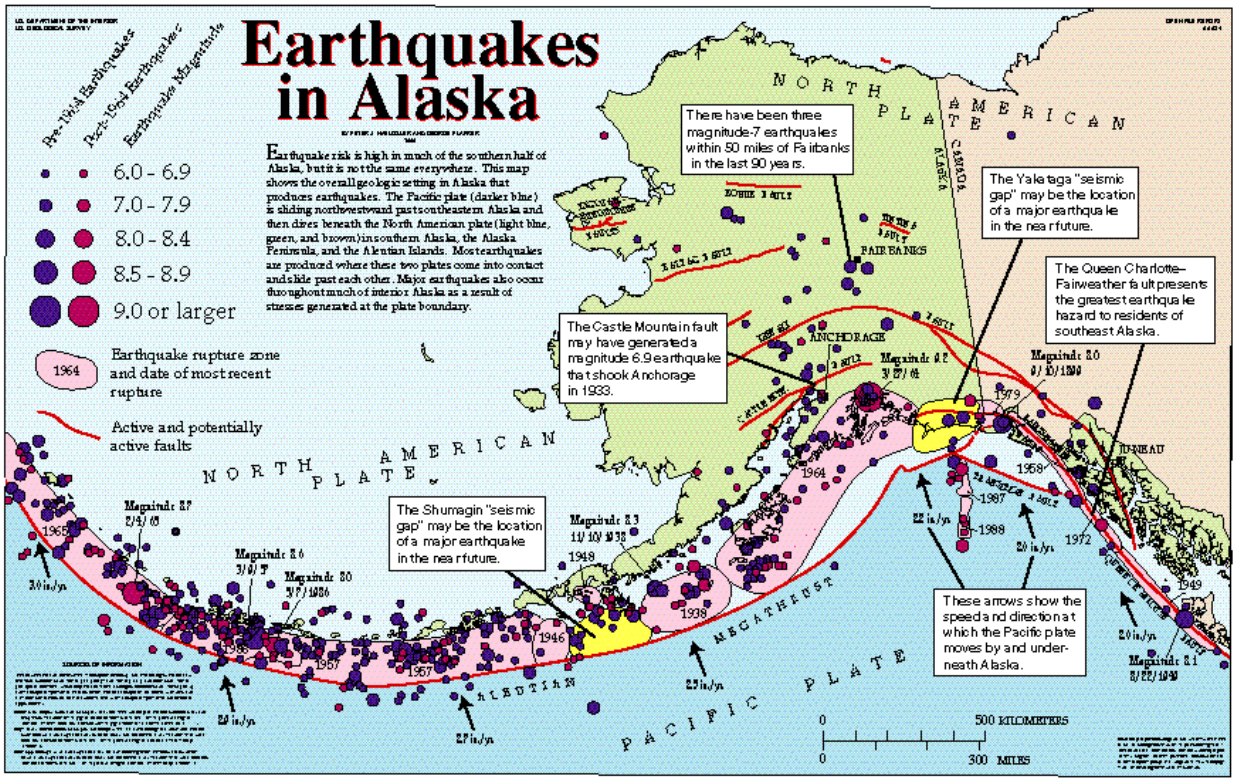


Mean Annual Temperature, average of Fairbanks, Anchorage, Nome and Barrow, Alaska. Red horizontal lines are averages for 1954-76 and 1977-95.

Note the major increase in temperatures in the 1975-76 time frame. Many meteorologists believe this change is due to a long-term (40+ year) cycle. A similar warm period occurred in the 1934 through 1944 time frame. A return to colder temperatures, during the next 10 or 15 years, would intensify the effects of utilities outages following an earthquake in the Anchorage area.

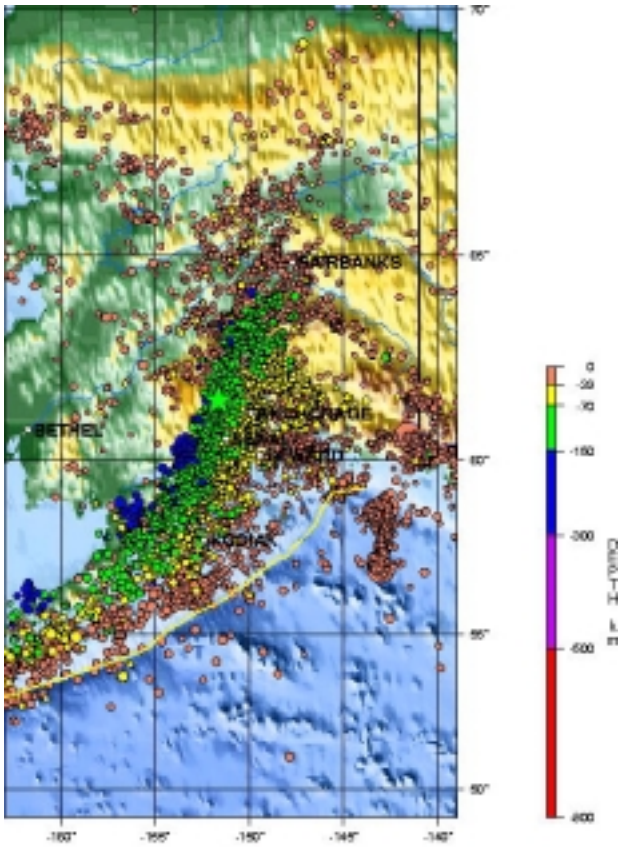
TAB D TO APPENDIX 1 TO ANNEX B TO ANCHORAGE EARTHQUAKE CDRP
MAPS

Seismic zones in Alaska

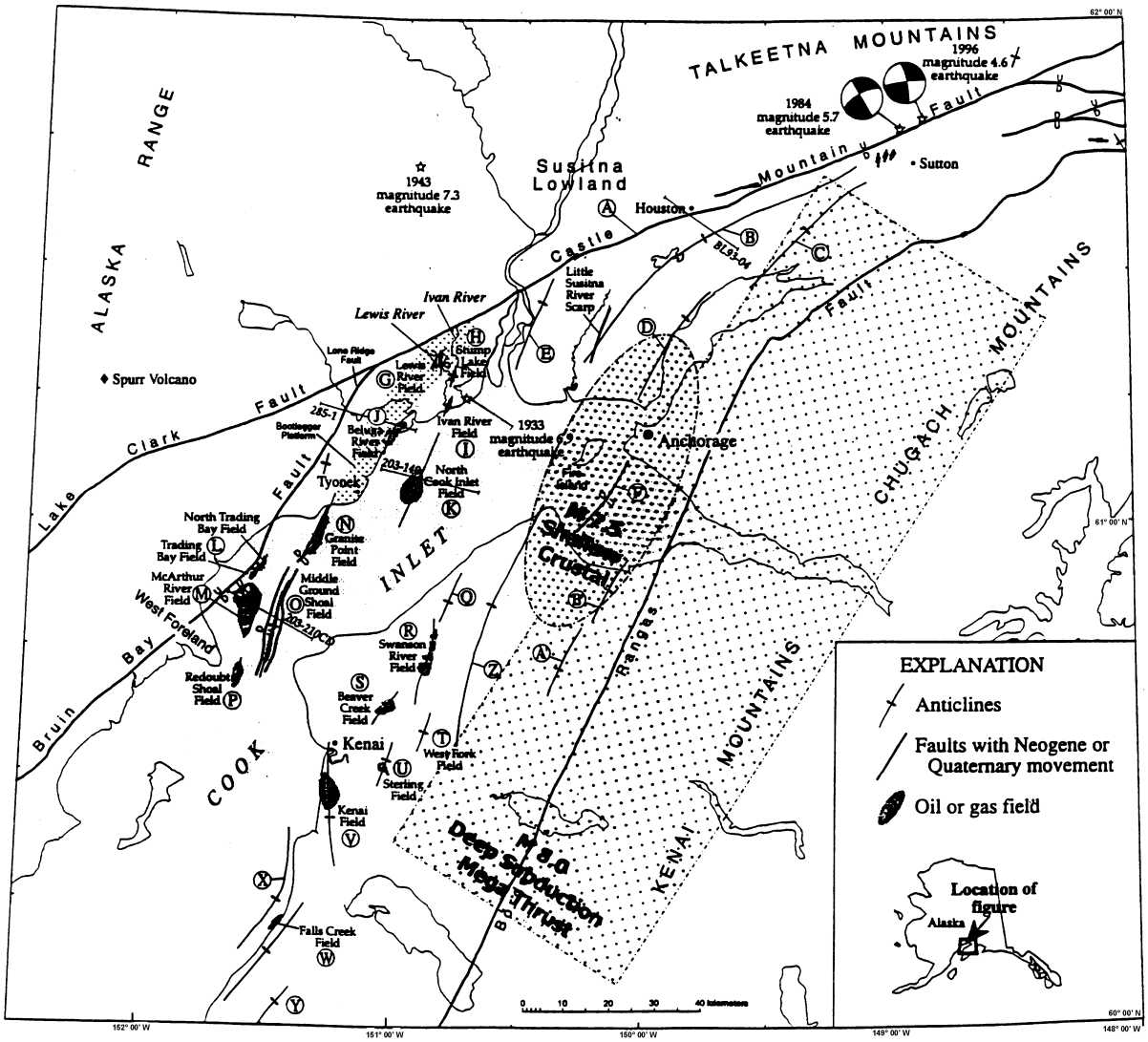


General Areas of Planning Earthquakes

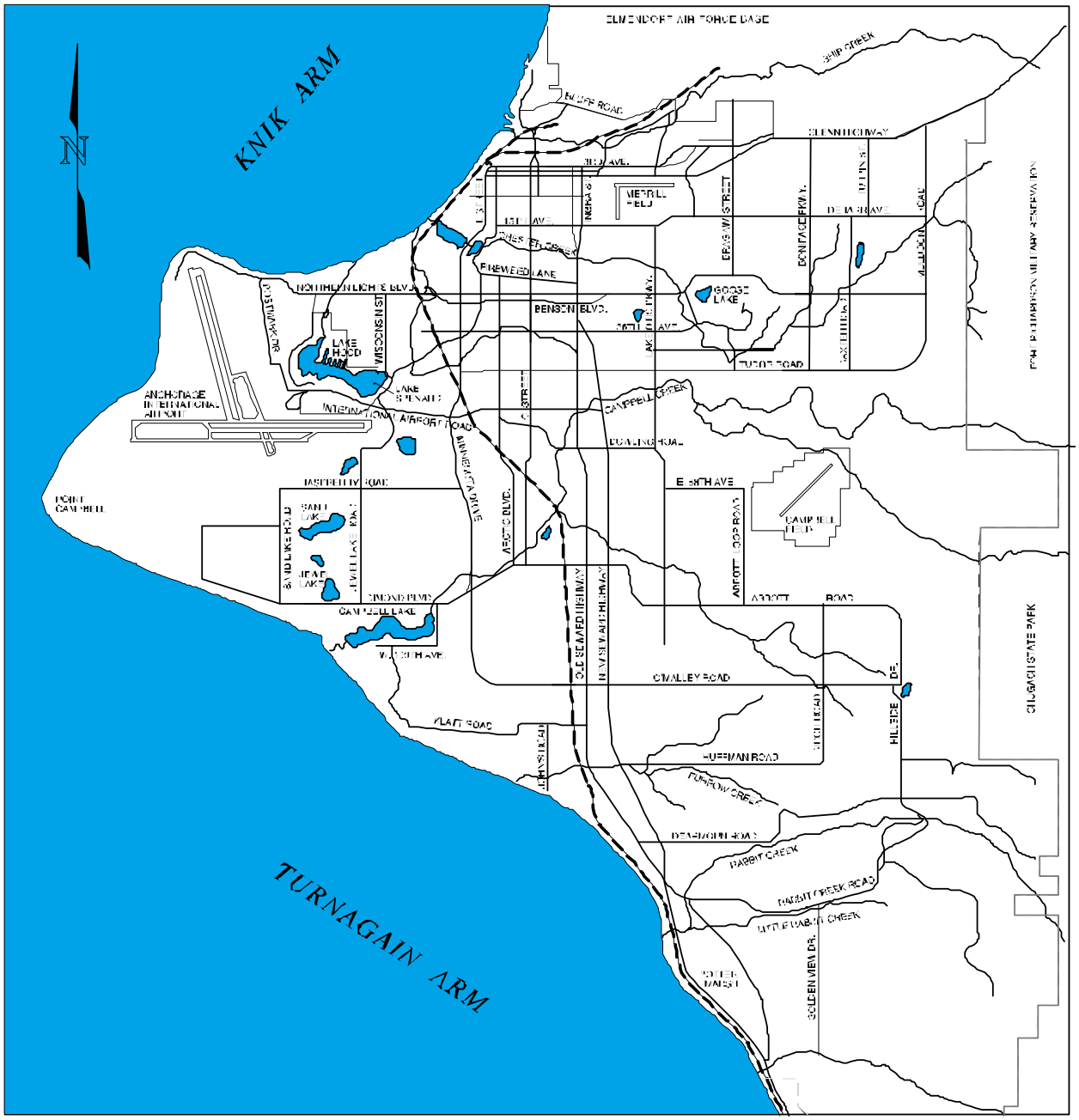
Historical Earthquakes in Southcentral Alaska



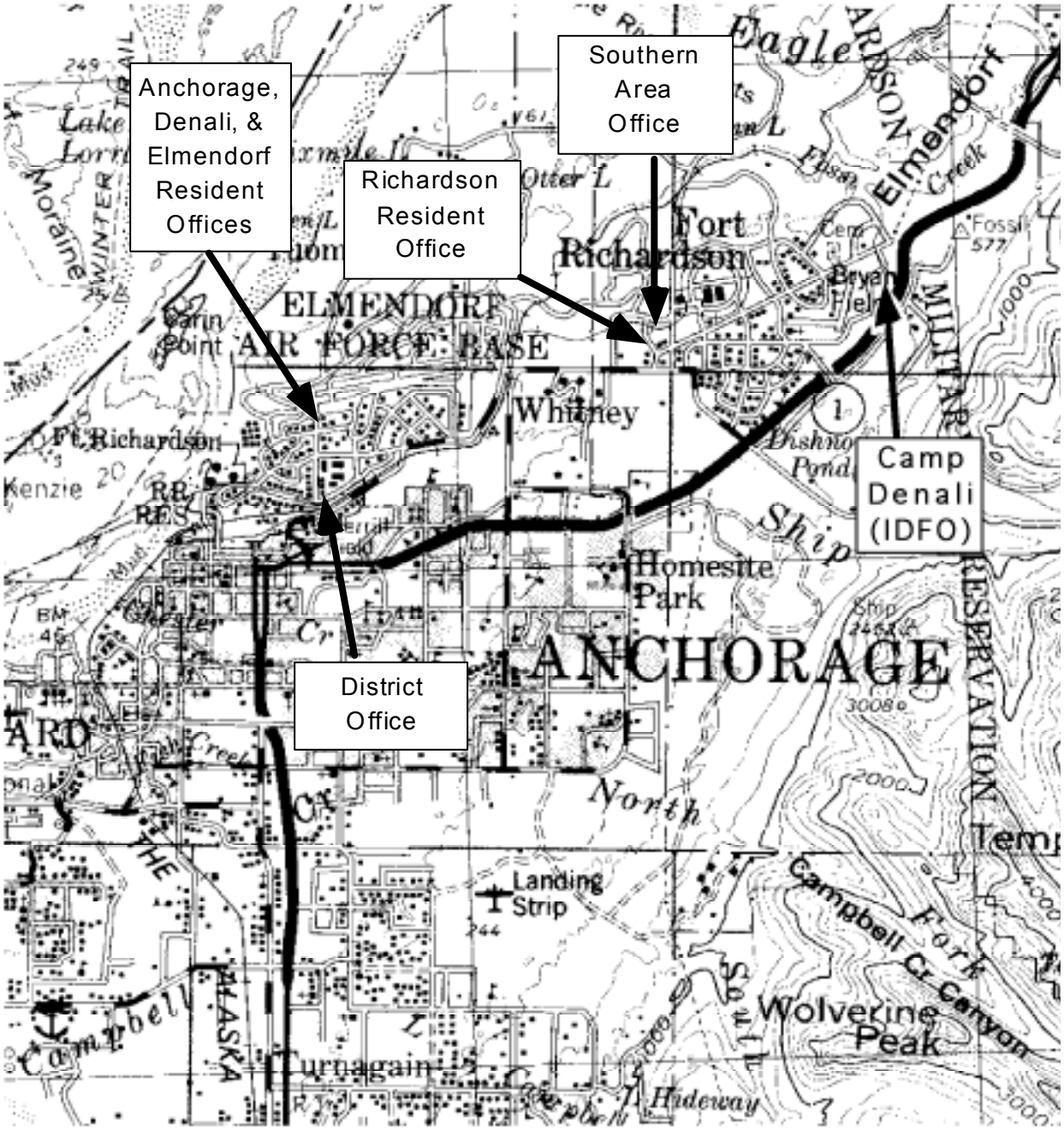
SOUTHERN ALASKA.
2001 03 08 09:27:07.3& 61.542N 151.641W Depth: 85 km 2.4mb
Seismicity 1977 - 1997, Plate Boundaries in Yellow
USGS National Earthquake Information Center


TALKEETNA MOUNTAINS
1996 magnitude 4.6 earthquake
1984 magnitude 5.7 earthquake
Mountain Fault
Sutton
Susitna Lowland
1943 magnitude 7.3 earthquake
Houston
Castle Fault
Little Susitna River Scarp
Ivan River
Lewis River
Lone Ridge Fault
Lewis River Field
Stump Lake Field
Spurr Volcano
Clark Fault
Lake
Bootlegger Platform
Beluga River Field
Ivan River Field
1933 magnitude 6.9 earthquake
Anchorage
Fire Island
Tyonek
North Cook Inlet Field
Fault
INLET
North Trading Bay Field
Trading Bay Field
Granite Point Field
McArthur River Field
Middle Ground Shoal Field
West Foreland
Bay
Bruin
Redoubt Shoal Field
Swanson River Field
Beaver Creek Field
Kenai
West Fork Field
Sterling Field
Kenai Field
COOK
Falls Creek Field
Deep Subduction Mega-Thrust
Ranges
KENAI MOUNTAINS
CHUGACH MOUNTAINS
EXPLANATION
Anticlines
Faults with Neogene or Quaternary movement
Oil or gas field
Location of figure
Alaska
0 10 20 30 40 kilometers
62° 00' N
61° 00' N
60° 00' N
152° 00' W
151° 00' W
150° 00' W
149° 00' W
148° 00' W

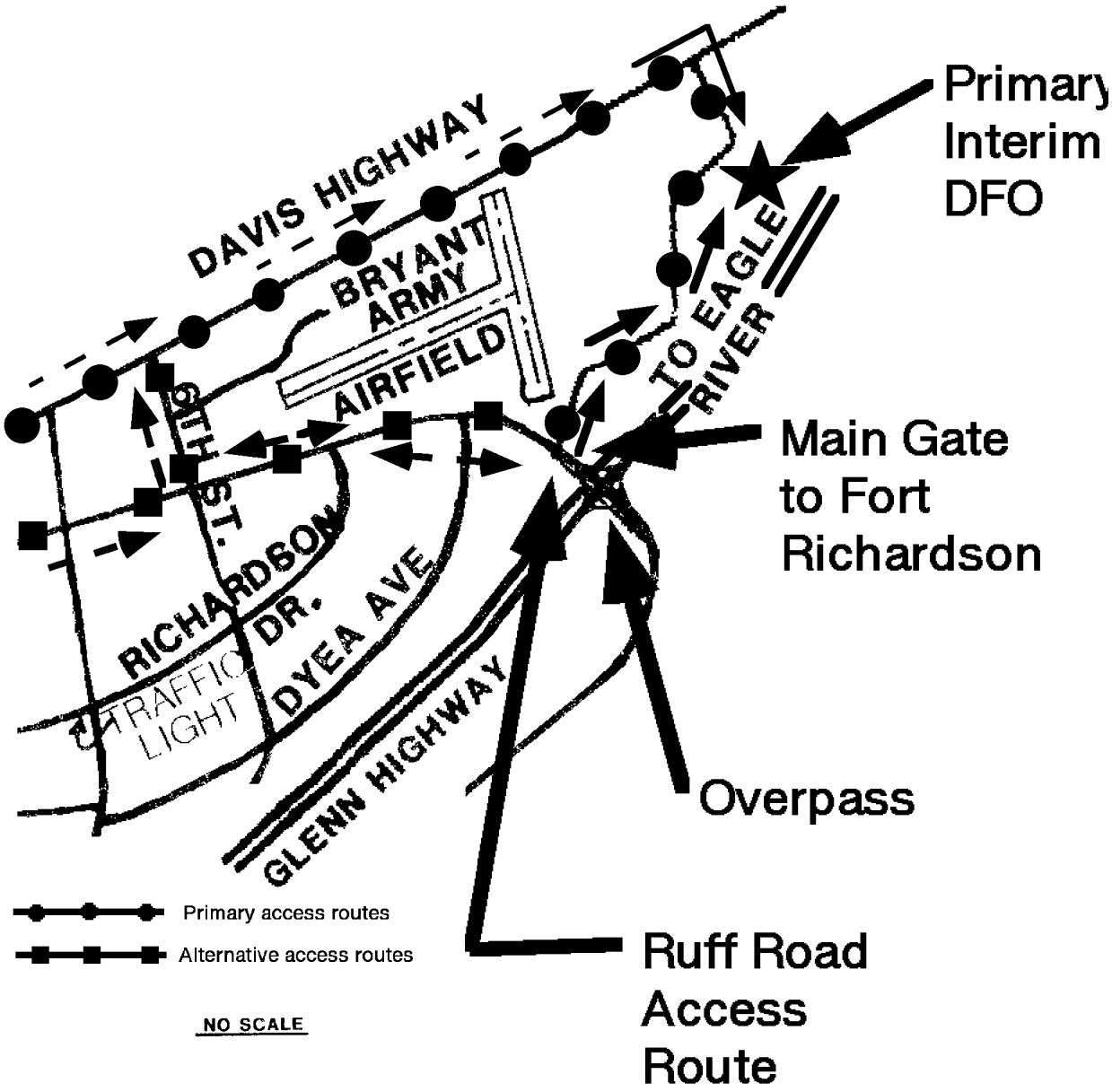
Anchorage Bowl Map



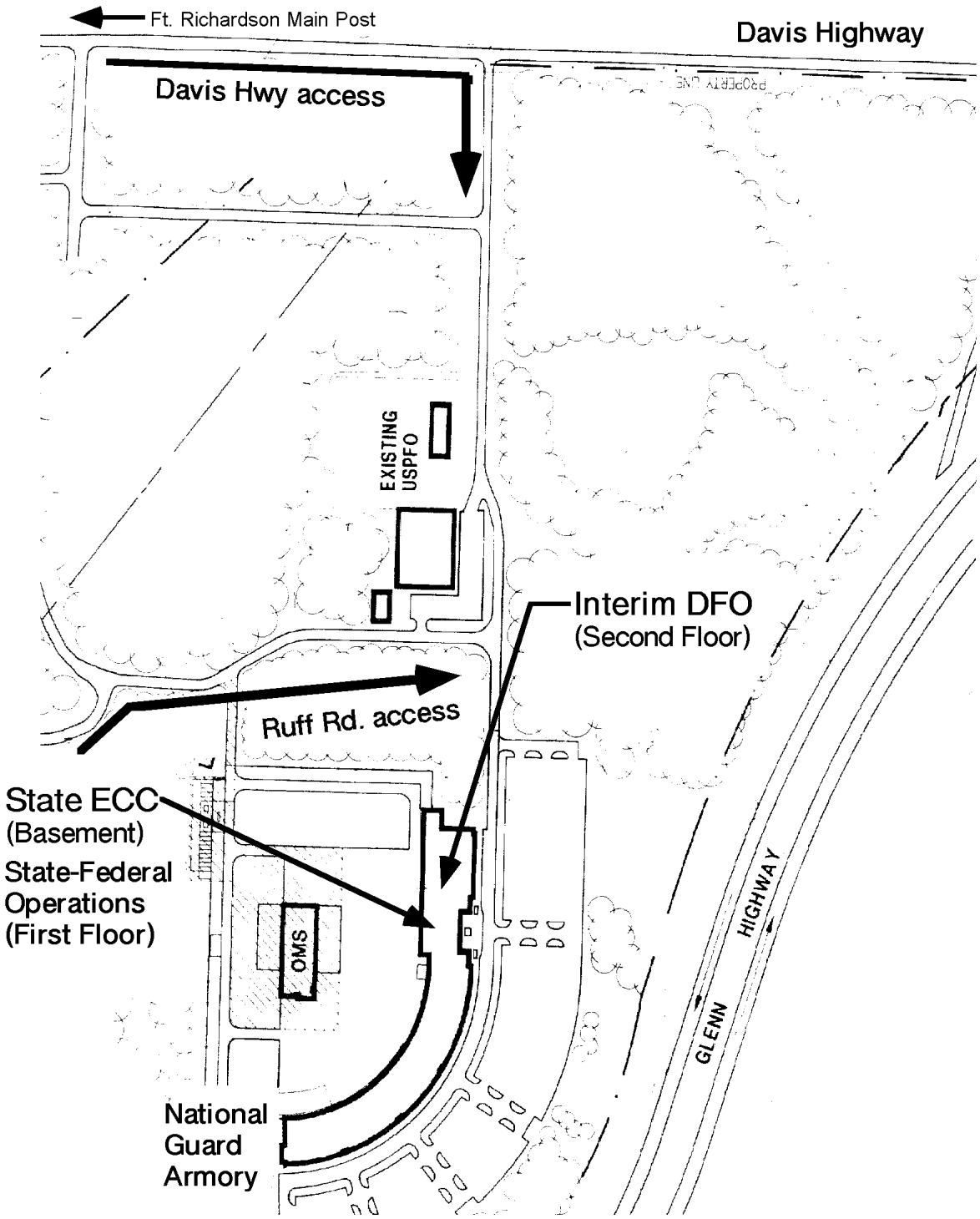
POA Facilities in Anchorage Area



Location of IDFO & SCC

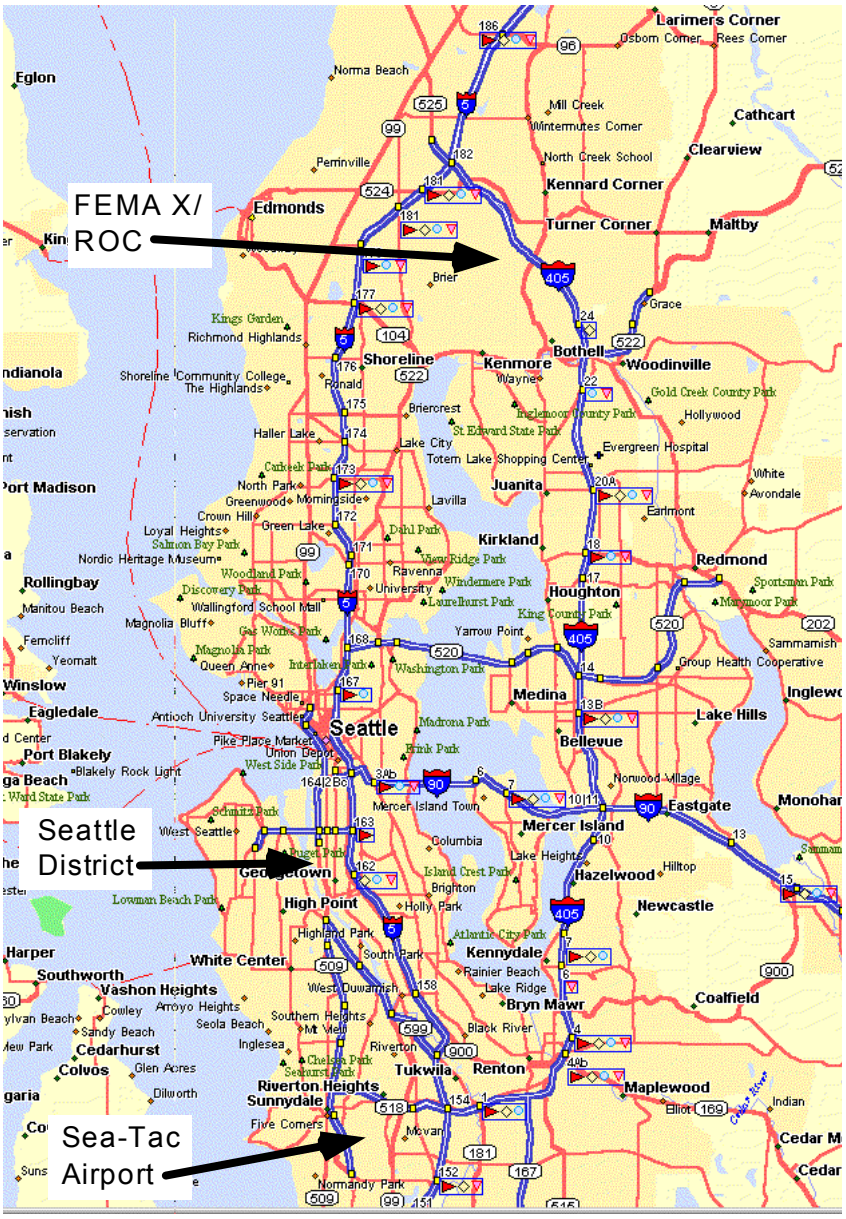


IDFO and SCC


Ft. Richardson Main Post
Davis Highway
Davis Hwy access
EXISTING USPFO
Interim DFO
(Second Floor)
Ruff Rd. access
State ECC
(Basement)
State-Federal Operations
(First Floor)
OMS
GLENN HIGHWAY
National Guard Armory

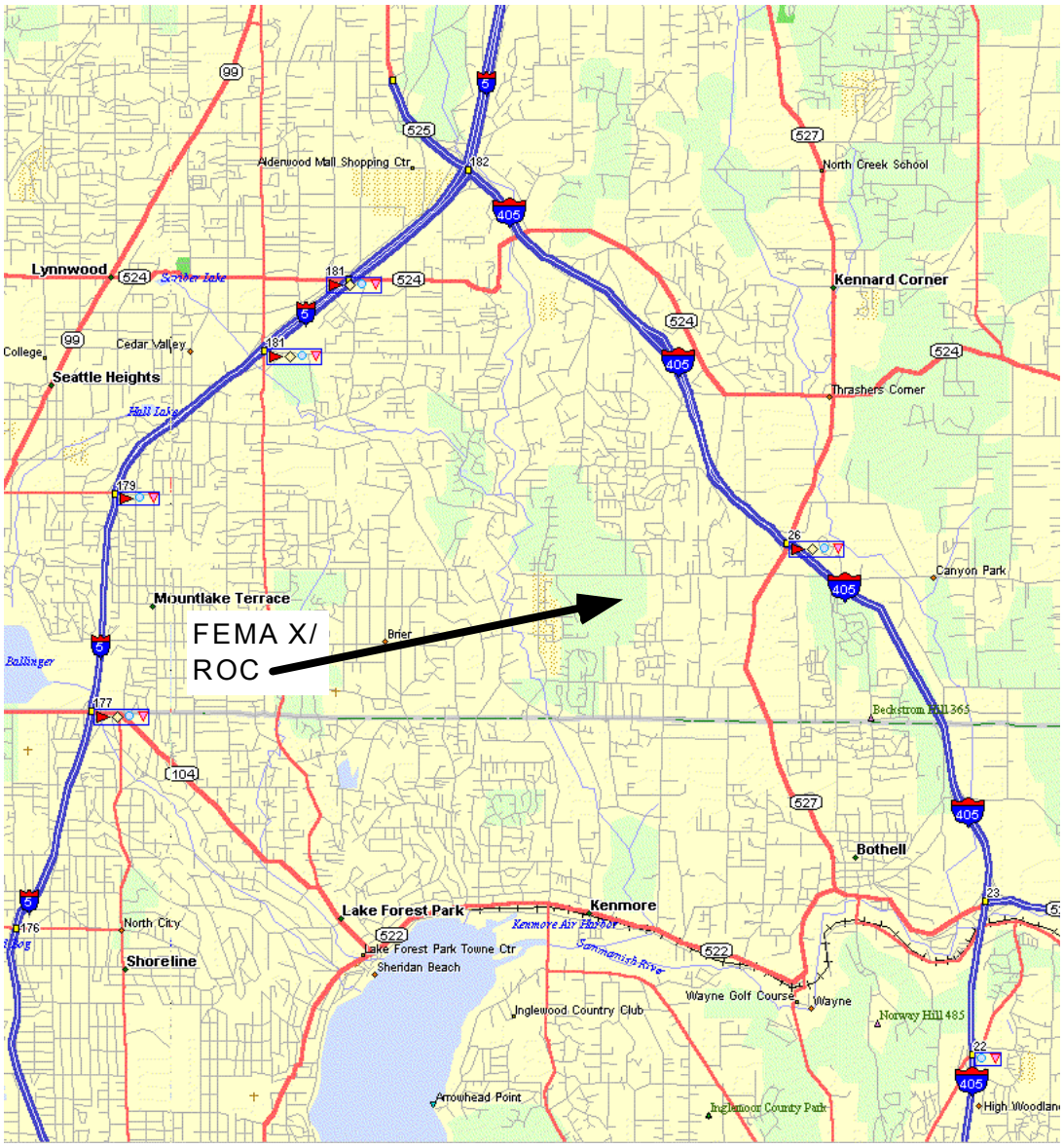
Regional Operations Center (ROC)

General Location



Regional Operations Center (ROC)

General Location



Regional Operations Center (ROC)

Location

APPENDIX 2 TO ANNEX B TO ANCHORAGE EARTHQUAKE CDRP
ASSESSMENT OF POST-EARTHQUAKE SITUATION

TAB A TO APPENDIX 2 TO ANNEX B TO ANCHORAGE EARTHQUAKE CDRP
PHYSICAL DAMAGE

EXHIBIT 1 TO TAB A TO APPENDIX 2 TO ANNEX B TO ANCHORAGE EARTHQUAKE CDRP
HAZUS PREDICTIONS, 7.5 SHALLOW CRUSTAL EVENT

HAZUS uses the following set of information to define the earthquake parameters used for the earthquake loss estimate provided in this report.

Scenario Name	Anchorage 7.5
Type of Earthquake	Arbitrary event
Fault Name	Border Ranges
Historical Epicenter ID #	NA
Probabilistic Return Period	NA
Longitude of Epicenter	149.8 W
Latitude of Epicenter	61.16 N
Earthquake Magnitude	7.5
Depth (Km)	0
Rupture Length (Km)	85.1138
Rupture Orientation (degrees)	30
Attenuation Function	Boor, Joyner & Fumal (1994)

Building Damage

HAZUS estimates that about 40,000 buildings will be at least moderately damaged. This is over 67% of the total number of buildings in the region. There are an estimated 9,612 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS technical manual. Table 1 below summaries the expected damage by general occupancy for the buildings in the region. Table 2 summaries the expected damage by general building type.

Table 1: Expected Building Damage by Occupancy

	None	Slight	Moderate	Extensive	Complete
Residential	6,809	13,113	20,943	8,630	8,750
Commercial	85	94	341	387	643
Industrial	11	8	56	72	128
Agriculture	0	1	3	3	9
Religion	8	11	26	23	53
Government	0	0	0	0	3
Education	5	0	5	5	26
Total	6,918	13,227	21,374	9,120	9,612

Table 2: Expected Building Damage by Building Type (All Design Levels)

	None	Slight	Moderate	Extensive	Complete
Concrete	47	69	197	244	499
Mobile Homes	58	115	488	1,144	4,774
Precast Concrete	26	13	69	104	204
RM*	43	36	133	171	254
Steel	48	12	93	131	247
URM*	1	0	6	20	149
Wood	6,695	12,982	20,338	7,306	3,485
Total (60,251)	6,918	13,227	21,374	9,120	9,612

*Note: RM Reinforced Masonry; URM Unreinforced Masonry

Essential Facility Damage

Before the earthquake, the region had 808 hospital beds available for use. On the day of the earthquake, the model estimates that only 2 hospital beds (60%) are available for use by patients already in the hospital and those injured by the earthquake. After one week, 1% of the beds will be back in service. By 30 days, 8% will be operational.

NOTE: This figure will need to be re-evaluated. It appears the regional data supplied with the model included two hospital buildings that have been replaced within the last 5 years.

Table 3: Expected Damage to Essential Facilities

Classification	Total	Moderate or Greater Damage (>50%)	Complete Damage	>50% Functionality at day 1
Hospitals	7	7	6	0
Schools	168	168	122	0
EOCs	1	1	0	0
Police Stations	5	5	1	0
Fire Stations	7	7	5	0

Transportation and Utility Lifeline Damage

Table 4: Expected Damage to the Transportation Systems

System	Component	Locations/ Segments	At least Moderate Damage	At least Complete Damage	Functionality >50% After Day 1	Functionality >50% After Day 7
Highway	Roads	12	0	0	12	12
	Bridges	143	91	58	46	52
	Tunnels	0	0	0	0	0
Railways	Tracks	53	0	0	53	53
	Bridges	0	0	0	0	0
	Tunnels	0	0	0	0	0
	Facilities	1	0	0	1	1
Bus	Facilities	0	0	0	0	0
Port	Facilities	2	0	0	2	2
Airport	Facilities	22	14	2	12	22
	Runways	27	0	0	27	27

Note: Roadway segments, railroad tracks and light rail tracks are assumed to be damaged by ground failure only. If ground failure maps are not provided, damage estimates to these components will not be computed.

Tables 5-7 provide information on the damage to the utility lifeline systems. Table 5 provides damage to the utility system facilities. Table 6 provides estimates on the number of leaks and breaks by the pipelines of the utility systems. For electric power and potable water, HAZUS performs a simplified system performance analysis. Table 7 provides a summary of the system performance information.

Table 5 : Expected Utility System Facility Damage

System	Total #	W/at Least Moderate Damage	With Complete Damage	With Functionality > 50 After: Day 1	Day 7
Potable Water	0	0	0	0	0
Waste Water	1	1	0	0	0
Natural Gas	2	1	0	0	2
Oil Systems	6	3	0	3	5
Electrical Power	12	10	1	0	10
Communication	53	39	4	33	53
Total	78	54	7	36	70

Table 6 : Expected Utility System Pipeline Damage

System	Total Pipelines Length (kms)	Number of Leaks	Number of Breaks
Potable Water	0	0	0
Waste Water	0	0	0
Natural Gas	0	0	0
Oil	0	0	0
Total	0	0	0

Table 7: Expected Potable Water and Electric Power System Performance

	Total # of Households	Number of Households without service at: Day 1	Day 3	Day 7	Day 30	Day 90
Potable Water	83,043	81,519	81,482	81,406	80,864	78,010
Electric Power	83,043	73,542	62,951	41,653	10,603	169

Table 8: Expected Communication Facility Functionality

	Total # of Facilities	Number of Households with service at: Day 0	Day 1	Day 3	Day 7	Day 30	Day 90
Anchorage, AK	53	17.17%	52.88%	74.15%	80.90%	95.46%	99.13%

Induced Earthquake Damage

Fire Following Earthquake

Fires often occur after an earthquake. Because of the number of fires and the lack of water to fight the fires, they can often burn out of control. HAZUS uses a Monte Carlo simulation model to estimate the number of ignitions and the amount of burnt area. For this scenario, the model estimates that there will be 19 ignitions that will burn about 30 sq. mi (0.1% of the region's total area.) The model also estimates that the fires will displace about 600 people and burn about 30 million dollars of building value.

Debris Generation

HAZUS estimates the amount of debris that will be generated by the earthquake. The model breaks the debris into two general categories: a) Brick/Wood and b) Reinforced Concrete/Steel. This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 3.63 million tons of debris will be generated. Of the total amount, Brick/Wood comprises 30% of the total, with the remainder being Reinforced Concrete/Steel. If the debris tonnage is converted to an estimated number of truckloads, it will require 145,000 truckloads (@25 tons/truck) to remove the debris generated by the earthquake.

Social Impact

Shelter Requirement

HAZUS estimates the number of households that are expected to be displaced from their homes due to the earthquake and the number of displaced people that will require accommodations in temporary public shelters. The model estimates 15,173 households to be displaced due to the earthquake. Of these, 9,718 people (out of a total population of 226,300) will seek temporary shelter in public shelters.

Casualties

HAZUS estimates the number of people that will be injured and killed by the earthquake. The casualties are broken down into four (4) severity levels that describe the extent of the injuries. The levels are described as follows;

· Severity Level 1: Injuries will require medical attention but hospitalization is not needed.
· Severity Level 2: Injuries will require hospitalization but are not considered life-threatening
· Severity Level 3: Injuries will require hospitalization and can become life threatening if not promptly treated.
· Severity Level 4: Victims are killed by the earthquake.

The casualty estimates are provided for three (3) times of day: 2:00 AM, 2:00 PM and 5:00 PM. These times represent the periods of the day that different sectors of the community are at their peak occupancy loads. The 2:00 AM estimate considers that the residential occupancy load is maximum, the 2:00 PM estimate considers that the educational, commercial and industrial sector loads are maximum and 5:00 PM represents peak commute time.

Table 9: Casualty Estimates

		Level 1	Level 2	Level 3	Level 4
2 AM	Residential	3,578	665	55	55
	Non-Residential	177	34	5	5
	Commute	5	6	11	2
	Total	3,760	706	70	61
2 PM	Residential	815	152	12	12
	Non-Residential	9,407	1,834	249	249
	Commute	24	31	53	10
	Total	10,246	2,017	315	272
5 PM	Residential	968	180	15	15
	Non-Residential	2,835	550	74	74
	Commute	65	85	146	28
	Total	3,868	815	235	117

Economic Loss

The total economic loss estimated for the earthquake is 5.903 billion dollars, which represents 33% of the total replacement value of the region’s buildings. The following three sections provide more detailed information about these losses.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the earthquake. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the earthquake.

The total building-related losses were 5.903 billion dollars. 22% of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 63% of the total loss. Table 10 below provides a summary of the losses associated with the building damage.

Table 10: Building-Related Economic Loss Estimates

(Millions of dollars)

Area	Residential	Commercial	Industrial	Others	Total
Building Loss					
Structural	540.6	306.1	38.6	45.4	930.6
Non-Structural	2,158.9	634.1	62.8	119.7	2,975.5
Content	428.9	173.9	30.4	30.4	663.6
Inventory	N/A	3.4	3.6	0.2	7.2
Subtotal	3,128.4	1,117.6	135.4	195.6	4,577.0
Business Interruption Loss					
Wage	31.1	225.4	5.7	8.6	270.8
Income	13.2	205.0	4.1	2.8	225.1
Rental	229.6	96.2	2.0	5.6	333.5
Relocation	303.3	135.5	8.3	49.3	496.5
Subtotal	577.2	662.2	20.2	66.3	1,325.9
Total	3,705.6	1,779.7	155.6	262.0	5,902.9

Transportation and Utility Lifeline Losses

For the transportation and utility lifeline systems, HAZUS computes the direct repair cost for each component only. There are no losses computed by HAZUS for business interruption due to lifeline outages. Tables 11 & 12 provide a detailed breakdown in the expected lifeline losses.

HAZUS estimates the long-term economic impacts to the region for 15 years after the earthquake. The model quantifies this information in terms of income and employment changes within the region. Table 15 presents the results of the region for the given earthquake.

Table 11: Transportation System Economic Losses

(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Highway	Roads	1,334.0	0.0	0.0
	Bridges	179.0	67.5	37.7%
	Tunnels	0.0	0.0	0.0
	Subtotal	1,513.4	67.5	4.5
Railways	Tracks	292.4	0.0	0.3
	Bridges	0.0	0.0	0.0
	Tunnels	0.0	0.0	0.0
	Facilities	3.0	1.0	0.0
	Subtotal	295.1	1.0	0.3
Bus	Facilities	0.0	0.0	0.0
Port	Facilities	3.0	0.0	0.0
Airport	Facilities	125.0	50.4	40.3
	Runways	756.0	0.0	0.0
	Subtotal	881.0	50.4	5.7
TOTAL		2,692.8	118.8	4.4

Table 12: Utility System Economic Losses
(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Potable Water	Pipelines	0.0	0.0	0.0
	Facilities	0.0	0.0	0.0
	Distribution Lines	0.0	N/A	N/A
	Subtotal	0.0	0.0	0.0
Waste Water	Pipelines	0.0	0.0	0.0
	Facilities	0.0	40.5	0.0
	Distribution Lines	0.0	N/A	N/A
	Subtotal	0.0	40.5	0.0
Natural Gas	Pipelines	0.0	0.0	0.0
	Facilities	0.0	0.8	0.0
	Distribution Lines	0.0	N/A	N/A
	Subtotal	0.0	0.8	0.0
Oil Systems	Pipelines	0.0	0.0	0.0
	Facilities	0.0	161.0	0.0
	Subtotal	0.0	161.0	0.0
Electrical Power	Facilities	0.0	350.7	0.0
	Distribution Lines	0.0	N/A	N/A
	Subtotal	0.0	350.7	0.0
Communication	Facilities	0.0	45.0	0.0
	Distribution Lines	0.0	N/A	N/A
	Subtotal	0.0	45.0	0.0
Total		0.0	598.0	0.0

Table 13. Indirect Economic Impact
(with outside aid)

Year(s)	1	2	3	4	5	6-15	Units
Income Impact	-40	-138	-184	-184	-184	-184	million$
% Income Impact	-0.85	-2.90	-3.85	-3.85	-3.85	-3.85	percent
Employment Impact	67	49	0	0	0	0	#persons
Employment Impact	0.06	0.05	0.00	0.00	0.00	0.00	percent

EXHIBIT 2 TO TAB A TO APPENDIX 2 TO ANNEX B TO ANCHORAGE EARTHQUAKE CDRP
HAZUS PREDICTIONS, 8.0 SUBDUCTION EVENT

HAZUS uses the following set of information to define the earthquake parameters used for the earthquake loss estimate provided in this report.

Scenario Name	Anchorage Matanuska Kenai 8.0 Subduction
Type of Earthquake	Subduction zone
Fault Name	Alaska-Aleutian Megathrust
Historical Epicenter ID #	NA
Probabilistic Return Period	NA
Longitude of Epicenter	150 W
Latitude of Epicenter	61 N
Earthquake Magnitude	8.0
Depth (Km)	20
Rupture Length (Km)	23
Rupture Orientation (degrees)	30
Attenuation Function	Youngs et. al. (1995)

Building Damage

HAZUS estimates that about 18,000 buildings will be at least moderately damaged. This is over 19% of the total number of buildings in the region. There are an estimated 1,374 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the HAZUS technical manual. Table 1 below summaries the expected damage by general occupancy for the buildings in the region. Table 2 summaries the expected damage by general building type.

Table 1: Expected Building Damage by Occupancy

	None	Slight	Moderate	Extensive	Complete
Residential	51,217	24,702	12,412	3,556	1,213
Commercial	656	288	510	262	128
Industrial	105	39	88	44	25
Agriculture	16	4	4	0	0
Religion	86	26	35	17	7
Government	4	0	0	0	0
Education	52	5	11	3	1
Total	52,136	25,064	13,060	3,882	1,374

Table 2: Expected Building Damage by Building Type (All Design Levels)

	None	Slight	Moderate	Extensive	Complete
Concrete	482	264	402	231	91
Mobile Homes	2,247	1,676	3,249	2,665	1,073
Precast Concrete	176	52	140	78	43
RM*	318	105	179	126	43
Steel	256	62	190	88	42
URM*	37	13	39	50	73
Wood	48,620	22,892	8,861	644	9
Total (95,515)	52,136	25,064	13,060	3,882	1,374

*Note: RM Reinforced Masonry; URM Unreinforced Masonry

Essential Facility Damage

Before the earthquake, the region had 983 hospital beds available for use. On the day of the earthquake, the model estimates that only 163 hospital beds (17%) are available for use by patients already in the hospital and those injured by the earthquake. After one week, 26% of the beds will be back in service. By 30 days, 50% will be operational.

NOTE: This figure will need to be re-evaluated. It appears the regional data supplied with the model included two hospital buildings that have been replaced within the last 5 years.

Table 3: Expected Damage to Essential Facilities

Classification	Total	Moderate or Greater Damage (>50%)	Complete Damage	>50% Functionality at day 1
Hospitals	13	7	0	4
Schools	264	193	0	65
EOCs	3	1	0	1
Police Stations	10	3	0	4
Fire Stations	17	17	0	8

Transportation and Utility Lifeline Damage

Table 4: Expected Damage to the Transportation Systems

System	Component	Locations/ Segments	At least Moderate Damage	At least Complete Damage	Functionality >50% After Day 1	Functionality >50% After Day 7
Highway	Roads	32	0	0	32	32
	Bridges	291	44	8	275	291
	Tunnels	0	0	0	0	0
Railways	Tracks	64	0	0	64	64
	Bridges	0	0	0	0	0
	Tunnels	0	0	0	0	0
	Facilities	4	0	0	4	4
Bus	Facilities	0	0	0	0	0
Ferry	Facilities	0	0	0	0	0
Port	Facilities	9	0	0	9	9
Airport	Facilities	120	16	1	120	120
	Runways	134	0	0	134	134

Note: Roadway segments, railroad tracks and light rail tracks are assumed to be damaged by ground failure only. If ground failure maps are not provided, damage estimates to these components will not be computed.

Tables 5-7 provide information on the damage to the utility lifeline systems. Table 5 provides damage to the utility system facilities. Table 6 provides estimates on the number of leaks and breaks by the pipelines of the utility systems. For electric power and potable water, HAZUS performs a simplified system performance analysis. Table 7 provides a summary of the system performance information.

Table 5 : Expected Utility System Facility Damage

System	Total #	W/at Least Moderate Damage	With Complete Damage	With Functionality > 50 After: Day 1	Day 7
Potable Water	0	0	0	0	0
Waste Water	0	0	0	0	0
Natural Gas	1	0	0	1	1
Oil Systems	12	3	0	7	12
Electrical Power	5	3	0	1	5
Communication	118	32	1	118	118
Total	137	39	7	127	136

Table 6 : Expected Utility System Pipeline Damage

System	Total Pipelines Length (kms)	Number of Leaks	Number of Breaks
Potable Water	0	0	0
Waste Water	0	0	0
Natural Gas	0	0	0
Oil	238	1	1
Total	238	1	1

Table 7: Expected Potable Water and Electric Power System Performance

	Total # of Households	Number of Households without service at: Day 1	Day 3	Day 7	Day 30	Day 90
Potable Water	107,867	17,106	12,926	5,643	0	0
Electric Power	107,867	64,315	37,387	14,437	768	111

Induced Earthquake Damage

Fire Following Earthquake

Fires often occur after an earthquake. Because of the number of fires and the lack of water to fight the fires, they can often burn out of control. HAZUS uses a Monte Carlo simulation model to estimate the number of ignitions and the amount of burnt area. For this scenario, the model estimates that there will be 4 ignitions that will burn about 10 sq. mi (0.0% of the region's total area.) The model also estimates that the fires will displace about 0 people and burn about 0 million dollars of building value.

Debris Generation

HAZUS estimates the amount of debris that will be generated by the earthquake. The model breaks the debris into two general categories: a) Brick/Wood and b) Reinforced Concrete/Steel. This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 1.38 million tons of debris will be generated. Of the total amount, Brick/Wood comprises 28% of the total, with the remainder being Reinforced Concrete/Steel. If the debris tonnage is converted to an estimated number of truckloads, it will require 55,000 truckloads (@25 tons/truck) to remove the debris generated by the earthquake.

Social Impact

Shelter Requirement

HAZUS estimates the number of households that are expected to be displaced from their homes due to the earthquake and the number of displaced people that will require accommodations in temporary public shelters. The model estimates 4,059 households to be displaced due to the earthquake. Of these, 2,596 people (out of a total population of 306,800) will seek temporary shelter in public shelters.

Casualties

HAZUS estimates the number of people that will be injured and killed by the earthquake. The casualties are broken down into four (4) severity levels that describe the extent of the injuries. The levels are described as follows;

- Severity Level 1: Injuries will require medical attention but hospitalization is not needed.
- Severity Level 2: Injuries will require hospitalization but are not considered life-threatening
- Severity Level 3: Injuries will require hospitalization and can become life threatening is not promptly treated.
- Severity Level 4: Victims are killed by the earthquake.

The casualty estimates are provided for three (3) times of day: 2:00 AM, 2:00 PM and 5:00 PM. These times represent the periods of the day that different sectors of the community are at their peak occupancy loads. The 2:00 AM estimate considers that the residential occupancy load is maximum, the 2:00 PM estimate considers that the educational, commercial and industrial sector loads are maximum and 5:00 PM represents peak commute time.

Table 8: Casualty Estimates

		Level 1	Level 2	Level 3	Level 4
2 AM	Residential	804	136	12	12
	Non-Residential	63	12	1	1
	Commute	1	1	2	0
	Total	868	149	15	13
2 PM	Residential	201	34	3	3
	Non-Residential	2,928	540	70	70
	Commute	4	5	8	2
	Total	3,132	578	81	74
5 PM	Residential	239	40	4	4
	Non-Residential	988	183	24	24
	Commute	11	14	24	5
	Total	1,238	237	51	33

Economic Loss

The total economic loss estimated for the earthquake is 2.242 billion dollars, which represents 6% of the total replacement value of the region’s buildings. The following three sections provide more detailed information about these losses.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the earthquake. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the earthquake.

The total building-related losses were 2.2423 billion dollars. 25% of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 53% of the total loss. Table 9 below provides a summary of the losses associated with the building damage.

Table 9: Building-Related Economic Loss Estimates
(Millions of dollars)

Area	Residential	Commercial	Industrial	Others	Total
Building Loss					
Structural	146.9	138.8	18.3	18.6	322.6
Non-Structural	679.8	289.5	31.7	45.8	1,046.8
Content	180.9	103.1	17.3	15.6	316.9
Inventory	N/A	2.1	2.1	0.1	4.2
Subtotal	1,007.6	533.5	69.4	80.1	1,690.6
Business Interruption Loss					
Wage	14.7	107.7	2.6	3.9	128.9
Income	6.2	99.2	1.9	1.2	108.6
Rental	76.1	50.4	1.2	2.4	130.1
Relocation	81.7	74.6	5.5	22.0	183.7
Subtotal	178.7	331.9	11.2	29.5	551.3
Total	1,186.3	865.3	80.6	109.6	2,241.8

Transportation and Utility Lifeline Losses

For the transportation and utility lifeline systems, HAZUS computes the direct repair cost for each component only. There are no losses computed by HAZUS for business interruption due to lifeline outages. Tables 10 & 11 provide a detailed breakdown in the expected lifeline losses.

HAZUS estimates the long-term economic impacts to the region for 15 years after the earthquake. The model quantifies this information in terms of income and employment changes within the region. Table 12 presents the results of the region for the given earthquake.

Table 10: Transportation System Economic Losses
(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Highway	Roads	10,181.3	0.0	0.0
	Bridges	403.0	14.5	3.6
	Tunnels	0.0	0.0	0.0
	Subtotal	10,584.3	14.5	0.1
Railways	Tracks	677.4	0.0	0.2
	Bridges	0.0	0.0	0.0
	Tunnels	0.0	0.0	0.0
	Facilities	12.0	1.1	9.3
	Subtotal	689.4	1.1	0.2
Bus	Facilities	0.0	0.0	0.0
Ferry	Facilities	0.0	0.0	0.0
Port	Facilities	13.5	0.0	0.0
Airport	Facilities	834.0	63.1	0.0
	Runways	3,752.0	0.0	0.0
	Subtotal	4,586.0	63.1	1.4
TOTAL		15,873.2	78.7	0.5

Table 11: Utility System Economic Losses
(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Potable Water	Pipelines	0.0	0.0	0.0
	Facilities	0.0	0.0	0.0
	Distribution Lines	0.0	N/A	N/A
	Subtotal	0.0	0.0	0.0
Waste Water	Pipelines	0.0	0.0	0.0
	Facilities	0.0	0.0	0.0
	Distribution Lines	0.0	N/A	N/A
	Subtotal	0.0	40.5	0.0
Natural Gas	Pipelines	0.0	0.0	0.0
	Facilities	0.0	0.1	0.0
	Distribution Lines	0.0	N/A	N/A
	Subtotal	0.0	0.8	0.0
Oil Systems	Pipelines	0.0	0.0	0.0
	Facilities	0.0	96.6	0.0
	Subtotal	0.0	96.6	0.0
Electrical Power	Facilities	0.0	66.8	0.0
	Distribution Lines	0.0	N/A	N/A
	Subtotal	0.0	66.8	0.0
Communication	Facilities	0.0	34.4	0.0
	Distribution Lines	0.0	N/A	N/A
	Subtotal	0.0	34.4	0.0
Total		0.0	197.9	0.0

Table 12. Indirect Economic Impact
(with outside aid)

Year(s)	1	2	3	4	5	6-15	Units
Income Impact	-13	-48	-64	-64	-64	-64	million$
% Income Impact	-0.23	-0.80	-1.08	-1.08	-1.08	-1.08	percent
Employment Impact	21	26	0	0	0	0	#persons
Employment Impact	0.02	0.02	0.00	0.00	0.00	0.00	percent

TAB B TO APPENDIX 2 TO ANNEX B TO ANCHORAGE EARTHQUAKE CDRP
STATE OF THE POPULATION

APPENDIX 3 TO ANNEX B TO ANCHORAGE EARTHQUAKE CDRP
RESIDUAL CONTRACTING CAPABILITY

TAB A TO APPENDIX 3 TO ANNEX B TO ANCHORAGE EARTHQUAKE CDRP
IDENTIFICATION OF CONTRACTORS IN AREA

TAB B TO APPENDIX 3 TO ANNEX B TO ANCHORAGE EARTHQUAKE CDRP
SUPPLIERS OF CRITICAL RESPONSE MATERIALS

TAB C TO APPENDIX 3 TO ANNEX B TO ANCHORAGE EARTHQUAKE CDRP
COMMERCIAL BUILDING SUPPLIERS

APPENDIX 4 TO ANNEX B TO ANCHORAGE EARTHQUAKE CDRP
RESIDUAL CEPOA CAPABILITIES

1. The Alaska District currently has approximately 500 employees, with approximately 60 employees living in Fairbanks/North Pole and Juneau. Based on normal workforce statistics, about 25 employees would be expected to commute from the Matanuska-Susitna Borough.

2. 7.5 shallow crustal: Based on general population figures, approximately 125 employees would have extensive or complete damage to their homes; an additional 150 would be dealing with moderate damage. Of the remaining 165 employees with slight or no damage to their homes, 25 would be from the Matanuska-Susitna Borough and would initially encounter access problems. In cold weather, even those with no home damage might still need to take emergency steps to drain pipes to prevent extensive plumbing damage in the event of a power outage. Based on HAZUS projections, during the work day there would be 4 persons killed or hospitalized and another 16 requiring medical attention but not hospitalization. Outside the work day, this would drop to 1 or 2 killed or hospitalized and 6 requiring medical attention but not hospitalization. Additional employees would be unavailable because of similar injuries to family members; however, this is approximately balanced by the employees who would be counted twice above (unavailable due to both injuries and residence damage). Based on these figures, the Alaska District would be a "victim district" with approximately one-third effective strength during the initial disaster period.

3. 8.0 subduction: Based on general population figures, approximately 20 employees would have complete or severe damage to their homes; 60 would have moderate damage, while 360 would have slight or no damage. Counting all levels of medical treatment, and both employees and their family members, the loss would be under 10 persons during non-duty events and under 20 for duty events. In this circumstance, Alaska District would be capable of conducting its regular missions but would require some TDY support to replace personnel unavailable due to injuries/residence damage, to replace employees who are diverted to Federal Response Plan missions, and to handle disaster-related workload from existing customers.

ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
OPERATIONS

1. **Concept of Operations**.

a. If a catastrophic event occurs, Federal response actions will be in accordance with the Federal Response Plan, including the supplements for Region X and Alaska. Most Federal response efforts will be managed by 12 multi-agency Emergency Support Functions. The lead agency for each ESF will manage operations of that ESF, including requesting assistance from its support agencies. (Normally, assistance within an ESF will be provided on a mission basis, rather than through the loan of personnel between agencies.) Assistance from other ESFs, such as Transportation, will be coordinated through the Disaster Field Office (or through the Regional Operations Center, in the early stages of the event). Some response activities will be accomplished under the in-house authorities of Federal agencies.

b. The Corps of Engineers is the DoD activity responsible for ESF #3, Engineering and Public Works. USACE is also the primary DoD planning activity for ESF #10, Hazardous Materials, and ESF #12, Energy; it may be called upon to provide support to any ESF. The Corps of Engineers also has some in-house authorities to respond to disasters, and will provide engineering and construction services for repair of some Federal facilities.

c. Pacific Ocean Division has overall responsibility for USACE activities in Alaska under the Federal Response Plan. POD will provide a "Division Forward" commander, who will manage the USACE response and recovery activities. For a catastrophic event, this will normally be the Division Commander or Deputy Division Engineer. (For a lesser event, the "Division Forward" role is normally delegated to the local District Commander.)

d. The majority of the response personnel will be provided from outside POD. Alaska District will be heavily impacted by the earthquake, and is expected to be a "victim district". The Division Office and the remaining districts will provide available support, but they have limited resources.

e. The initial phase of activation, IIa, will involve immediate deployment of a minimum staff to key operations centers, including USACE EOCs, the ROC, the Federal Initial Operating Facility/State Emergency Coordination Center, and ALCOM. At the same time, pre-identified resources from outside of Anchorage will be mobilized and will start the deployment process. Time to accomplish may vary from a few minutes (during duty hours at a USACE activity) to a few hours (assumed as 2 hours outside Anchorage and about 4 hours in Anchorage.

f. The second phase of activation, IIb, will involve deployment of the initial personnel to Anchorage, as well as supplementing the initial team at the ROC. Time to accomplish is estimated at 24 hours, but could be as long as 72 hours..

g. Phase III consists of the deployment of personnel to establish a fully operational ERRO and DFO. This includes deployment of PRTs, plus conducting the initial operations on certain missions. During this time, many employees of the District will need to take time off from work to attend to urgent personal needs. Northern Area Office will temporarily take responsibility for administering Southern Area Office contracts involving locations outside of the impacted area. Southern Area Office will concentrate on projects within the impacted area.

h. Phase IV is the primary period for accomplishment of FEMA missions. Activities are managed by the ERRO. The Alaska District reconstitutes, begins working on long-term recovery projects for its regular customers, and gradually takes over the disaster recovery missions.

i. Phase V is the transition back to normal conditions. The ERRO is closed out; the Alaska District Commander assumes the "Division Forward" role; the staffing of Alaska District returns to normal; missions are closed out financially; and recovery projects for regular customers are handled under normal procedures. Some portions of this phase may continue for several years.

j.

APPENDIX 1 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
PHASE I: PREPAREDNESS

1. Scope: Since an earthquake is a no-notice event, this phase consists of the special preparedness efforts that need to be completed before the earthquake.

2. ENGLink. Selected POH-EM (and POD-EM) personnel must have permissions to enter data for Alaska District. Following the earthquake, POH personnel would receive information from POA via telephone or radio and prepare the POA SITREP.

Responsibility: POA-EM

3. CEFMS. Selected POH (and possibly POD) personnel must have permissions to enter and certify financial transactions in the POA CEFMS database.

Responsibility: POA-RM

4. Urban Search and Rescue. USACE has both technical search specialists (to locate survivors) and structural specialists (to evaluate buildings for safety and to advise on necessary reinforcement to allow rescuers to work.) These persons require initial training and periodic refresher training, arranged through the USACE Readiness Support Center. Alaska District has a technical search team and a structural specialist, but capabilities are limited due to the lack of USACE-sponsored training. In particular, the technical search team has some designated members who have not been trained and others whose training is well past the time for refresher training.

Responsibility: POA-EM; USACE Readiness Support Center.

5. Public Affairs. The Alaska Media Guide is the primary reference used to locate recipients for press releases. Copies of this guide need to be available to PAO personnel who deploy to Alaska. Since most persons mobilizing to Alaska will travel through Sea-Tac Airport or McChord AFB in the Puget Sound area, a copy of the media guide needs to be available at Seattle District.

Responsibility: POD PAO

APPENDIX 2 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
PHASE IIa: ACTIVATION

1. Scope:

a. This subphase consists of assembling a minimum operating staff at each initial operating location, using local personnel. Because an earthquake does not allow the yunormal pre-disaster deployments, local personnel will need to fill in until USACE emergency teams can be mobilized.

b. Implementation of this phase is automatic provided that **both** of the following conditions exist.

(1) There is a reliable report of a major earthquake in the Anchorage area.

(2) Telephone communications to Anchorage are cut off.

c. Phase IIa activities will include:
(1) Activation of command centers
(2) Situation Assessment
(3) POA Structural Safety Assessment of District Headquarters and Federal Interim Operating Facility/SECC.
(4) POA support of Urban Search and Rescue
(5) POA technical assistance
(6) Activation of CONUS and POD support for Urban Search and Rescue
(7) Activation of CONUS and POD personnel to support detailed structural safety assessments of operational facilities and shelters
(8) Activation of logistics support
(9) Activation of an Emergency Power PRT in CONUS

d. The priorities in the impacted area will be:

(1) Activation of emergency operations.

(2) Light and medium Urban Search and Rescue.

(3) Emergency medical assistance.

(4) Ensuring that all persons in the area have a heated, structurally sound shelter. (Requires structural evaluation, emergency heat/power).

(5) Emergency access (debris clearance, structural evaluation of bridges, etc.).

e. This phase does not include any deployment of personnel outside of a reasonable driving range of their home duty stations.

f. Under normal circumstances, the initial activation outside of Anchorage should be complete by two hours after the event. (This excludes extreme traffic/weather situations.) In Anchorage, minimal staffing should be available about 4 hours after the event.

2. POD:

a. At Division Headquarters: Emergency Management; EOC staff; Crisis Management Team; HF-SSB radio operators; PAO.

b. At PACOM: Liaison Officer

3. POA:

a. At District Headquarters: Emergency Management; EOC staff; Crisis Management Team; Crisis Action Team; Urban Search and Rescue personnel; ATC-20 detailed inspectors, group 2.

b. At State Emergency Coordination Center/Interim Federal Operating Facility: ESF #3 initial staff; ATC-20 detailed inspectors, group 1.

c. At ALCOM Headquarters: Liaison Officer

d. In Fairbanks: HF-SSB radio operators at both Chena Flood Control Project and Northern Area Office.

4. POH:

a. At District EOC, Bldg 525 Fort Shafter: Emergency Management; EOC staff.

b. At District Headquarters, Bldg 230 Fort Shafter: (TBD)

5. NWD

a. NWS, at FEMA X ROC: 1 EM representative; 1 Logistics representative

b. NWS, initially at District: PAO (possible redeployment to Joint Information Center at Regional Operations Center)

c. NWP, at U.S. Government Moorings, Mile 6 Willamette River, Portland, OR: Radio operators.

d. NWS, NWW:

6. 249th Engr Bn, Fort Lewis Detachment, at FEMA X ROC: 1 representative

7. SPD districts: if radio systems are available, activate radio operators.

8. HQUSACE: immediately direct the following individuals/teams to mobilize, pending a confirming directive to actually travel:

a. ESF #3 management cell

b. Structural safety assessment/management team and detailed ATC-20 inspectors.

c. Emergency Power PRT—CONUS (POH team will not be available because members will be needed for other response functions)

d. Logistics PRT (Missouri River Region portion of NWD team, or a full team from another division)

e. 249th Engr Bn, alert Fort Lewis and Fort Shafter Detachments

8. Because of the urgency, funding procedures will be handled concurrently with the actual operations.

a. Code 200 funding will be requested from HQUSACE for activation of USACE EOCs.

b. Pre-declaration funds should be requested at the ROC for deployment of PRTs, activation of ESF #3, etc. (However, deployment could be authorized as an exercise, to prevent delay while awaiting the FEMA authorization.) POH/POD will make this request for POA.

c. POA will also conduct operations under Military Support to Civil Authorities (MSCA) authorization.

d. POA may provide assistance for military facilities. This would require military funding (probably Operations and Maintenance, Army/Air Force as appropriate).

APPENDIX 3 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
PHASE IIb: INITIAL DEPLOYMENT

1. Scope:

a. This subphase involves deployment of the initial augmentees from Hawaii and CONUS to Alaska, plus deployment of trained ESF #3 personnel to the ROC.

b. Phase IIb activities will include:
(1) Additional activation of command centers
(2) Situation Assessment
(3) POA Structural Safety Assessment of operational facilities and shelters.
(4) POA support of Urban Search and Rescue
(5) POA technical assistance
(6) Activation and deployment of CONUS and POD support for Urban Search and Rescue
(7) Activation and deployment of CONUS and POD personnel to support detailed structural safety assessments of operational facilities and shelters
(8) Activation of logistics support
(9) Activation and deployment of an Emergency Power PRT from CONUS
(10) Begin to identify resources from existing construction work for diversion to emergency needs.

c. The priorities in the impacted area will be:

(1) Light and medium Urban Search and Rescue

(2) Medical treatment/evacuation

(3) Ensuring that all persons in the area have a heated, structurally sound shelter. (Requires structural evaluation, emergency heat/power; water/sewer; food.)

(4) Emergency access (debris clearance, structural evaluation of bridges, etc.)

d. Because of the magnitude of the event, a Federal declaration will probably be issued during this time period. This may be an emergency declaration, rather than a major disaster declaration, to allow agencies to provide urgently-needed assistance before a full situation assessment has been completed.

2. POD:

a. Division Headquarters, prepare for second shift: Emergency Management; EOC staff; Crisis Management Team; HF-SSB radio operators.

b. Mobilize to Alaska: 1 ESF #3 representative; others TBD

3. POA:

a. District Headquarters, prepare for second shift: Emergency Management; EOC staff; Crisis Management Team; Crisis Action Team, selected technical assistance personnel

b. State Emergency Coordination Center/Interim Federal Operating Facility, prepare for second shift: ESF #3 initial staff.

c. ALCOM Headquarters, prepare for second shift: Liaison Officer

d. Field operations: Urban Search and Rescue personnel; ATC-20 detailed inspectors.

4. POH:

a. District EOC, Bldg 525 Fort Shafter, prepare for second shift: Emergency Management; EOC staff.

b. District Headquarters, Bldg 230 Fort Shafter, prepare for second shift:

c. To Alaska: (TBD-identify initial increment for setting up ERRO)

d. LPRT members: prepare CTOC for potential shipment to Alaska.

5. NWD

a. LPRT: provide logistical support to initial deployment; coordinate with UOC as to whether to go to full activation or to prepare a transition to another CONUS LPRT.

b. NWP: U.S. Government Moorings, Mile 6 Willamette River, Portland, OR: Radio operators; personnel for deployment of RRV.

c.

6. UOC must activate and deploy:

a. Confirm NWD LPRT activation, including authorizing the travel of members from the Missouri River Region; or activate another CONUS LPRT to manage operations.

b. Deploy full emergency electrical power team.

c. Deploy management teams for emergency access and structural safety assessment.

d. Deploy trained ESF #3 management team to ROC.

e. Deploy trained ESF #3 management team to Alaska.

f. Deploy additional personnel from 249th Engr Bn to ROC (second shift) and to Alaska. Note: Coordinate with POD as to possible use of PACOM transport from Hawaii to Anchorage.

g. Alert emergency water and emergency housing PRTs.

h. Alert functional teams from CONUS for Resource Management, Information Management,

7. Because of the urgency, funding will be handled through verbal authorizations.

a. Code 200 funding will be requested from HQUSACE for activation of USACE EOCs.

b. FEMA funding may come from any (or all) of the following sources.

(1) Pre-declaration funds should be requested immediately at the ROC for deployment of PRTs, activation of ESF #3, etc. Pre-declaration funds allow deployment of personnel and supplies, but do not allow for the delivery of assistance to the impacted population. Such funding does allow for the stockpiling of generators and other supplies at Federal facilities (including leased property) within the disaster area.

(2) An emergency declaration may be issued as an interim measure, while the request for a major disaster declaration is still being considered. It allows FEMA to provide direct assistance, or to provide reimbursement for, debris removal (category A) and emergency protective measures (category B).

(3) A major disaster declaration allows FEMA to provide recovery assistance. In addition to the debris removal and emergency protective measures categories, a major disaster declaration allows direct assistance and/or funding for recovery activities, for roads (Category C), Water Control Facilities (Category D), Buildings and Equipment (Category E), Utilities (Category F), and parks, recreation, and other(Category G)

(4) Only one type of FEMA funding will be available at any one time, for operations involving Alaska. As soon as a greater level of authorization becomes available, all funding activities under the earlier authorization will be cut off and new funding actions (e.g., travel orders) will be issued. Exceptions are:

(a) Since the planning earthquakes would not produce a tsunami, there would not be any overlap of the three FEMA funding types. (For earthquake/tsunami events such as the 1964 earthquake, multiple funding types might be used within the same region, but always for separate states. For example, Alaska might have a major disaster for an earthquake, Washington an emergency for a tsunami, while Oregon was still in the pre-declaration stage for the tsunami.)

(b) The return portion of round-trip airplane tickets may be charged to the same funding as used for deployment, when that will avoid the need for a cost transfer. (This applies ONLY to tickets purchased while the funding was available.)

c. POA will also conduct operations under Military Support to Civil Authorities (MSCA) authorization.

d. POA may also be supporting military installations under appropriate O&M funding.

APPENDIX 4 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
PHASE III: DEPLOYMENT

1. Scope:

a. Phase III consists of the deployment of personnel to establish a fully operational ERRO and DFO. This includes deployment of PRTs, plus conducting the initial operations on certain missions. During this time, many employees of the District will need to take time off from work to attend to urgent personal needs.

b. Northern Area Office will temporarily take responsibility for administering Southern Area Office contracts involving locations outside of the impacted area. If the District Headquarters is unable to function, Northern Area Office will serve as the District Alternate Headquarters.

c. Southern Area Office will concentrate on the existing projects within the impacted area.

d. The Division Forward element will be responsible for managing the disaster operations. The ESF #3 cell, at the DFO, will receive missions and coordinate activities with other ESFs and with FEMA. The ERRO will manage the FRP missions.

e. Phase III activities will include:

(1) Activation of full DFO and ERRO

(2) Situation Assessment

(3) Structural Safety Assessment of operational facilities and shelters; begin planning for general assessment mission.

(4) Support of Urban Search and Rescue

(5) Technical assistance

(6) Major airlift of supplies and equipment from CONUS and Hawaii, plus start of sealift operations for longer-term emergency work. Begin planning sealift of supplies and equipment for recovery effort.

(7) Emergency Power PRT oversees installation of generators by contractor

(8) Most ongoing contracts in the impacted area will be suspended to allow use of personnel and equipment for emergency work. Even critical projects will need to be evaluated for potential damage to the work already completed.

(9) Coordinate with existing customers on status of existing workload as well as requirements for new/changed work resulting from earthquake.

(10) Conduct debris clearance and begin effort for debris removal.

(11) Evaluate water and sewer situation. Upon receipt of request from FEMA, begin delivery of drinking water.

(12) Potential mission for emergency access.

(13) Potential start of planning for temporary housing.

f. Estimated completion is 7 to 14 days after the earthquake.

APPENDIX 5 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
PHASE IV: RESPONSE AND RECOVERY OPERATIONS

a.. Phase IV is the primary period for accomplishment of FEMA missions. Activities are managed by the ERRO. The Alaska District reconstitutes, begins working on long-term recovery projects for its regular customers, and gradually takes over the disaster recovery missions.

(1) Mission assignment, funding, and inter-agency coordination will be accomplished at the DFO.

(2) Mission management will be accomplished at the ERRO.

(3) ESF #10 coordination is an Alaska District mission, rather than a division mission. RRT 17, unlike any other Regional Response Team, covers only a single state-level jurisdiction and the Alaska District (which covers the identical area) is the designated member.

b. This phase is anticipated to last between 30 and 90 days.

APPENDIX 6 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
PHASE V: TRANSITION AND CLOSEOUT

1. Scope:

a. Phase V occurs when the Alaska District takes over operations from the ERRO.

(1) Some of the direct assistance and/or technical assistance missions may still be active. In particular, the debris removal mission will require considerable coordination with the Municipality of Anchorage. Final disposal may take two years or longer; the USACE mission will leave debris stockpiled in the sorting/temporary storage areas.

(2) A major concern during Phase V will be administrative and financial closeout of FRP missions.

(3) Recovery projects for regular and new District customers (e.g., military bases) may continue for several years.

(4) The District will need to process contract change orders and handle other impacts to its normal workload.

APPENDIX 7 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
ALASKA DISTRICT CONTINUITY OF OPERATIONS (COOP)

1. **SCOPE:** This appendix covers the steps necessary for maintaining the normal Alaska District functions after the earthquake.

2. **BACKGROUND.** The Northern Area Office at Fort Wainwright (Fairbanks), Alaska, because of its workload and its physical separation from the main District, has significant capabilities—including experienced managers, some engineering capability, a computer network segment that can operate independently, plus utilities and logistical support systems that can function independly from Anchorage. In addition, Fort Wainwright and Fairbanks have the capability to support an expansion of the office.

3. **LIMITATIONS.**

a. Extreme cold weather during certain periods in winter (minus 40 degrees and colder) will interfere with routine operations; the impact is greater with temporary employees who may not be prepared for the weather.

b. Operating costs are greater in the Fairbanks area, and costs would increase when the supply routes through Anchorage were inoperative.

c. Data bandwidth may be limited due to the loss of links through Anchorage.

4. **NORTHERN AREA OFFICE (NAO) PROCEDURES.**

a. Phase IIa, activation:

(1) Northern Area Office and Chena Project Office must each activate the HF-SSB radio in case of a major earthquake in the Anchorage area which causes an outage in long distance telephone service. (Priority: Chena Project Office)

(2) Contact the Alaska Fire Service office, and exchange available information from Anchorage.

(3) Contact POD EOC and advise them of the local conditions.

b. Phase IIb, initial deployment:

(1) Based on initial reports, identify Southern Area Office (SAO) construction projects that are out of the impacted area.

(2) Contact Construction-Operations Division at Alaska District, and advise them that NAO is prepared to administer contracts while SAO is reconstituting.

(3) If no contact has been made with District Executive Office, Construction-Operations Division, or Southern Area Office within 24 hours of the event, contact POD EOC and request that NAO be activated as the Alternate Headquarters for POA.

(4) Contact all prime contractors on SAO projects outside the disaster area, both at the primary offices and the on-site project offices, and all USACE Quality Assurance personnel working at the proejct sites. Advise them that NAO will be temporarily handling the administration of the contracts.

(5) Check status of Quality Assurance personnel on transferred projects. Some personnel may need to return to Anchorage because of personal impacts. Others may have been back in Anchorage at the time of the earthquake.

(6) Identify any NAO employees who need to return to Anchorage because of personal impacts, and any who were in Anchorage at the time of the earthquake..

(7) Request personnel through POD to replace employees who are not available due to the reasons in (5) and (6) above.

b. Phase IIb, Initial Deployment, and Phase III, Deployment.

(1) Check with contractors from NAO projects, and transferred SAO projects, to determine their capability to continue work. Possible impacts: supply problems due to loss of Southcentral Alaska ports; direct impacts to Anchorage offices and other facilities; loss of personnel due to personal impacts or a need for them to assist in urgent response activities; etc.

(2) Establish three-way coordination, with District's Project Managers and with customers, on potential impacts to projects under construction. Prioritize projects so that, if necessary, resources can be given to the projects

c. Phase IV, Response Operations.

(1) Establish procedures for handling progress pay estimates for SAO projects.

d. Phase V, Transition and Closeout. (Note: may be earlier than Phase V for the disaster response activities)

(1) Coordinate with SAO to verify their capability to resume administration of contracts.

5. **SOUTHERN AREA OFFICE**

a. Phases IIa and IIb:

(1) Conduct a situation assessment. Determine current capabilities—both personnel and physical plant. Determine status of projects—amount of damage; is it possible to continue from current state, or does the contractor need additional work or materials in order to continue?

(2) Identify contractor equipment and personnel that could be used to assist the military bases and the civilian population in meeting emergency needs.

(3) Document any use of project equipment and/or materials for other needs, so that all costs go to the correct funding.

(4) Provide

b. Phase III:

(1) Provide NAO with information on pending claims, known problems, etc. on transferred projects.

c. Phase IV:

(1) Coordinate with CEPOA-PM to identify additional workload for existing customers (emergency repair/replacement).

(2) Coordinate with ERRO to identify any FEMA direct assistance projects that will still be active at ERRO closeout.

(3) As capability is restored, coordinate with NAO for return of projects.

(4) Individual projects that are close to completion may remain with NAO.

6. **ALTERNATE HEADQUARTERS.** If the District facilities in the Anchorage area are not usable, the NAO will serve as the temporary headquarters.

a. Minimum management staffs for most district elements will be set up in Fairbanks. While some existing personnel will be available, several positions will probably need to be filled by TDY assistance.

b. Generally, personnel from POD and POH will <u>not</u> be available for the alternate headquarters, as they will be needed for ESF #3 and ERRO functions. The exception would be the smaller elements, such as Security and Equal Employment Opportunity, where a staff member from POD or POH could be dual slotted. (This would be similar to the initial situation after the transition from the Operating Division organization.)

c. NAO will need to handle initial coordination with Fort Wainwright for additional space, until the POA Real Estate Office was reestablished.

d. NAO might be required to manage all construction activities, including projects in the Anchorage area, until the SAO is able to resume operations.

e. Currently, there is office space available in the Fairbanks area to support the establishment of the temporary headquarters. The main concerns would be if USARAK had to relocate much of its own operations from Fort Richardson to Fort Wainwright, and/or if military activities increase at Fort Wainwright because of additional missions (the new, fast response army organizations and/or National Missile Defense).

APPENDIX 8 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
TECHNICAL ASSISTANCE MISSION

REFERENCES

a. **Maps and Charts**. See Annex B.

b. **Documents**
(1) See Basic Plan

1. **SITUATION**

a. **General**.

b. **Threat**.

c. **Response Organizations**

d. **Assumptions**

2. **MISSION**.

a. The FEMA post-declaration mission simply says "Provide technical assistance to State and/or local jurisdictions to aid them in accomplishing priority missions as directed by FEMA."

b. Technical Assistance may also be provided by the Alaska District pre-declartation, under Military Support to Civil Authorities.

c. A considerable amount of Technical Assistance will also be required for military customers, to evaluate earthquake impacts to their facilities. This will be handled under appropriate Military Construction/Military Operations and Maintenance funding.

d. This is a flexible mission. It can involve any area of USACE expertise, and there can be multiple funding authorizations.

3. **EXECUTION**

a. **Commander's Intent.**

b. **Concept of Operations.**

c. **Tasks.**

4. **ADMINISTRATION AND LOGISTICS.**

a. Concept of Support.
b. Logistics.
c. Personnel.
d. Public Affairs.

5. **COMMAND AND SIGNAL.**

a. Command Relationships.

b. Command Posts.

c. Succession to Command.

d. Signal.

(6) See Annex K for detailed communications information.

Information to be merged:

1. **SCOPE.**

2. **OPERATIONS.**

a. In phases IIa and IIb, Technical Assistance will be coordinated through the POA District EOC.

b. During phase III, management of the FEMA Technical Assistance mission will be transferred to the ERRO. The management will continue through phase IV. In certain special cases, a mission might revert back to POA under phase V; most such missions should be closed out by the time the ERRO is demobilized.

c. FEMA will issue specific taskings under the overall Technical Assistance mission assignment. Field requests by State and local representatives will need to be forwarded to FEMA for authorization if they do not fall within the taskings. (Local requests need to be forwarded through the State.)

d. Technical Assistance for regular Alaska District customers will continue to be managed by POA.

e. A key concern is to identify those technical assistance tasks that require cold weather engineering expertise, to insure that they are given to the appropriate persons.

APPENDIX 9 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
URBAN SEARCH AND RESCUE MISSION

REFERENCES

a. **Maps and Charts**. See Annex B.

b. **Documents**

(1) USACE US&R Mission Guide.
(2) FEMA US&R Field Operations Guide (FEMA FOG).
(3) USACE Structures Specialist Training Manual.
(4) USACE Technical Search Specialist Training Manual.
(5) USACE US&R Structures Specialist Field Operations Guide (SS FOG).
(6) The Federal Response Plan (FRP) for Public Law 93-288, as Amended, dated April 1999.
(7) USACE ESF #3 Field Guide
(8) USACE ESF #3 Field Guide Supplement – All Hazards Contingency Plan

1. **SITUATION**

a. **General**. There are four levels of Urban Search and Rescue:

(1) Self/Spontaneous. This involves victims digging themselves out and/or being rescued by untrained personnel who are already in the immediate area. This level accounts for about 50 percent of all rescues.

(2) Light. This involves removal of debris by hand and the use of hand tools (e.g., levers) to allow extraction of victims. Normally it involves one trained person directing a work crew that has not been trained in advance. DoD (primarily US Army Alaska-USARAK) will support local efforts; it has provided training for team leaders, who will direct the actual efforts by military personnel. The Anchorage School District and the Department of the Interior have conducted training for light US&R, to support their own facilities. This level accounts for about 30 percent of all rescues.

(3) Medium. This involves the use of standard fire department rescue equipment, such as the “jaws of life”, shoring techniques, and some structural hazard mitagitation. This level accounts for about 15 percent of all rescues.

(4) Heavy. This involves the use of heavy equipment to remove debris. FEMA sponsors 28 Task Forces nationwide; these Task Forces are mobilized to the disaster site. The closest team is in the Puget Sound area; Alaska has special arrangements to expedite the deployment of this team. This level of rescue involves the heavily entombed victins and accounts for about 5 percent of all rescues. That percentage is expected to be lower for Alaska, particularly in winter because hypothermia will greatly reduce the anticipated survival time.

b. **Threat**. For this scenario the HAZUS model predicts that there will be approximately 9612 completely collapsed structures in Anchorage for a 7.5 shallow crust earthquake (1106 concrete/masonry, 247 steel frame, 8259 wood frame and mobile homes). The 8.0 deep subduction zone earthquake would produce 1374 collapsed structures throughout the three Cook Inlet borough/unified government areas (250 concrete/masonry, 42 steel frame, 1082 wood frame and mobile homes).

c. **Response Organizations.**

(1) Light Urban Search and Rescue may be conducted by teams from within the specific facility (such as a large office building), or teams dispatched to assist. The US Army Alaska (USARAK) is the primary Federal provider of support.

(2) Medium Urban Search and Rescue will be coordinated by the Municipality of Anchorage (MOA) Fire Department (by the military installation for on-base locations).

(3) Heavy Urban Search and Rescue will be accomplished by the FEMA National US&R Task Force(s). The state will be required to request the Task Force(s) through FEMA. The Task Forces will then be provided to the Municipality of Anchorage for emergency response.

d. **Assumptions.**

(1) See CDRP Basic Plan.

(2) State and local US&R organizations will be overwhelmed and will not be able to respond to all requirements.

(3) Specific mission priorities will be decided by the MOA in conjunction with the state and Federal US&R Team Leaders.

(4) Security will be provided by the MOA Police Department, or in some cases by the Alaska National Guard (by the military installation for on-base locations).

2. **MISSION**. Provide support to local civil and military Urban Search and Rescue operations. Provide Light Urban Search and Rescue for USACE Alaska District facilities.

3. **EXECUTION**

a. **Commander's Intent.** POD will provide support to the Urban Search and Rescue mission as part of this CDRP. This will be accomplished through (1) immediate use of available POA assets and (2) rapid deployment of POD, NWS, and USACE-wide resources in support of the Federal Response Plan/ESF #9, the Municipality of Anchorage, POA, the regular Alaska District customers, and the military. The mission will be completed when the MOA determines that it is unlikely that there are additional trapped, living victims within the impacted area.

b. **Concept of Operations.**

(1) The MOA will request US&R assistance from the State Emergency Coordination Center. The state will immediately request DoD assistance under the AR 500-60 Immediate Response authority, and will also request assistance from FEMA under the FRP/ESF #9. The state could also request medium US&R assistance from other states, under interstate mutual support authority.

(2) Under the Immediate Response authority, Fort Richardson would supply light US&R teams, consisting of trained leaders and untrained team members; POA would provide available ATC-20 trained personnel to assist by evaluating building safety.

(3) Under the FRP, FEMA would provide one or more of the National teams; if available, the Puget Sound team would probably be the first to arrive. USACE would provide technical search specialists and structural engineering support to assist the teams, and/or to assist MOA medium US&R operations. USACE could also provide ATC-20 trained personnel to assist light and medium US&R.

(4) FEMA has the authority to transport the US&R teams and other assets to Federal facilities in the disaster area, in advance of a Federal emergency or major disaster declaration.

(5) The mission-specific priorities will be decided by the MOA and the Federal US&R team leaders. (If areas outside the MOA are affected, the State will determine priorities among local governments.)

c. Tasks.

(1) S&R Structures Specialist Mission – Technical assistance to the State of Alaska or through FEMA under the Federal Response Plan.

(2) US&R Technical Search Mission – Technical assistance to the State of Alaska or through FEMA under the Federal Response Plan.

(3) ATC-20 technical assistance to assess structural safety specifically with regard to temporary shelters (e.g. schools, church auditoriums, civic centers), mass care facilities, and other key operational facilities. These inspections could be conducted by the US&R Structures Specialist cadre members and/or by engineers that have a strong structural background. (These inspections would be conducted under a Structural Safety Assessment mission assignment, not US&R.)

4. **ADMINISTRATION AND LOGISTICS.**

a. **Concept of Support.** See CDRP Basic Plan. Initial on-hand resources will quickly be overwhelmed; it is anticipated POD will request assistance from HQUSACE UOC for immediate US&R assistance.

b. **Logistics.** See CDRP Basic Plan. US&R personnel will need logistical support with car rentals and lodging. They will also require 2-way radios with frequencies set to their supported element. Also, see the equipment list in the US&R Mission Guide for the equipment that the US&R cadre will bring with them that may need to be re-supplied.

c. **Personnel.** See CDRP Basic Plan. The USACE US&R cadre consists of:

(1) US&R Structures Specialists
(2) US&R Technical Search Specialists
(3) US&R Subject Matter Experts (Team Leaders)
(4) US&R FEMA IST engineering element support personnel

d. **Public Affairs.** See CDRP Basic Plan. POA Public Affairs may be asked to help facilitate dissemination of information regarding the US&R effort. All contacts with the media will be through FEMA and/or the Joint Information Center (JIC). Personal interviews should reflect USACE support to the locals and FEMA.

5. COMMAND AND SIGNAL.

a. **Command Relationships.**

(1) The Municipality of Anchorage Fire Department will be in charge of all light, medium, and heavy urban search and rescue activities within the municipality, except for activities on military installations and for light US&R performed by the individuals, owners and tenants of a facility.

(2) USACE and other DoD personnel will support MOA operations, but must maintain reporting requirements for their respective DoD chain of command.

b. **Command Posts.**

(1) The Municipality of Anchorage will coordinate activities from its Emergency Operations Center (EOC), located at 1309 E. Street. Individual command sites will be established for heavy and medium urban search and rescue activities.
(2) POA will coordinate emergency operations from its EOC located at 2204 3rd Street, Elmendorf, AFB.
(3) In the event of FEMA US&R Task Force activations, FEMA will establish an Incident Support Team (IST) to coordinate with individual command sites and to provide logistical support to the FEMA US&R Task Forces during emergency operations. The IST also conducts needs assessments and provides technical advice and assistance to the state and local government emergency managers.

c. **Succession to Command.** See CDRP Basic Plan.

d. **Signal.** Reference CDRP Basic Plan and see Annex K for detailed communications information. It is anticipated that US&R personnel will require cell

phones and 2-way radios to ensure communications with their supported element and EFOs/ERRO.

1. MISSION DEFINITION.

The scope of the USACE Urban Search and Rescue (US&R) Mission is to provide efficient and effective physical and technical support to the Federal Emergency Management Agency (FEMA) mission response effort under Emergency Support Function (ESF) #9 as a pre-designated Department of Defense (DoD) agency. This includes developing, training, and equipping USACE personnel to operate as support to the FEMA US&R Task Forces. The scope of work includes two distinctive and separate cadres that are cross-trained to a limited extent.

The Structures Specialist cadre serves in support of FEMA US&R Task Forces as the component that analyzes collapsed buildings and designs shoring systems to stabilize structures for rescuers to gain safe entry and egress.

The Technical Search Specialist cadre serves in support of FEMA US&R Task Forces as a component of the Technical Search Operations. The Technical Search Specialist evaluates, plans and executes search pattern(s) for detecting survivors trapped within a collapsed or partially collapsed structure. This team utilizes the System To Locate Survivors (STOLS) and any other methodology to maximize the effectiveness of their search pattern.

The Incident Support Team (IST) will decide specific mission priorities in conjunction with the State and Federal US&R team leaders.

2. MISSION.

a. USACE has established a cadre of Structures Specialist and a cadre of Technical Search Specialist. These cadres are trained to support the FEMA Task Forces and others involved in emergency operations.

b. Specific mission priorities will be decided by the State; however, based on input from State Emergency Management personnel and the status of the Federal US&R mission, the following priorities are listed for planning purposes:

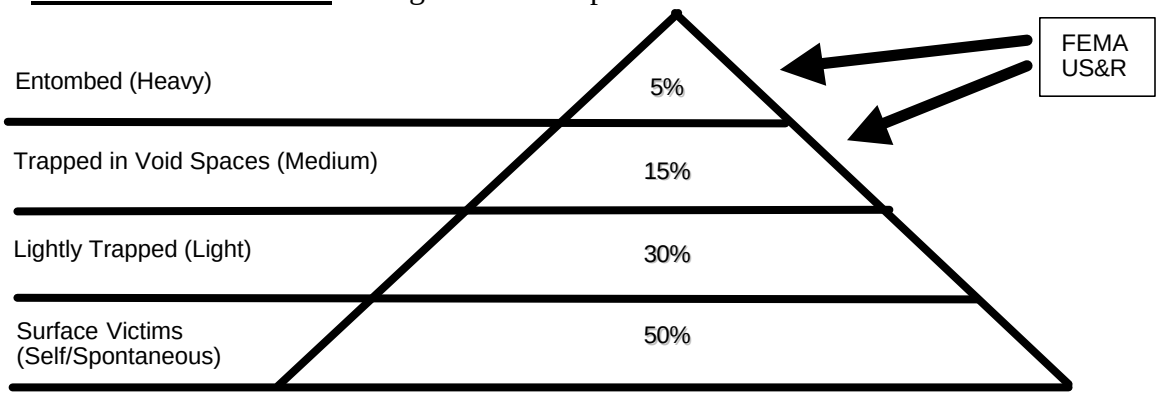
Priority 1: Support to FEMA Task Forces for either backfilling positions or augmentation. Support the IST engineering element.

Priority 2: Technical assistance to local jurisdictions with rescue efforts.

Priority 3: Technical assistance to military personnel who will continue to provide basic and light US&R support.

Priority 4: Other agency support (e.g., FBI support).

3. LEVELS OF US&R. The figure below depicts the levels of US&R:



4. SPECIAL CONSIDERATIONS.

a. **Climate.** US&R planning assumes a 72-hour period before there is a major drop in survival rates. During winter in Alaska, hypothermia would reduce that period to 12 hours or less, thus all US&R assests must be initiated without delay.

b. **Transportation.** Anchorage is 3 ½ hours by air from the closest FEMA US&R Task Force located in Washington State. One of the two major airports in Anchorage must be operational to allow their prompt arrival.

c. **Lighting.** In late December, Anchorage has about 8 hours of usable light. US&R personnel will have to bring in lighting equipment and/or use locally available equipment. This makes operations slower and more dangerous.

d. **Weather.** Personnel deployed to Alaska must be fully informed of current weather conditions and deploy with the appropriate clothing and equipment.

e. **Post Earthquake.** Following an earthquake, aftershocks, secondary events, and/or other hazards (such as fires, tsunami, landslides, flooding, and hazardous materials releases) may compound problems and threaten both disaster victims and rescue personnel.

f. **CIS Debriefings.** In order to keep cadre members psychologically healthy, on-scene Critical Incident Stress (CIS) debriefings should be provided by trained professionals.

g. **HAZMAT.** The US&R personnel should be aware of the dangers involved with US&R missions and working around and in damaged structures. All USACE US&R cadre members have received Hazardous Materials First Responders Awareness training and all FEMA Task Forces have a Hazardous Materials expert to support the work being accomplished.

5. US&R OPERATIONS.

a. The Incident Commander is in charge of all US&R assests to include the local EMS response, the FEMA Task Forces and any associated resources to include USACE Structures and Technical Search Specialists.

b. The immediate local concern will be light and medium US&R.

c. The Municipality of Anchorage could ask for ATC-20 trained employees to assist in the light US&R with building hazard identification and safety assessment.

d. Structures Specialists will be needed immediately for the medium US&R. POA has limited capability in this area. Support from the Corps' Seattle and Portland Districts might be available in time to save lives in winter; immediate support from throughout the Western U.S. would be deployed if necessary in warmer weather.

e. The effectiveness of heavy US&R will depend on both weather conditions and the speed of deployment. In the coldest weather, many of the trapped victims will die before any of the FEMA Task Forces can arrive. In somewhat warmer conditions, survival times are longer but the FEMA Task Forces will need to work very rapidly. During the summer, normal survival times are expected.

f. The State of Alaska has made special arrangements with the State of Washington US&R Task Force. That Task Force would begin to mobilize immediately in case of a severe earthquake in Anchorage. FEMA will still need to arrange transportation, but the total deployment time would be shortened. The team's projected training includes a test deployment to Anchorage (Elmendorf AFB).

g. Available POA Technical Search Specialists will be used immediately after the event to identify locations where the FEMA Task Forces will immediately begin operations. In extreme cold weather, the Technical Search Specialists may be used to support medium US&R with the detection and location of trapped victims.

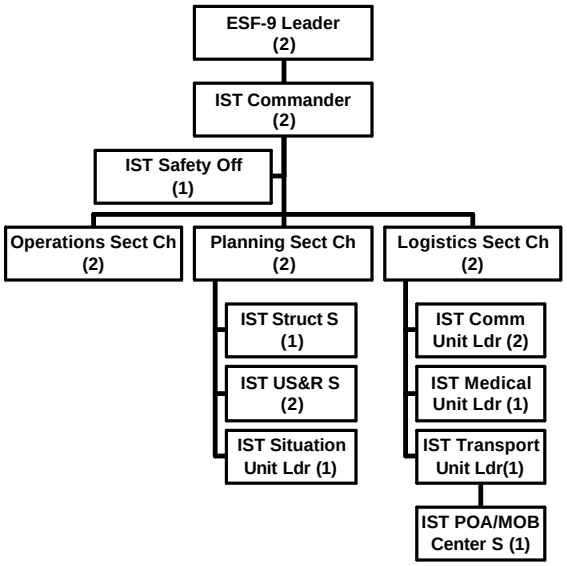
FEMA ESF #9 Urban Search and Rescue
(Description of Duties and Operational Structure)

The ESF #9 Urban Search and Rescue response conducts search and rescue operations in locating, extricating and initial medical stabilization to victims of structural collapse.

1. **SCOPE.**

FEMA is the lead agency for ESF #9.

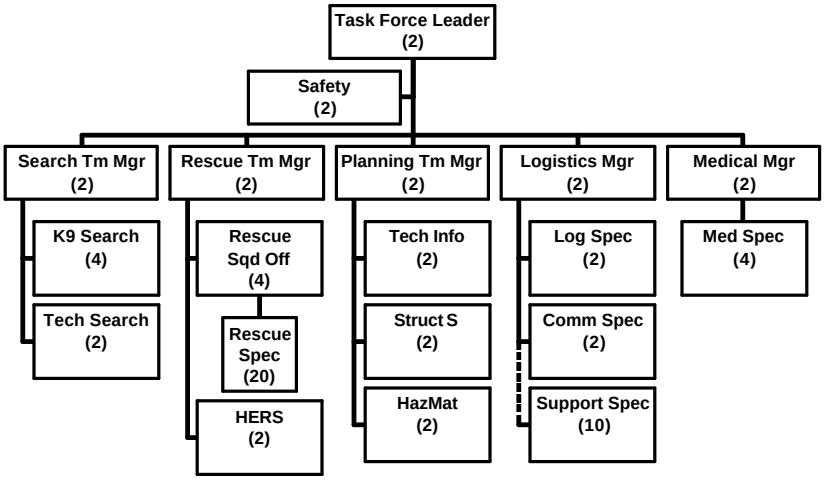
Once deployed to a disaster site, the Incident Commander (IC) interacts with the ESF #9 Leader and the Incident Support Team (IST) Commander. The IST Commander is responsible for the IST resources, which includes the FEMA Task Forces, technical specialists (such as contractors and consultants), and the USACE US&R Cadre. The IST consists of 20 individuals for 24-hour operations. The diagram below shows the ESF #9 IST resources.



FEMA US&R Task Forces operate under the Operations Section of the Incident Command System (ICS) organization.

Each of the FEMA US&R Task Forces is comprised of 62 members for 31 positions that cover each 12-hour operational shift. A Task Force is multi-disciplinary, self-contained for 72 hours, has extensive medical and equipment cache, has organized internal communications, and has specialized rescue training. The positions are organized into five functional teams (management, search, rescue, medical, and technical) with each

team staffed to permit around-the-clock operations. The diagram below shows US&R Task Force resources.



The diagram below shows the location of US&R Task Force.

CHECKLIST FOR RECEPTION OF ESF #9 RESOUCES

GENERAL: The ESF #9 Urban Search and Rescue (US&R) Group conducts search and operations in locating, extricating and initial medical stabilization to victims of structural collapse. FEMA is the primary agency for ESF #9. The following checklist covers the actions required of the US&R Group Leader during the reception of ESF #9 resources; USACE personnel may be required to support these activities..

Duties and Responsibilities

_____ Report to predetermined work area at the SECC/DFO.

_____ Upon arrival, complete DFO check-in process.

_____ Attend the briefing by the Operations Section Chief on the current situation and procedures for AERT operations.

_____ Unpack US&R administrative support kits and supervise set-up of the unit's assigned work area.

_____ Get IST status briefing from IST liaison at the SECC/DFO.

_____ Assign duties and responsibilities to assigned staff for SECC, DFO, IST site and other locations.

_____ Notify FEMA's ROC and EOC of operational status and obtain current status on US&R resources.

_____ Contact State counterpart and establish formal communications, agree on procedures for processing resource request and disseminating information.

_____ Provide functional expertise to state and local governments in the acquisition and utilization of FEMA ESF #9 resources.

_____ Deploy personnel to assist with ground assessment, mobilization center operations, and to provide technical support to State and local government officials. Order additional US&R support staff as needed.

_____ Ensure there is a documented process for re-supply of the Task Forces. Ensure a logistics specialist is available to process requests through the Defense Coordinating Element (DCE) at the DFO.

_____ Establish a resource ordering system within ESF #9 for requesting additional equipment and supplies, personnel and US&R Task Forces.

_____ Maintain appropriate displays including situation and resource status.

_____ Check E-mail system and insure communications with the EST. Check external communications system to ensure immediate contact with all Task Forces and Incident Support Team personnel in the field (assessment team) and at the State and county/city EOC's.

_____ Establish liaison with the JIC and be prepared to respond to questions and request for interviews.

_____ Ensure staff are briefed on planned actions, critical issues and management expectations.

_____ Ensure financial reports are processed including cost projections for assigned task, strategic planning, and the tracking of expenditures.

_____ Receive tasking, clarify requirements and expedite documents through the Operations Sections approval process.

_____ Coordinate activities with support functions (logistic/finance) and other ESF's as needed.

_____ Document actions on operations tracking form and follow-up until action is closed.

_____ Maintain chronological log highlighting significant events and actions.

_____ Ensure functional action plans are submitted to Information and Plans Section in a timely manner (as scheduled).

_____ Ensure ESF #9 personnel are using the automated data processing (ADP) process for electronically submitting reports including SITREPs, Action Plans, action tracking etc.

_____ Ensure Incident Support Team members are properly briefed and needed equipment has been issued prior to their departure to field locations.

_____ Ensure a property accountability system is established and maintained for all non-expendable property.

_____ Ensure ESF #9 has adequate staff work space and administrative support.

_____ Identify problems and issues associated with your assignment task/mission and adjudicate when required.

_____ Based on anticipated work load, established work schedules for a 24 hour

operation or reduced operational periods as determined by the Operations Section Chief.

_____ Maintain contact list for assigned personnel including pagers, cellular phone and hotel numbers.

_____ Ensure appropriate functional representatives are notified of and attend all required briefings, coordination and planning meetings.

_____ Brief the EST ESF #9 Leader twice a day on current status or more often if significant events occur.

Demobilization

_____ Assist the Emergency Services Group Leader or designee in returning all equipment issued in support of disaster operations.

_____ Prepare inputs to the AERT After-Action Report as directed by the Emergency Services Group Leader or designee.

_____ Assist the Emergency Services Group Leader or designee in gathering files and records for archiving by the Documentation Unit of the Plans and Information Section.

STATE RECEPTION OF URBAN SEARCH AND RESCUE ASSETS

GENERAL: the following is a checklist regarding the duties and responsibilities for the State Response Agency for reception of Urban Search and Rescue (ESF #9) assets. USACE personnel may have to assist with these activities.

State Response Agency Duties and Responsibilities

_____ State prepares to work with local authorities to identify Mobilization Center sites.

_____ State Search & Rescue (SAR) Coordinator will serve as the State POC for ESF #9 assets and will lead the ESF #9 effort.

_____ State SAR Coordinator will be in contact with Local Incident Commanders (IC) to identify the local needs and priorities.

_____ State SAR Coordinator assists Local IC in procuring resources that are difficult for the Local IC to acquire.

_____ State SAR Coordinator will identify priorities, in cooperation with the US&R Incident Support Team (IST), and maintain constant contact with the Local ICs for Task Force assignments.

_____ State SAR Coordinator will determine appropriate routes to selected sites.

_____ State assets will be prepared to provide supplement logistical support to the deployed Task Forces if Department of Defense cannot.

_____ State assets will be prepared to provide continued communications support between the SECC to the IST.

_____ State SAR Coordinator evaluates SAR progress to determine if there should be modification to the plan of action.

GENERAL: the following is a checklist regarding the duties and responsibilities for the Local Response Agency for reception of Urban Search and Rescue (ESF #9) assets. USACE personnel may have to assist with these activities.

Local Response Agency Duties and Responsibilities

_____ Local government identifies local needs and priorities.

_____ Local Incident Commanders should be designated for specific sites.

_____ Local officials will designate local staging areas and potential sites for the Base of Operation (BoO).

_____ Local officials will document and post local search efforts in order to eliminate duplication of effort.

_____ Local officials will document local hazards, technical information, plans and maps, points of contact and expenditure of resources.

_____ Local officials will establish scene control and site security.

_____ Local officials will prepare to provide local Liaison Officers to the IST.

_____ Local ICs will provide a detailed situation briefing to the incoming IST.

_____ Local ICs will have a strategic SAR plan and a detailed tactical SAR specific site plan.

_____ Local ICs will provide intelligence to State SAR Coordinator on site progress.

_____ Local officials must establish contact with local medical system to provide medical assistance for local victims and to assure the smooth transfer of victims from rescue workers to hospital facilities.

_____ Local ICs will review process for continued logistical support.

APPENDIX 10 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
STRUCTURAL SAFETY ASSESSMENT (SSA)

REFERENCES

a. **Maps and Charts**. See Annex B.

b. **Documents**.

USACE SSA Mission Guide
USACE ESF #3 Field Guide
USACE ESF #3 Field Guide Supplement – All Hazards Contingency Plan

1. **SITUATION**

a. **General**. After a major earthquake, buildings will need to be inspected to verify that they can be safely reoccupied. Past earthquakes have demonstrated that local building safety departments can quickly be overloaded with inspections, to the extent they need outside assistance to conduct timely safety evaluations. Either of the two planning events (Richter magnitude 7.5 shallow crustal or magnitude 8.0 subduction zone earthquake) will likely exceed local capabilities and result in requests for USACE SSA resources to augment local building inspection efforts.

b. **Local ATC-20 Program**. The Applied Technology Council-20 (ATC-20) program was developed to provide uniform guidelines and procedures for postearthquake safety evaluation of building types characteristic of the United States. A guiding principal is to promote inspection uniformity to maximize the potential for different inspectors to reach the same conclusion regarding structure's safety and corresponding placard (i.e. Green = Safe to Enter; Yellow = Limited Access; Red = No Entry). MOA has a robust ATC-20 program (which has been adopted statewide), which includes several hundred engineers and building maintenance personnel capable of supporting response efforts associated with seismic events. The MOA inspection program has a strong business recovery program, with special emphasis on training personnel of critical facilities, as well as emphasis on upgrading placards to minimize displacement. Further, MOA ATC-20 training takes 2 days to complete (ATC-20 training in other states takes between 4 and 8 hours) in order to include actual field inspections. It is expected that during actual response efforts, ATC-20 trained building maintenance and engineering personnel will conduct immediate rapid inspections of their own and their client's buildings, to be followed by more detailed inspections. A guiding principal of the MOA ATC-20 training program is to educate the public in order to facilitate safe re-entry and minimize displacement of citizens as much as possible.

c. **Local assistance capabilities and limitaitons**. Many local busineesses as well as Federal agencies have employees (or contracts with engineering firms) who have MOA ATC-20 training. Such trained employees/contraced personnel can assess (and potentially authorize the reoccupying of) the companys' own offices. Volunteers from among these

inspectors would be available for short-term assistance, to conduct inspections after their own buildings have been evaluated. It is anticipated, however, that responsibility to their own business/agency continuity will prevent these inspectors from participating in recovery efforts for longer than a few days. In addition, most of these inspectors will themselves be victims of the earthquake, and will need to attend to their personal/family recovery activities.

d. **Use of volunteers**. Volunteers (other than current local, State, and Federal employes) will normally be hired as temporary employees by the Alaska Division of Emergency Services, in order to transfer the liability from those inspectors and their employers.

e. **Regions outside MOA jurisdiction**. Only a few cities in Alaska have building code enforcement programs. Outside of Anchorage and the City of Kenai, authority for inspections in the impacted area will come from the State of Alaska Fire Marshal's Office. (Fairbanks, Kodiak, and Juneau also have their own enforcement programs, but will not be impacted by either planning event.)

f. **Threat**. Significant structural damage is anticipated from either of the 2 events described in the Basic Plan. It is anticipated the magnitude 7.5 shallow crustal earthquake will generate more severe damage, concentrated mostly in the MOA. The expected magnitude of either event and corresponding damage will require significant augmentation from CONUS to meet inspection requirements. The critical need for rapid inspections will be exacerbated by extreme cold weather. Annex B of this plan quantifies physical damage associated with both events.

g. **Response Organizations**.

(1) Buffalo (LRB), Anchorage (POA), Sacramento (SPK), and Seattle (NWS) Districts are the designated support elements for SSA PRT missions. However, POA would be seriously impacted by an event in Anchorage and would not be able to provide its team for that event.

(2) SSA PRTs will augment existing MOA inspector assets (also Mananuska-Susitna, Kenai Peninsula, and other boroughs/regional jurisdictions, as applicable).

(3) US&R Structures Specialist Cadre members may be used to evaluate mass temporary shelters (schools, church auditoriums, civic centers, etc) and other key operational facilities. USACE may also need to deploy specialty inspection teams early, prior to execution of the main inspection mission, to inspect key facilities. Use of US&R Structures Specialist assets may involve close coordination between the IST Commander, USACE ESF #9 Team Leader/SME, USACE ESF #3 Team Leader, SSA SME, and ATC-20 Training Officer.

(4) USACE districts nationwide will need to provide personnel to conduct the inspections. In additions, those districts may be asked to provide personnel to support

detailed/special inspection requirements such as electrical, mechanical, geotechnical, and hazardous material (HTRW) applications.

(5) Inspectors may include personnel from other Federal agencies (e.g. Bureau of Reclamation engineers). This may include local Federal agency employees (e.g., Department of Interior) in the early stages of the event.

(6) Elmendorf AFB and Fort Richardson may also request assistance on structural inspections through ALCOM and Joint Task Force (Civil Support). These requests would be handled through POA military project management channels, not through the Federal Response Plan.

h. **General Assumptions**.

(1) See assumptions outlined in Basic Plan.

(2) It is anticipated that extensive structural damage associated with the event will require major augmentation of the surviving local ATC-20 program assets. Because this will be a no-notice event, and could occur in winter; USACE must be prepared for immediate activation and deployment of inspectors to mitigate the potential for further displacement or loss of life.

(3) USACE SSA, civil/structural engineers, and other USACE assets may be used to support Mananuska-Susitna and Kenai Peninsula Boroughs, and other jurisdictions peripheral to MOA.

(4) Due to the limited availability of facilities in Anchorage after the earthquake, response personnel will initially be deployed to a CONUS pre-staging area in or near Seattle (for mission briefing, ATC-20 training, receiving special equipment including cold weather clothing, etc.) prior to deploying to Anchorage area.

(5) Deployment strategies are based on anticipated number of damaged structures generated by the HAZUS model. It is also anticipated that, following an actual event, the initial mission requirements will be developed based on preliminary assessments by Municipal, State, and Federal personnel on site, rather than through waiting for inspection requests from the residential application process.

(6) The worst-case scenario of approximately 40,000 structures requiring inspections was used as the basis for planning.

(7) Damage associated with the magnitude 7.5 shallow crustal earthquake will be concentrated mostly in the MOA, and will generate a higher level of damage (anticipated damage to structures equates to 8,500 extensive, 21,000 moderate, 13,000 slight).

(8) The 8.0 subduction earthquake will generate less damage overall (3,500 extensive, 12,500 moderate, and 24,500 slight), but the damage will cover a wider area.

The damaged area will include the Matanuska-Susitna and Kenai Peninsula Boroughs, generating the need to establish additional field offices and additional coordination through local jurisdictions, the Alaska Division of Emergency Services (ADES), and State Fire Marshal's office.

2. **MISSION**.

a. **SSA Mission Definition**. The USACE SSA mission is to provide quality structural safety inspections as required in conjunction with local response and recovery efforts. The basic purpose of these structural evaluations is to determine whether buildings are safe for use or if entry should be either restricted or prohibited. The buildings are to be inspected for damage and assigned a safety rating/posting category in a uniform manner. These inspections will be coordinated with the Anchorage Office of Emergency Management, Building Safety Division (under the Development Services Department, Office of Planning, Development, and Public Works), ADES, as well as other appropriate local officials. Inspections are normally conducted through the ATC-20 process (for earthquake damages).

b. **Types of Inspections**.

(1) Rapid inspections: Rapid visual inspections are conducted to allow rapid reoccupation of apparently safe buidlings, to prevent access to obviously unsafe buildings, and to make most efficient use of the limited available structrural engineering expertise. Inspectors are typically experienced construction inspectors, engineers, or architects, who have been trained in accordance with ATC-20 *Procedures for Postearthquake Safety Evaluation of Buildings*. Rapid inspections will constitute the majority of inspections during the recovery phase.

(2) Detailed inspections: Detailed or special inspections are typically in-depth visual inspections conducted by structural engineers. These inspections are conducted as a follow-up for buildings that could not be established as either apparently safe or unsafe during a rapid inspection. These inspections are also conducted for operating facilities and shelters during the early stages of the event. Additional special inspections might be required for certain locations when electrical, mechanical, hazardous material, or other concerns warrant specialized expertise.

(3) Engineering Evaluations, the third level of inspections under ATC-20, are not included in the basic SSA mission. This level of inspection requires an actual design effort to determine the revised structural capabilities of a building. Such inspections will probably be needed for some of the local military facilities; those inspections will be handled under regular POA military programs, NOT the FRP. (Requests for such inspections for state and local facilities would be managed as a technical assistance mission, even if they were requested as part of the normal SSA mission.)

3. **EXECUTION**

a. **Commander's Intent**. POD will provide assistance as needed to MOA and peripheral jurisdictions (e.g. Mananuska-Susitna and Kenai Peninsula Boroughs) through SCO/Alaska Division of Emergency Services (ADES), to facilitate building inspections, minimize displacement of citizens, and promote safe work space and housing for local personnel, while minimizing the risk of unsafe facilities.

b. **Concept of Operations**.

(1) Surviving POA capabilities will provide assistance until other SSA support can arrive from CONUS. (This may include use of available pre-trained inspectors from other Federal agencies.) A "division forward" management cell will be established in or near MOA. The basic concept of the MOA ATC-20 inspection program is initially to assimilate "drive-by" inspection data, followed by more detailed structural evaluations depending on severity of damage and function of structure. To that end, inspections are conducted based on the following priority:

Critical infrastructure and temporary shelters
Support of essential services
Residential homes

(2) Local civil/structural engineers and building inspectors registered in the MOA Building Safety Division ATC-20 database will assess structural conditions of their own work places, and those of their clients, prior to initiating volunteer inspections.

(3) Volunteer inspectors will be hired by the State of Alaska/ADES, but their inspection activities will be managed by the agency which has local building safety authority (e.g., MOA Building Safety Division).

(4) USACE resources would be brought in to assist in the inspection workload to the extent that in-house and volunteer inspectors are unable to meet the need. Requests for such assistance will be initiated by the MOA Building Safety Division, and will be validated by ADES (which oversees the volunteer effort) in conjunction with the SCO.

(5) SSA inspections within MOA will be conducted in conjunction with the Building Safety Division. Immediate support will be needed to assess the safety of temporary shelters (schools, church auditoriums, civic centers, etc), mass care facilities, and other key operational centers throughout the impacted area. Arrangements will have to be made with the City of Kenai and the State of Alaska (Fire Marshal's Office) in the event the impact area includes jurisdictions peripheral to MOA (e.g. Mananuska-Susitna and Kenai Peninsula Boroughs).

(6) Due to the anticipated damage in the Anchorage area, ATC-20 training for the first wave of inspectors will be conducted in the Seattle area.

(7) The deployed SSA AO will coordinate the mission assignment with FEMA in the DFO; the Mission Manager will govern deployment of required personnel and other resources to the impacted area from the ERRO; the ATC-20 Training Officer will train

incoming inspectors and orchestrate specialty team (e.g. geotechnical, mechanical, electrical, and detailed structural) inspections; and Inspection Team Leaders ensure inspections are completed and submitted to the local building safety department/EFO.

(8) Completed ATC-20 inspection reports (either hand-written forms or electronic files from handheld PCs) will be submitted to the Supervisory Inspection Team Leaders and respective EFO. Essential elements of information (EEIs) will be submitted to Mission Managers in the ERRO, who in turn will submit upward reporting through proper channels consistent with standard PRT mission procedures.

(9) Inspection personnel must be careful to avoid any inference that red-tagging a standing building is equivalent to "condemning" the building. Many such buildings are unsafe because of correctable safety problems; indeed, at least one of the sample ATC-20 "red tag" buildings (damaged in the 1964 earthquake) is currently in use in Anchorage.

c. **SSA Mission Timeline**. A catastrophic earthquake in MOA will warrant immediate deployment, particularly during the winter season. To that end, deployed personnel will first stop at a CONUS pre-staging area (i.e. staging center near Seattle) to receive instructions, training, special equipment, etc. Local trained, volunteer ATC-20 inspectors suspending volunteer inspections much sooner than SSA 30 day mission has been evident from past missions (expect 2-4 day involvement); it will be important for USACE SSA assets to be rapidly deployed to ensure continuity of inspections during this transition period.

The initial priority will be to ensure structural safety of temporary shelters, mass care facilities, critical public buildings (will necessitate deployment of personnel with strong structural background), followed by habitability assessments of residences. Detailed inspections will be required for some shelters. In cold weather, people will not be using tents for interim shelter. In addition, the 7.5 shallow crustal event will cause at least moderate damage to about two/thirds of the buildings in the Municipality of Anchorage. Even if the Glenn Highway is usable, a shortfall of safe, warm shelter space is anticipated. The following timeline is based on HAZUS output of 40,000 structures with slight to extensive damage (from either of the 2 earthquake scenarios):

Days post Disaster	SSA Mission Elements
D + 0	PRT alerted; Structural engineers w/ATC-20 training alerted
D + 1	Mission Assignment (MA) developed; AO reports to DFO in (or near) Anchorage; ATC-20 TO reports initially to staging area in Seattle; balance of PRT management cell deploys to ERRO; SITL reports initially to staging area
D + 2	Mission scoping/coordination w/FEMA, State, locals; resource requirements to UOC identified
D + 3	Inspection Team Leaders (ITLs) deploy (initially to staging area in Seattle)

D + 4	ITLs deploy to AK; 50 ATC-20 Inspectors deploy to staging area for training; transition/close out plan initiated
D + 5	1st 50 inspectors trained; 50 additional inspectors arrive at staging area
D + 6	1st 25 inspection teams (2 inspectors per team) deploy to AK; 50 additional inspectors trained
D + 7	Deploy 2nd 25 inspection teams; 50 additional inspectors trained
D + 8	Deploy 3rd 25 inspection teams; 50 additional inspectors arrive
D + 9	50 additional inspectors trained; 25 inspection teams deploy
D + 10	Full production rate of 1000 inspections/day
D + 16	Mission execution IPR
D + 22	Mission execution IPR; Inspector replacement resource requirements submitted to UOC
D + 24	Begin transition of PRTs and ITLs (3 days overlap)
D + 26	Complete transition of PRTs and ITLs
D + 27	50 new inspectors arrive at Staging Area
D + 28	Train 1st 50 inspectors; 50 additional inspectors arrive
D + 29	Deploy 1st 25 inspection teams; train 2nd 50 inspectors; disengage 1st inspectors who arrived on D + 4
D + 30	Deploy 2nd 25 inspection teams; 50 additional inspectors arrive; disengage 2nd set of inspection teams who arrived on D + 5
D + 31	Train 3rd 50 inspectors; 50 additional inspectors arrive; disengage 3rd set of inspection teams who arrived on D + 6
D + 32	Deploy 3rd 25 inspection teams; train 4th 50 inspectors; disengage 3rd inspection team who arrived on D + 7
D + 33	Deploy 4th 25 inspection teams; disengage 4th inspectors who arrived on D + 8
D + 41	Mission execution IPR
D + 50	Inspections Complete
D + 51	Out process inspectors
D + 52	After action reviews w/Management Cells and ITLs
D + 53	Disengage Management Cell and ITLs

d. **Timeline parameters and assumptions**.

Short suspense, no-notice event.

Rapid (habitability) inspections.

10 inspections/team/day.

Inspection rate may be less due to potential demand for numerous detailed/special inspections, re-inspections warranted by after-shocks, remoteness and proximity of structures, and cold weather.

50 inspectors/trained per day.

Timeline includes 2 Management Cells + 2 Support Elements; the 2nd wave of deployed resources will work less than 30 days to accommodate the 40,000 inspections. Team Leaders, HQUSACE, and Management Cell may choose to maintain the existing Management Cell (maintain original AO, Mission Manager, Mission Specialist, ATC-20 Training Officer) to facilitate mission continuity, lessons learned process, and close-out. Decision makers may also elect to extend some of the original inspectors in lieu of rotating in new inspectors, pending actual inspection rate and remaining workload.

ATC-20 Training Officer will facilitate detailed/specialty inspections once Inspection Teams have been trained (or between training missions if Training Officer is extended).

Mission may require inspector support from other Federal agencies.

e. **Potential Tasks.**

(1) SSA Mission – assistance to State of Alaska through FEMA under Federal Response Plan.

(2) Technical Assistance to assess structural safety specifically with regard to temporary shelter (e.g. schools, church auditoriums, civic centers), mass care facilities, and other key operational facilities (inspections conducted by US&R Structures Specialist cadre members and/or structural engineers/civil engineers with strong structural background).

(3) Technical Assistance for geotechnical, mechanical, and other special inspections (to be facilitated by SSA SME and ATC-20 Training Officer).

(4) There will probably also be requirements for detailed inspections of military facilities on Elmendorf AFB and Fort Richardson. These inspections will be coordinated through POA and funded by DoD rather than FEMA. Mission personnel must make certain that labor and per diem costs are charged to the right projects, since some individuals could conduct inspections associated with multiple funding sources (Army O&M, Air Force O&M, and FEMA).

4. **ADMINISTRATION AND LOGISTICS**.

a. **Concept of Support**. See Basic Plan. Initial on-hand resources will quickly be overwhelmed; it is anticipated POD will immediately request assistance from HQUSACE UOC for SSA personnel.

b. **Logistics**. See Basic Plan. SSA personnel will need one car per team of 2 inspectors (for limited availability, closely-spaced sites could permit two teams per car, or several teams per van), laptops, and handheld PCs (iPAQ or equivalent) for electronic inspection forms. See also equipment list in SSA Mission Guide. Working space will be required in EFO(s) for Supervisory Inspection Team Leader(s) for collecting field data, the DFO for the AO, the ERRO for the Mission Manager/Mission Specialist, and in the EFO for the Training Officer. The Training Officer, ITL/SITL, and Support Elements will also need logistic support in the staging area (Seattle).

c. **Personnel**. See Basic Plan and Tab A for the SSA PRT Organization Chart. The SSA PRT consists of:

Management Cell (ESF #3 Action Officer, Mission Manager, Mission Specialist, ATC-20 Training Officer, Supervisory Inspection Team Leader)
Support Element (4 Inspection Team Leaders and Inspectors)

The SSA PRT trains incoming Federal inspectors and orchestrates inspections, data collection, continuing coordination with interfacing departments, and agencies, and upward reporting of EEIs in conjunction with local response and recovery efforts. An SSA SME may also be deployed to coordinate efforts between participating agencies and USACE assets.

d. **Public Affairs**. See Basic Plan. USACE Public Affairs may be asked to assist local/State authorities in the dissemination of information regarding the procedures for citizens to request safety inspections.

5. **COMMAND AND SIGNAL**.

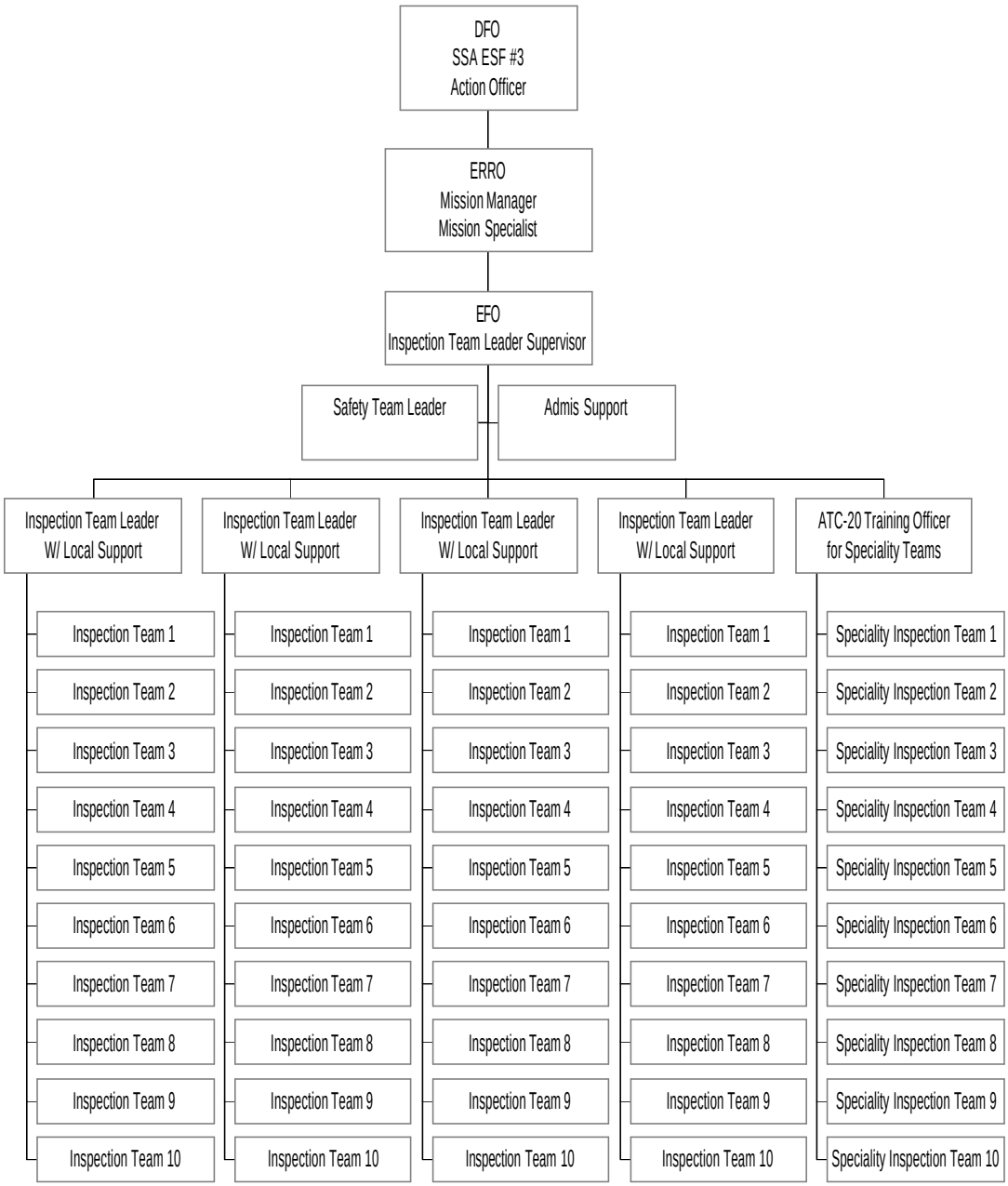
a. **Command Relationships**. See Basic Plan. The SSA Management Cell will coordinate efforts with FEMA, local authorities, other ESFs, and Support Elements as needed to ensure mission requirements are met. Refer also to Tab A (SSA PRT Organization Chart) and the SSA Mission Guide for Command and Control and intra-team relationship descriptions.

b. **Command Posts**. See Basic Plan. In addition to command facilities in the periphery of MOA, a staging area (in or near Seattle) will likely be required to train and prepare incoming inspectors, in order to facilitate rapid deployment in impacted area.

c. **Succession to Command**. See Basic Plan in front of document.

d. **Signal**. See Basic Plan in front of document. It is anticipated that field inspectors will require cell phones and 2-way radios to ensure communication between the ERRO, EFO(s), and other Support Elements.

TAB A TO APPENDIX 10 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
STRUCTURAL SAFETY ASSESSMENT (SSA) PRT ORGANIZATION CHART



APPENDIX 11 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
EMERGENCY ELECTRICAL POWER

1. REFERENCES

a. **Maps and Charts**.

(1) See Annex B.

(2) Maps serving as mission status charts will be produced by the proprietary USACE Emergency Power Information System (EPIS) software program ENGLink Limited Transmission (LT). See Tab A for additional information.

b. **Documents**.

(1) See basic plan.

(2) USACE Emergency Power Mission Guide

(3) The Emergency Power Mission Support Advance Contracting Initiative (ACI) contract for the State of Alaska, DACW59-D-_ _-_ _ _ _. (NOTE: This document should be available on the Power PRT pages within the USACE ENGLink web page, on or about 1 October 2002.)

(4) Disaster event specific Emergency Power Support procurement package. (NOTE: This document should be available on the Power PRT pages within the USACE ENGLink web page, on or about 1 October 2002.)

(5) Miscellaneous Emergency Power Mission support and execution documents as posted within the Power PRT pages of the USACE ENGLink web page. To access these documents, use the Teams – Mission PRT – Teams – Power successive links on the menu bar at the top of ENGLink.

c. **Other**. The USACE-developed ENGLink Limited Transmission (LT) Emergency Power Information System (EPIS) software program. This is a proprietary software program utilized by the USACE Emergency Power Planning & Response Team(s) assigned to execute an emergency power mission.

1. SITUATION

a. General. This annex is based on response to a catastrophic winter earthquake in Anchorage, Alaska. The two distinguishing characteristics of a "catastrophic earthquake" are 1) it is a no-notice type of event, and 2) the damage will be so severe that Federal response will be quickly authorized through an emergency or a major disaster declaration. A wintertime event in Alaska has the additional factor of an immediate requirement to provide power to operate heating systems in surviving buildings, to protect the population from freezing/hypothermia injuries and deaths. Almost all existing heating systems require electrical power for operation.

All of these factors result in a mission requiring the immediate provision of physical assistance to the victims. The normal response and reaction time, including pre-positioning of equipment, will **NOT** be available.

b. Threat. Along with the initial devastation, including loss of life and serious injury to the people of Alaska a catastrophic earthquake threatens long-term disruption of basic human

services such as: heat, water, electricity and natural gas. This threatens the safety and well being of the affected population until temporary emergency power can be supplied or until commercial power is restored. This lack of commercially available power will also have a direct impact on the operations of several other potential Corps of Engineers' missions from FEMA including: Water, Ice and Temporary Housing.

c. <u>Response Organizations</u>

(1) Federal Emergency Management Agency (FEMA). Implements the Federal Response Plan (FRP) for mobilizing Federal resources from the plan's twenty-seven (27) Federal departments and agencies, including USACE, to assist State and/or local governments' unmet response and recovery needs following a major disaster or domestic emergency. FEMA will issue these Federal agencies a Request for Assistance (RFA) or Mission Assignment (MA), the document providing basic requirements and funding for response. To save time in initiating the Emergency Power mission, FEMA will probably use a Pre-scripted Mission Assignment (PSMA) to provide the necessary basic mission scope and funding to mobilize an Emergency Power PRT Team. However, they may elect to issue a disaster specific mission assignment based upon unmet needs known by the State of Alaska. FEMA normally mobilizes generators, in lots of 50 or 100, from one or more of their Territorial Logistics Center's (TLC's) to a pre-determined staging area in the disaster region. For Alaska, FEMA will also immediately ship the generators from its logistical staging area at Fort Shafter, Hawaii.

(2) Department of Defense (DOD). The Department of Defense supports each of the twelve Emergency Support Functions (ESF) of the Federal Response Plan. DOD has primary responsibility for ESF#3, Public Works and Engineering, and has tasked USACE to plan and execute this function.

(3) US Army Corps of Engineers (USACE). USACE is the designated DOD planning and operating agent for ESF#3, Public Works and Engineering. A USACE ESF#3 Team Leader (TL) will represent the Corps of Engineers, first at the Regional Operations Center (ROC), then at the Disaster Field Office (DFO) established for the event. The TL will be the liaison between FEMA and the Corps for all issued missions, including the Emergency Power mission. USACE will provide the manpower to manage, administer, and execute the mission assignment through the use of Emergency Power PRT teams, Functional Support teams, the 249th Engineer Battalion, and contracted resources. The power mission is issued under the Federal Response Plan, as authorized by the Stafford Act (previously known as PL 93-288). The USACE internal disaster response authority, PL 84-99, Flood and Coastal Storm Emergencies, is used to prepare for the response. However, it does not provide any authority for the execution of an emergency power mission.

(4) 249th Engineer Battalion (Prime Power), USACE. The 249th Engineer Battalion primarily assists in the technical assistance needs of the Emergency Power Mission. They are the primary resource for performing power needs assessments of critical facilities. In so doing they provide the information necessary to determine the overall scope of the mission with respect to Federal resources needed. The Prime Power detachment at Fort Lewis, Washington will probably

provide the immediate support to the response effort, but personnel for the main response effort could be drawn from any of the organization's detachments—including Fort Shafter, Hawaii.

(5) Advanced Contract Initiative (ACI) Contractor. The ACI Contractor typically performs generator installations, including transportation to the site. They are also responsible for maintenance, refueling and recovery of any generators used to support the FEMA emergency power mission.

(6) Department of Energy (DOE). The DOE is responsible for coordinating the restoration of primary power to the affected area. This coordination with the emergency power mission helps to set priorities and ensures that time and resources are not wasted in providing support to a facility that is about to have its power restored. Under the FRP they are expected to provide liaison personnel under ESF #12 at the ERT-A/DFO. The National Association of State Energy Officials (BASEO) may also provide a liaison to assist with this coordination. Within the State of Alaska this coordination function is likely to be performed by the Alaskan Energy Authority.

(7) Alaskan Command (ALCOM). Coordinates the use of the Joint Mobility Center at Elmendorf AFB for the off-loading and initial temporary storage of FEMA assets, including generators, to assist in relief efforts. ALCOM also provides the Defense Coordinating Officer (DCO) from within the command's J-6 organization, and provides coordination with the State of Alaska.

(8) State Government. The Alaska Division of Emergency Services (ADES), assisted by the Alaska Department of Commerce and Economic Development (ADCED) and the Alaska Department of Community and Regional Affairs (ADCRA), coordinates the emergency power needs of the affected areas with the local governments and requests assistance through FEMA based on the priorities established by the state. The Alaska Energy Authority (part of ADCED) owns the Railbelt Intertie, which transmits power between Interior Alaska (Fairbanks/Golden Valley Electric Association) and Southcentral Alaska, and also owns the Bradley Lake Hydroelectric Project, a major supplier of electric power for the Railbelt area.

(9) Local Government. The Municipality of Anchorage, through Office of Emergency Management, coordinates the emergency power needs within the Municipality with ADES and also assists ADES in establishing priorities. There are also many variations of Mutual Aid pacts with commercial, local, State and Federal agencies that exist within the region. Awareness of these will decrease the likelihood of duplicative resources being allocated to a single unmet power need.

(10) Public Utilities. Municipal Light and Power (ML&P), Chugach Electric Association (CEA), and Matanuska Electric Association (MEA) provide power to various areas within the Municipality of Anchorage. MEA provides power in the Matanuska-Susitna Borough, while CEA provides power for Whittier and for the eastern portion of the Kenai Peninsula Borough (excluding Seward). Homer Electric Association provides power for the western portion of the Kenai Peninsula Borough, from Homer to Kenai. See Tab A for details. There are a number of power sharing agreements and Mutual Aid pacts established among the local utilities, and with utilities located outside the impacted area. The three utilities serving the MOA will have a

representative in the MOA EOC, and that is the location for coordinating the status of restoration of service. That coordination is critical for scheduling the installation of emergency generators, to avoid the lost effort of installing generators when the regular electrical power is about to be restored to the same facility.

d. Assumptions.

(1). While the Alaska District may be classified as a "Victim District" following an Anchorage area earthquake, sufficient replacement personnel will be provided by POH and other USACE organizations to fill the positions noted in this plan as "CEPOA personnel.

(2) Most critical facilities in the region already have emergency power generation capabilities, but some of these will fail to operate either due to mechanical difficulty or because of impacts of the event.

(3) The event can happen in the winter and this will require special considerations for the generators. These can be found in Tab B to this Appendix.

(4) Prior to an earthquake event in the Anchorage area, some FEMA generator assets will have been modified to be able to operate in extreme cold weather conditions. However, many of the incoming generators will not have been so modified.

(5) Installations and productivity will be complicated by the extended darkness and severe cold. Portable lighting and heating equipment will be required to maintain operations in cold weather and in extended periods of darkness. Special purpose equipment and/or additional manpower may be required to keep productivity on par with mission needs, and to permit safe mission execution.

2. **MISSION**. The Emergency Power Mission includes the assessment of emergency electrical power needs and all other support provisions necessary to provide temporary electrical service to critical public facilities and agencies until the restoration of reliable commercial power is achieved. This USACE mission administration will be accomplished the deployed Emergency Power PRT, and execution will be by 249th Engineer Battalion personnel and the ACI Contractor. Execution will include the assessment, supply, delivery, installation, operation, maintenance, recovery, return to depot, and inventory control of generators, ancillary equipment, and materials for generator installations and other unmet power needs requirements levied by FEMA and the State of Alaska.

3. **EXECUTION**

a. Phase 1 – Pre-Event Because an earthquake is a no-notice event, generators and personnel can not be pre-staged. The primary advance measures that must be taken are:

(1) To insure that cold weather clothing has been issued, prior to the earthquake to the team designated to initially respond. (This cold weather preparation would also be needed for other potential winter events, such as the January, 1998 Canada/New York ice storm.)

(2) To prepare at least a portion of FEMA's stockpiled generators for cold weather operations.

b. Phase 2 – Activation and Initial Deployment For this particular event, FEMA will immediately activate personnel and deploy equipment to Anchorage.

(1) **FEMA**. FEMA initiates the mission assignment and activation process and implements the FRP and resultant deployment of pertinent personnel from FRP agencies into the affected area to begin the disaster response and recovery processes. FEMA mobilizes generators to the region from its Territorial Logistics Centers (TLC's). The two primary sources of generators will likely be TLC-West in Sacramento, CA, and the FEMA staging area in Hawaii. NOTE: At the time this Annex was prepared, none of these FEMA generators have been modified for extreme cold weather operations.

(2) **USACE.** The ESF#3 Team Leader(s) and Assistant Team Leader(s) will deploy to the disaster area and work under the operational control of the Federal Coordinating Officer (FCO). Along with these individuals, planning and organizational staff, independent assessment teams and functional subject matter experts may be deployed depending on the magnitude of the event. In the case of Emergency Power, personnel from the 249th Engineer Battalion, Emergency Power PRT team and ACI Contractor will also deploy. For a catastrophic earthquake in winter, the full PRT will be activated within a few hours of the event.

(3) **249th Engineer Battalion**. Typically will send an advance team to the impacted area to determine the scope of the disaster and level of 249th resources necessary to accomplish the work and to coordinate with the PRT AO and the ESF#3 Team Leader. For a catastrophic earthquake, the 249th will need to provide immediate technical assistance while the assessments are still in progress.

(4) **ACI Contractor.** If the ACI is in place for an event in the State of Alaska, then they will be tasked to send an advance team to the site to determine the scope of their efforts and resulting level of Contractor resources necessary to accomplish the work.

(5) **ALCOM** – Coordinates with all agencies in anticipation of the disaster response. Puts into effect the Air Force Response Plan 5210. Prepares to use the Joint Mobility Center for off-loading aircraft and providing temporary storage of FEMA commodities until they can be shipped to local distribution points and staging area(s). (FEMA policies call for such storage to be the minimum possible; however, some generators will need to be stored to help to match specific generator capabilities to appropriate load requirements.)

(6) **State & Local Government and Public Utilities**. Assess Damage and coordinate with each other, the Municipality of Anchorage, Alaska Emergency Services, and FEMA.

b. <u>Phase 3 - Deployment.</u> For this particular event, an earthquake, there is no prior notice to allow teams/personnel to be identified and prepare for deployment. Specifically, Phase 2a - Activation will also be deployment for most Emergency Power mission administration and execution individuals. This phase will deal with the deployment of individuals not previously deployed under Phase I.

(1) **USACE**. As quickly as possible after the first respondents have time to survey the magnitude of the disaster USACE will deploy appropriate mission support personnel. Early deployments will consist of Functional-Planning and Response Teams such as: Logistics Management Response Teams, Resource Management Teams, Contracting Management Teams and Mission PRT teams (ex. Ice, Water, Power, Temporary Roofing, etc.).

USACE will be prepared to support the operation as required, including manpower and material augmentation. Supporting Divisions will be prepared to assume the main effort based on the situation. If a USACE organization is impacted by the event and is rendered a 'victim' (unable to

execute assigned missions) their primary mission switches from response to reconstitution of their workforce and command structure.

(2) **249th Engineer Battalion**. The 249th Engineer Battalion deploys the appropriate personnel necessary to accomplish the mission of assessing the power needs of critical facilities impacted by the event.

(3) **ACI** Contractor. The ACI Contractor mobilizes the personnel necessary to execute the mission, based on the scope of the work created from the event. This may be a moving target and initial response will be based on early estimates.

c. <u>Phase 3 - Execution</u> This is the period of time that commences with the formal establishment of the mission and culminates with the fiscal/physical closeout of the mission.

(1) **FEMA**. FEMA accepts the unmet needs from the State of Alaska and requests of the affected State and provides direction to USACE to accomplish the planning and execution of various technical missions, including the Emergency Power mission. FEMA provides the Corps with the necessary generators to accomplish the work.

(2) **USACE**. Accepts the unmet power needs identified from FEMA and executes the overall emergency power mission using a trained management cell called the Emergency Power PRT Team, and executes mission requirements using the 249th Engineer Battalion and the ACI Contractor teams. The mission is formally executed as described in the USACE Emergency Power Mission Guide.

(3) **249th Engineer** Battalion. The 249th Engineer Battalion assesses the critical facilities power needs and determines what size generator is needed to restore the facility to an operational condition until primary commercial power can be restored. The 249th also assists in generator installations and Quality Assurance (QA) of Contractor related work, and can provide other assets and services related to safe power restoration to a facility or area.

(4) **ACI Contractor**. The ACI Contractor is tasked by the Corps of Engineers to assess, haul, install, maintain, fuel and recover generators under the mission. Typically these generators are FEMA owned, but there are contract provisions to allow procurement via rental/lease of generators if the need should present itself.

(5) **Department of Energy (DOE)**. The Department of Energy represents the ESF#12 cell and is tasked with coordinating the restoration of primary commercial power to the affected area. DOE coordinates with the local power companies and the ESF#3 cell to communicate the progress of power restoration and eliminate the inefficient use of resources associated with emergency power efforts in areas that are soon to be restored to service.

(6) **Alaskan Command (ALCOM)**. Barring severe damage to Elmendorf AFB facilities, ALCOM will provide a means of landing FEMA generators and off-loading them at their Joint Mobility Center. This site is intended to be a temporary storage facility and the generators will still require transport to the staging area.

(7) **State & Local Government**. The State of Alaska, Municipality of Anchorage, and other & local government emergency management agencies, as applicable, will identify the critical facilities that must have temporary emergency power restored due to the event. They will prioritize the needs of the state and formally request assistance from FEMA.

(8) **Public Utilities**. The public utilities will work to restore reliable primary power to all of the affected facilities. They will coordinate their efforts with DOE so that they can properly coordinate with the Emergency Power mission.

4. **MISSION SUPPORT**. The following paragraphs describe the various emergency power mission support activities provided by a combination of PRT and/or supporting District personnel. They also contain mission-critical support provided by FEMA, Other Federal Agencies (OFAs), or local/State personnel. This document assumes that CEPOA will not become a "victim District", and will be able to provide minimal emergency power mission support personnel until augmenting USACE personnel can be transported into the area. NOTE: The actual initiation of the execution phase of the mission will ultimately determine who will provide these efforts, if not CEPOA personnel.

a. **PRT/Mission Management**.

(1) The primary intent of the PRT concept is to conduct overall mission management. Thus the impacted District would only be tasked to provide minimal mission support personnel. However, as this scenario is based upon a no-notice event it is anticipated 1-3 days would be required to transport in an emergency power PRT to execute the mission.

(2) The CEPOA EOC CAT shall establish an Emergency Power Liaison Officer (EP-LNO) to provide early event unmet power needs coordination with respective local/State/FEMA/OFA personnel while the PRT, generators, and support personnel/contractor(s) are being mobilized into the region. This LNO shall ensure the establishment of the Emergency Power Mission in ENGLink in advance of PRT arrival. The LNO would then be available to transition the arriving PRT on the status of mission related activities occurring to that point. It would also be expected for this LNO serve as the primary link between the PRT and CEPOA for miscellaneous mission support requirements for the duration of the Emergency Power mission.

(3) Typically PRTs do not remain deployed to the supporting District for the entire mission execution period. Should generators remain deployed beyond the TDY period of the original, or any subsequently deployed, Emergency Power PRT, this CEPOA EP-LNO can also be prepared to assist with mission and contract closeout activities.

b. **Mission Execution**. A variety of personnel are required for field-related support to the emergency power mission. The functions required, and potential sources of personnel to perform these functions are:

(1) Technical Assistance – Typically this mission element is provided by elements of the 249th Engineering Battalion. The 249th has pre-designated elements scheduled to deploy from Ft. Lewis, WA or Ft. Shafter, HI for an Alaskan disaster event. Should none, or only a limited number, of the 249th personnel be deployed, the ACI contractor can be tasked to provide this assistance, or locally available A-E contractors with electrical engineering capability can be tasked to provide this expertise.

(2) Quality Assurance – The staffing of an emergency power PRT does not include Government Quality Assurance (QA) Representative(s) for emergency power support contracting activities. However, some PRT members are expected to perform this duty should the mission be relatively small in scope and size. Several other short-term sources for power QA Reps are: the Logistics PRT or the 249th. But these 2 organizations should only be expected to provide this function for a short-term basis. The supported/impacted District is expected to be the primary source of any longer-term QA Rep need for this mission. The QAs can be provided from in-house CEPOA personnel, or augmented with TDY USACE personnel.

c. **Contract Procurement**. The Emergency Power PRT deploys with a Contracting Specialist (CS) to augment the impacted/supported District CT staff for procurement activities related to Emergency Power Mission support. It is recommended that CEPOA determine pre-event who will be granted access permissions, or signature authority, within their CEFMS database to support the emergency power mission. The PRT CS, the PRT MM, or the CEPOA EP-LNO would be likely candidates, thought the PRT MM is likely the best overall choice as they manage the mission execution decisions. CEPOA should also determine if the PRT CS will be granted data entry permissions in their "SPS"/"PD2" (i.e. "PD-squared") procurement software/database. If not granted access, the PRT CS will rely on CEPOA contracting personnel to perform the required data entry into this system for any emergency power mission-related procurement activities.

d. **Contract Administration**. CEPOA CT, or other appropriate CEPOA organization, shall determine who will be the designated Contracting Officer Representative(s) for the administration of the Emergency Power ACI task order, or event specific emergency power support contract procured, as applicable. Deployed PRT personnel can well perform this function, however there are differences in the member capabilities of each PRT that CEPOA will need to be aware of for this decision making process. The members of a PRT who can best perform this contract administration role are usually the CS, MS, or the LTM. The PRT MM should recommend to the CEDPOA Contracting Officer who, within their PRT, they recommend. It is also strongly recommended that the CEPOA Contracting Officer assign another COR from within the CEPOA organization to maintain contract administration continuity once the Power PRT re-deploys.

e. **Logistics**. The essential logistics support required for emergency power mission execution is usually provided by the Logistics PRT (LOG PRT) assigned to that disaster event. Support expected from the LOG PRT includes: short-term QAs; short-term administrative/clerical assistance; miscellaneous office-related support including, but not limited to, a workspace for the LTM, miscellaneous office supplies, facsimile machine access, land-line telephone, USACE LAN network access, copy machine access; property book officer support; and forklift/material handling support. The PRT Logistics Team Member (LTM) is typically "assigned" to work under the LOG PRT leader at the staging area. However the LTM's primary day-to-day role is the execution of their Emergency Power mission duties. If a USACE LG PRT is not deployed CEPOA LO personnel will be required to assist with the above listed items.

f. **Real Estate**. The USACE Real Estate (RE) policy for Emergency Power mission execution is for the CEPOA RE Division/Office to obtain any and all Rights-Of-Entry (ROEs) required for

the Emergency Power mission "prior" to the physical installation of any generator. (The ROE forms used for the emergency power mission execution can be found on the Power PRT pages within the ENGLink web page listed in paragraph 1.b.(5)) Should CEPOA RE be unable or unwilling to support this real estate execution policy, members of the 249th, the ACI contractor, and/or PRT members can perform this task on an as-needed basis until USACE RE augmentee(s) is/are deployed to CEPOA. NOTE: The lack of a signed ROE will never delay the physical installation and operation of any emergency generator in a disaster response and recovery situation.

g. **Environmental/Regulatory**. An initial Environmental Baseline Assessment (EBA) is conducted prior to the installation of the generator. The appropriate CEPOA Environmental/Regulatory personnel are expected to support this requirement, or CEPOA RE can perform the EBA should they obtain the ROE prior to generator installation. The ACI contractor, 249th assessment/installation personnel, or PRT members can also perform the EBA at the time of generator installation. An EBA will be conducted NLT the time of the physical installation of the generator to document installation site conditions prior to actual generator operations.
A final EBA will be conducted when the generator is uninstalled and physically removed from the site. This final EBA is typically conducted by RE personnel, as the landowner is required to sign this EBA releasing the Government from liability of post-use site conditions. However, any of the parties listed earlier who can obtain ROE or the initial EBA can perform the final EBA if no CEPOA support is available.

h. **Resource Management**. There are several critical instances of Resource Management (RM) support required during emergency power mission execution. These are:

(1) Receipt of verbal mission assignment, or actual Mission Assignment (MA) (previously called a Request for Federal Assistance (RFA)) from FEMA allowing RM to establish the funded work item in the CEPOA CEFMS database. This initial step is critical to then allow funds to be MIPR'd to the District of the deploying Emergency Power PRT for PRT travel and labor related expenses.

(2) Establishing the PR&C in the CEPOA CEFMS database to issue a Task Order against the emergency power support ACI contract, or to allow procurement of any event specific power mission support contract(s).

(3) Establishing PR&Cs for any direct CEPOA provided support for the emergency power mission, or for MIPRs to Districts of any deploying power mission augmentees.
NOTE: It is assumed, for the purposes of this annex, that CEPOA personnel or the EP-LNO will coordinate and accomplish these RM-related tasks. Consideration should also be given to providing CEPOA CEFMS access permissions to the PRT MM to allow him/her to initiate any power mission related PR&Cs with CEPOA personnel then providing PR&C approvals and certifications required.

(4) FEMA mission travel and copies of labor/timesheet documentation would be held at the deploying PRTs home office RM.

i. **Administrative**. Emergency Power mission execution requires little administrative support requirements outside of what would be expected in normal, day-to-day USACE activities. The following assumptions are made with respect to administrative support requirements:

(1) PRT members will accomplish most required administrative functions. However, access to certain pieces of office equipment for them to accomplish these tasks will be required. The PRT MM, MS, and CS will be typically co-located at the CEPOA EOC or at the ERRO and would expect to use the office equipment there. The PRT AO would depend upon FEMA provided office equipment at their deployment location in the ERT-A/DFO. The PRT LTM would depend upon LOG-PRT office equipment at the Staging Area.

(2) Weekly labor timesheets would be routed via procedures established by CEPOA or the ERRO, as applicable.

(3) Any PRT related travel arrangements would be made with the deployed PRT home duty station travel agent and travel-approving official.

j. **Local/State Agency**. There are miscellaneous items that local, regional, or state agencies would be expected to provide, or provide a POC for coordination, that would impact the emergency power mission execution. These may include, but are not limited to:

(1) Power grid restoration schedule and status

(2) Any travel restrictions within the impacted area

(3) Clearance to enter any restricted area, but only to support power mission requirements

(4) Law enforcement escort or support as required by the situation

(5) Provide a POC for coordinating agencies as applicable to the situation.

(6) Either local/regional utility POC, or National Association of State Energy Official (NASEO) POC.

k. **FEMA/OFAs**. FEMA and OFAs also impact the execution of the emergency power mission. These impacts can include, but not be limited to:

(1) FEMA provides the majority of generators to be used from their national stockpiles strategically located at Territorial Logistics Centers (TLCs).

(2) FEMA ultimately provides the specific taskings to the PRT AO of any unmet power needs assistance requirements.

(3) FEMA and ESF #1 (Department of Transportation (DOT)) can impact material deliveries and personnel deploying into, and out, of the impacted area.

(4) ESF #12 (Department of Energy (DOE)) providing a POC and timely information on power grid restoration schedule and status.

5. COMMAND AND SIGNAL.

a. **Command Relationships**. Overall various USACE, FEMA, OFA, ESF #3, etc. overall command relationships have been provided and discussed elsewhere in this CDRP. Within the PRT, the Action Officer is the overall Team Leader. The PRT works under the overall direction of the ESF #3 Team Leader through the AO for the duration of the event. The basic command and activity relationships with respect to the 3 primary parties involved with an emergency power mission are as follows:

(1) PRT

(a) The AO ensures that the MM, MS, CS, and LTM deploy to their respective assignments with appropriate equipment to perform their mission-required tasks. The AO takes direction from the ESF #3 Team Leader with respect to conduct of USACE-related operations.

The AO receives specific unmet power needs taskings from FEMA, and enters emergency power taskings into ENGLink LT as soon as they are received.

(b) The MM, MS, and CS deploys to CEPOA/ERRO to establish themselves with the USACE event command and support personnel. The MM ensures that the contracting processes are in place to provide emergency power mission support requirements, and briefs the mission status. The MS is the immediate backup for the MM, and performs some field related support activities. The CS supports the emergency power mission contract actions required, and can support other USACE contracting efforts as necessary.

(c) The LTM deploys to the staging area and establishes themselves with the LOG-PRT. The LTM's primary role is to enter and print assessment/installation data form ENGLink LT and coordinate with 249th and the ACI and the LOG-PRT. They will assist the LOG-PRT as required when it does not impact their power mission duties.

(2) 249th – The 249th will have a Management Cell from their HQ unit (Ft. Belvoir), and mission execution teams deployed, most likely from either Ft. Lewis or Ft. Shafter as previously mentioned. The 249th may take direction directly form FEMA, especially if they are tasked under a Technical Assistance mission. Under a full emergency power mission they take direction from primarily the PRT AO who makes requests through the 249th management cell. The management cell then provides specific direction to the individual soldiers or teams to support the requirements.

(3) ACI/Event Specific Contractor – Takes direction from the designated Contracting Officer Representative (COR) on the PRT or from CEPOA for the emergency power support contract or task order, as applicable. They take direction from no other USACE personnel, nor any other Federal, local, or state personnel.

b. **Command Posts**. The PRT establishes themselves at different deployment activities as required to perform their mission execution duties\ as follows:

(1) AO and the 249th Management Cell to the ERT-A or DFO where they can interact directly with representatives from FEMA, ESF #12 (DOE), and the State of Alaska for unmet power needs.

(2) MM, MS, and CS to CEPOA or the ERRO to coordinate mission support requirements and provide mission updates to the event command staff.

(3) LTM, 249th mission execution teams, and ACI field operations manager to the Staging Area for receiving and executing emergency power mission directives, either as entered and received in ENGLink LT or as received directly from the AO or MM.

c. **Reporting**. Emergency Power mission reporting requirements primarily consist of the EEIs as previously listed in paragraph 1.a.(3) of this annex, and as supplemented by the desires of the USACE command staff at CEPOA/ERRO, and FEMA and the ESF #3 Team Leader at the ERT-A/DFO. FEMA will establish a reporting cut-off period. Typically USACE's reporting period attempts to mirror FEMAs so as to not introduce the likelihood of different quantitative mission status numbers being developed and reported, one in a FEMA report and then another in a USACE report. Close coordination and communication between the ERRO/CEPOA and ERT-A/DFO can eliminate the potential for a "losing battle" in the disaster event information war.

(1) ENGLink SITREP – Typically the MM is the primary responsible person for input on the emergency power mission status into the CDEPOA SITREP. In the MM's absence the MS, or the CEPOA EP-LNO will enter this information.

(2) ENGLink SPOTREP – The PRT MM, or MS or EP-LNO, will coordinate with the CEPOA/ERRO staff to determine if off-normal reporting notable event(s) related to the emergency power mission should be reported via SPOTREP. If so, the MM, or MS or EP-LNO, will enter this information into a SPOTREP and then request release from CEPOA/ERRO personnel.

(3) CEPOA/ERRO Command Staff Briefings – The MM, or MS or EP-LNO in the MM's absence, will report the emergency power mission support status.

(4) ERT-A/DFO Briefings – The PRT AO typically provides the ESF #3 Team Leader with the required information. The AO may be tasked by the ESF #3 TLK to brief only the emergency power mission's status as part of a larger briefing.

REGIONAL ELECTRICAL UTILITIES

1. Electrical power for the area impacted by the planning earthquakes is provided by the Railbelt utilities system. The Railbelt system provides electrical power to the majority of the residents in Alaska, and accounts for 86 percent of the electricity generated within the state. The interconnections for this system roughly parallel the highway system, from Homer and Seward in the south, through Anchorage, along the Parks Highway to Fairbanks, then down the Richardson Highway to Delta Junction. The system involves five major cooperatives and municipal systems, several smaller utility organizations, and the Alaska Energy Authority, a State of Alaska agency. It is not connected to any other electrical system. The utilities within the impacted area are:

a. Municipal Power & Light (ML&P), owned by the Municipality of Anchorage, provides power for downtown and midtown Anchorage, out to Tudor and Boniface, and along the Glenn Highway to Ship Creek. ML&P both generates and distributes power; it also provides wholesale power to other Railbelt utilities. (See service area map, below.)

b. Chugach Electric Association (CEA), a cooperative, provides power in east and south Anchorage, including Hillside and along Turnagain Arm; in Whittier; in the eastern portion of the Kenai Peninsula Borough (excluding Seward); and in Tyonek. CEA both generates and distributes power; ; it also provides wholesale power to other Railbelt utilities.

c. Matanuska Electric Association (MEA), a cooperative, provides power for the Matanuska-Susitna Borough, and for the portions of the Municipality of Anchorage along Knik Arm northeast of Eagle River. Apart from its share in the Eklutna hydroelectric project, MEA only distributes power.

d. Homer Electric Association (HEA), a cooperative, distributes power to the western portion of the Kenai Peninsula Borough, from Homer to Kenai. It should not be impacted significantly by the 7.5 shallow crustal earthquake, but would probably be moderately impacted by the 8.0 subduction earthquake. HEA does not own generators, but it operates two generation plants for others: Bradley Lake (AEA) and Soldotna No. 1 (AEG&T)

e. Alaska Electric Generation and Transmission (AEG&T) is a generation and transmission cooperative formed by MEA and HEA. AEG&T owns Soldotna 1, a 42 MW simple cycle gas turbine unit. AEG&T provides the major power requirements for MEA and HEA; it is wholesale only.

f. Alaska Energy Authority (AEA) supports the Railbelt utilities by providing wholesale electricity through two means:

(1) Bradley Lake Hydroelectric Project provides power to all 6 retail distribution utilities within the Railbelt system. While the project is owned by AEA, it is operated by Homer Electric Association.

(2) The Railbelt Intertie, running parallel to the Parks Highway, connects the Southcentral Alaska electric utilities with the Golden Valley Electrical Association (GVEA) system in Interior Alaska. The 170-mile, 345kV transmission line runs between Willow and Healy. The Intertie allows Golden Valley Electric Association (GVEA) in Fairbanks to purchase electricity produced less expensively with lower cost energy such as natural gas and hydroelectric from the Anchorage and Kenai Peninsula utilities. Fairbanks consumers save an estimated $7 million a year, and the Intertie reduces the number of black/brownouts throughout the system. GVEA operates the northern half of the Intertie, while ML&P operates the southern half. For a severe earthquake in the Anchorage area, the Intertie would be used to supply power

to undamaged portions of the Matanuska-Susitna Borough, and to the northern portion of the affected area. Currently, much of the transmission is from south to north, due to the lower cost for Bradley Lake hydroelectric power and for natural gas-generated power from both ML&P and CEA.

g. Eklutna Lake Hydroelectric Project is jointly owned by ML&P, CEA, and MEA; all three utilities share in the output. MEA operates the facility.

h. Elmendorf AFB and Fort Richardson each have their own electrical power plant. These are primarily for internal supply, although each plant can serve as an emergency supplier for the Intertie system.

2. Other electrical utilities/suppliers in the Intertie system:

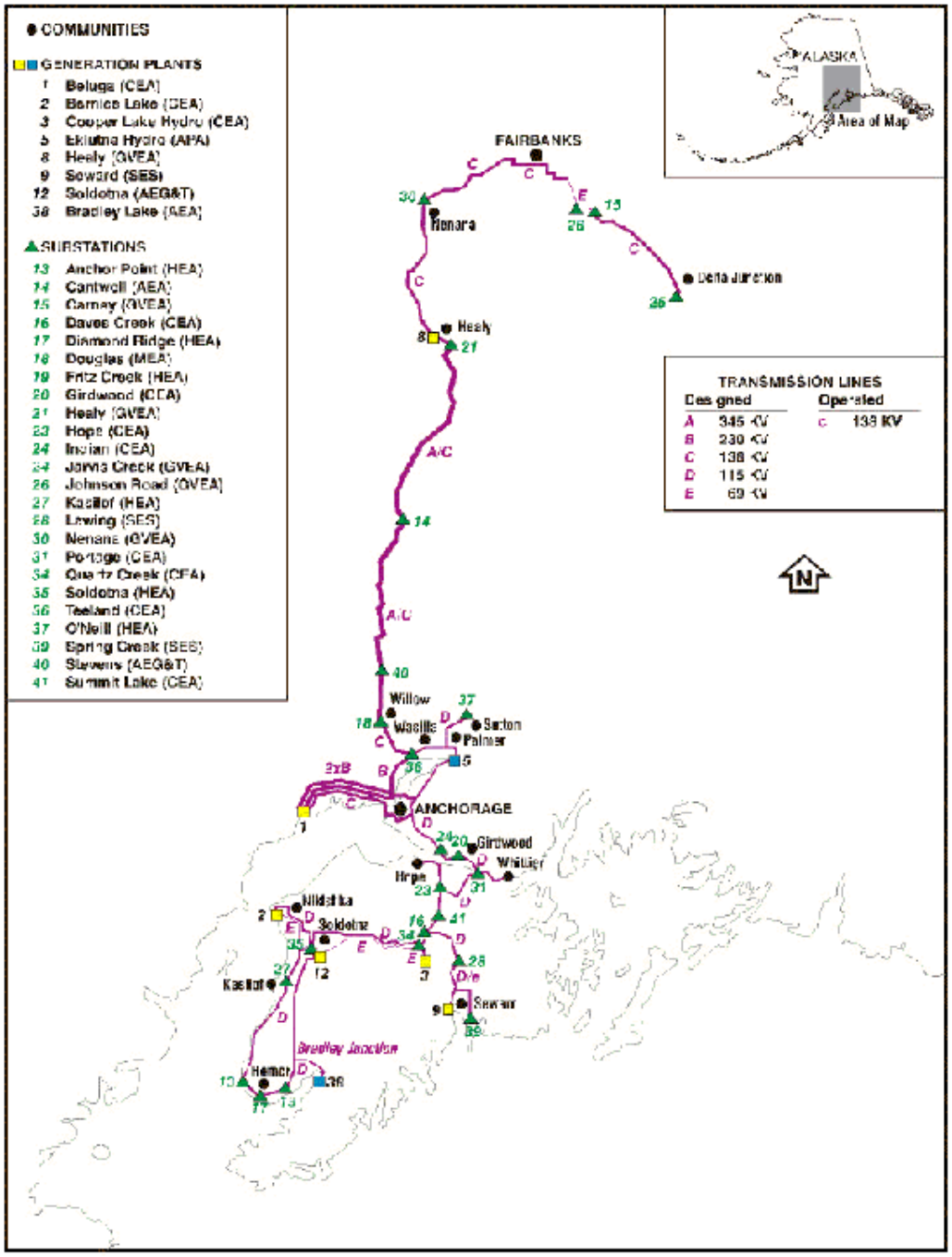
a. Golden Valley Electric Association (GVEA) provides power in Interior Alaska, from Healy through Fairbanks and down to Delta Junction. GVEA both generates and distributes power. It sometimes provides power to the other utilities, but is not a full-time wholesale source due to higher generation costs.

b. Seward Electric System (SES) is owned by and distributes power within the City of Seward. SES does not routinely generate power, but it does own a standby generating plant.

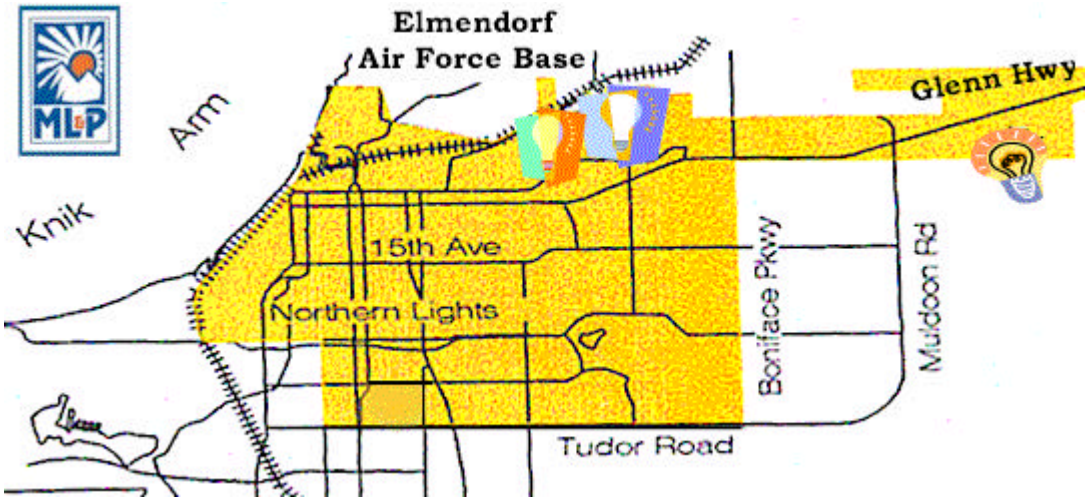
c. Aurora Energy, LLC in Fairbanks operates 4 coal-fired steam turbine units that it purchased when the City of Fairbanks sold its electrical generation and transmission facilities in 1997. Aurora is a wholesale electrical supplier; it is the only private entity among the Intertie utilities. Much of the waste heat from its plant is used to provide steam for heating buildings in the downtown Fairbanks area; it is the only certified “steam utility” in Alaska.

d. The University of Alaska Fairbanks (UAF), Eielson AFB, and Fort Wainwright each operate their own power plant. These are primarily for internal supply, although each plant can serve as an emergency supplier for the Intertie system. The UAF plant uses the steam heating systems of campus buildings for disposing of its waste heat. This means that its winter power generation capacity is far higher than the summer capacity; however, winter is also the season for peak electrical demand in Interior Alaska.

3. The remainder of the state receives its electric power from over 80 smaller utilities, including municipal owned, cooperative, and privately owned entities. In addition, the State of Alaska owns 6 other hydroelectric projects. Some of the electrical utilities serve an individual community of a few hundred residents. Even when a utility (such as Alaska Power Company or Alaska Village Electrical Cooperative, Inc.) serves a large number of communities, it does so by means of several non-connected systems which each serve one or at most a handful of communities. None of these utilities are connected to the Railbelt system, but they would provide personnel to help restore systems damaged by the earthquake.



Overview of Alaskan Railbelt Transmission System
Figure A-1



Municipal Power & Light (ML&P) Service Area

TAB B TO APPENDIX 11 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
COLD WEATHER GENERATOR OPERATIONS

The following items of concern were discussed with personnel and organizations familiar with operation of diesel engine powered equipment and generators in extreme cold weather conditions. These items are included in this Annex for use, as applicable, by the deployed emergency power mission executers.

1. Pre-Deployment Generator Modifications. Any generator that was not initially manufactured for cold weather operations, nor subsequently modified, shall have the following modifications made prior to shipment into that operating environment:

a. Most generator manufacturers who market generators for use in climates with ambient temperature of -20 degrees Fahrenheit typically install an engine block heater in the coolant system to keep the engine temperature raised to allow startup. These block heater units should circulate the water and heat the cooling system fluid/water to at least 75 degrees Fahrenheit, with 100-120 degrees Fahrenheit being more desirable. (Note: Per ONAN, for their units, the estimated price (parts only) varies from $120.00 to $480.00 depending on the size of the engine.)

b. Also installed are oil pan heaters to keep the oil warm and in a fluid state for better starting in cold weather. (NOTE: Per ONAN, for their units, the estimated price varies from $60.00 to $120.00 (parts only) depending upon the size of the engine.

c. Other typical items installed are battery heaters to maintain the cranking power of the batteries; cold batteries have a much lower maximum current output. The heaters would also keep discharged batteries from freezing. The heaters run around $45. Large units with two (2) batteries would require two (2) heaters.

d. The generator sets should come equipped with covers installed to allow the unit to be closed-up while operating to keep blowing snow from packing into the unit, and to reduce the effect of wind chill on the operating temperature of the engine.

e. Units operated in extreme cold weather are typically fueled with No. 1 Diesel versus No. 2 Diesel. Manufacturer should be consulted to ensure that no modifications to the fuel injection system or engine tuning are required for using No.1 Diesel in the unit.

2. **Deployment Considerations**. The following considerations should be made for the generator staging area, generator deployment, and any fuel storage:

a. If at all possible the staging area for generators should be in a heated, and enclosed space to limit the effects of exposure to ambient conditions on the units prior to their installation.

b. Provide trickle chargers and develop and implement a schedule to keep the generator unit batteries charged at the staging area.

c. Units that have been exposed to extreme cold ambient temperatures will require warm up prior to being able to physically start. This may require a "tent" to physically accompany the generator to its installation site. The "tent" would have to be erected around the unit and portable space or forced air heaters used to warm the unit. Units exposed to ambient air conditions for any length of time could well require up to 6 hours of exposure in this heated environment to be able to start and operate.

d. Portable, gasoline powered generators, in the 5-8 kW size range, are recommended for powering the portable heating apparatus at the installation site.

e. If No. 2 Diesel is going to be stored and used in this environment, then the fuel tanks will require heat blankets and insulation, and exposed fuel delivery lines require insulation and heat taping to ensure this fuel will remain fluid enough to flow.

f. An impermeable barrier should be placed under the unit when installed to prevent POL spills into the environment.

3. **Installation Considerations**. The following considerations should be made with respect to the installation Basic Order of Material (BOM).

a. Consider the use of "Locomotive Cable" in lieu of "MCM", or other types of cable. Locomotive cable is far more flexible in extreme cold weather conditions than MCM-type cable would be, allowing easier installation effort.

b. NOTE: If Locomotive-type cable used, then the connectors would also need to be sized for this type cable. Example – the equivalent 350 MCM cable size is 373 Locomotive, and the equivalent 500 MCM cable size is 525 Locomotive. As a result the FEMA BOM MCM-sized connectors would be undersized for use with Locomotive cable. BOM would have to be adjusted for use of Locomotive-type cable.

c. Add an electrically powered jackhammer to the installation toolkit to allow ground rod installation in frozen ground. NOTE: This will require the transportation of a small rated gasoline-powered generator to provide power for operating the jackhammer.

4. **Operational Considerations**. Some fascinating, but useless (?), trivia regarding aircraft engine operations in extreme cold weather:

a. Reciprocating engines typically quit operating around –30 degrees Fahrenheit. This could affect delivery of equipment or personnel to a remote site or around an impassible road condition via reciprocating engine powered helicopter or other transport aircraft.

b. Turbine engines typically quit operating around –50 degrees Fahrenheit. This too could affect delivery of equipment or personnel to a remote site or around an impassible road condition via turbine-engine powered helicopter or other transport aircraft. Also add the fact that you may be able to enjoy the hospitality of Alaska for a longer period of time as well.

Use ball point or roller ball pens only

ROE Number: _____

Bar Code _____

GPS Coordinates:

_____ Latitude

_____ Longitude

DEPARTMENT OF THE ARMY
RIGHT-OF-ENTRY FOR EMERGENCY POWER ACTIVITIES

_____
(Project, Installation or Activity) (Tract Number or Other Property Identification)

The undersigned, hereinafter called the "Owner/Agent", hereby grants to the United States of America, hereinafter called the "Government", right-of-entry upon the following terms and conditions:

1. The Owner/Agent hereby grants to the Government an irrevocable right to enter upon the lands hereinafter described, at any time within a period of ___( ) from the date of this instrument, for the purpose of generator placement, operation, maintenance and recovery and any other work necessary for emergency recovery activities. .

2. The right-of-entry includes the right of ingress and egress on other lands of the Owner not described below, provided such ingress and egress is necessary and not otherwise conveniently available to the Government.

3. All tools, equipment, and other property taken upon or placed upon the property by the Government shall remain the property of the Government and may be removed by the Government at any time within a reasonable period after the expiration of this permit or right-of-entry.

4. The undersigned agrees to accept responsibility for the reasonable and prudent care of the generator set while such equipment is in place pursuant to this right-of-entry.

5. If any action of the Government's employees or agents in the exercise of this right-of-entry results in environmental damage to subject real property, the Government will, at its sole discretion, either remediate such damage or make an appropriate settlement with the Owner. In no event shall such remediation or settlement exceed the fair market value of the fee title to the real property at the time immediately preceding such damage. The Government's liability under this clause is subject to the availability of appropriations for such payment, and nothing contained in this agreement may be considered as implying that Congress will at a later date appropriate funds sufficient to meet deficiencies. The provisions of this clause are without prejudice to any rights the Owner may have to make a claim under applicable laws for any damages other than those provided for herein.

6. Except as provided in paragraph 5, the undersigned agrees and warrants that it will hold and save harmless the Government of the United States, its contractors and representatives for any damage or loss of any type whatsoever including claims for negligence either to the above described property or persons situated thereon, and hereby releases, discharges and waives any and all actions, either legal or equitable, which the undersigned has or may have pursuant to this right-of-entry.

7. The property affected by this permit or right-of-entry is located in _____ and is described as follows:

WITNESS MY HAND AND SEAL this ___ day of _____, 20___ .

UNITED STATES OF AMERICA

_____
Owner/Agent Signature

_____
U.S. Army Corps of Engineers

_____
Print Name

_____
Address

_____
Phone

Use ball point or roller ball pens only

ROE Number: _____

FEMA Bar Code _____ GPS Coordinates:

_____ Latitude

_____ Longitude

Environmental Baseline Assessment Reconnaissance Report

This site is identified as an electrical generator site used during activities related to the _____ Emergency Response Operations. The size of the generator and location of the site are as follows:

A _____ kW/KVA generator is placed [address or narrative]:

_____

_____

(Sketch of location and/or placement:)

The general condition of the site is:_____

_____

_____

(Sketch site. Include oil/grease spots, etc. Attach photo.):

_____ I concur with the above stated site condition.

_____ I do NOT concur with the above, because:

UNITED STATES OF AMERICA

_____
Owner/Agent Signature

_____

U.S. Army Corps of Engineers

_____
Print Name

_____
Address

_____

U.S. Army Corps of Engineers

RELEASE OF LIABILITY

Emergency Power

(NOTE: To be filled out at time of generator set recovery)

Effective _____, 20_____, the owner hereby releases and forever discharges the Government, its officers, agents and employees from any and all claims for damages of restoration, except environmental damages pursuant to paragraph 5 of Right-of-Entry No. _____ and from all liability that may arise out of generator placement, operation, maintenance and recovery, and the occupation by the Government of the property during FEMA declared natural disaster _____ Emergency Response and Recovery Operations, except in the case of unpaid rent.

_____
Signature

_____
Print name

_____
Address

_____
Phone Number

Following to be filled out if no environmental damages or after environmental restoration/remediation completed:

Owner acknowledges that subject property, described in Right-of-Entry No. _____ has been remediated, as necessary, to acceptable environmental standards, and further releases the Government from any and all claims arising out of or relating to such remediation.

_____
Signature

_____
Print name

TAB D TO APPENDIX 11 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
REPORTS

1. **Progress Charts.** The POA Commander or the ERRO Commander, as the situation warrants, will determine the map(s) or chart(s) they desire to see related to power mission execution status. The following color scheme is recommended for use in any graphical display of generator mission execution status:

= Red = Generator assessment requested, but not conducted
= Yellow = Generator assessment conducted, but generator not installed
= Green = Generator Installed
= Blue = Power restored, generator installation not required

a. The locations of these assessment and/or installation sites will be plotted initially using the street address provided by the State of Alaska/FEMA, and ultimately by the Global Positioning System (GPS) coordinates obtained by the assessment/installation teams.

b. Any chart prepared to brief and/or track the emergency power mission status shall include the established Emergency Power Essential Elements of Information (EEIs) as follows:

Total Number of Requests for Assessments (Cumulative to Date)	
Requests for Assessments (Last 24 Hours)	
Total Number of Assessments Completed to Date (Cumulative to Date)	
Assessments Completed (Last 24 Hours)	
Maximum Number of Generators Needed From Assessments	
Generator Installations No Longer Required	
Generator Installations Actually Required	
Generators Installed Total (Cumulative to Date)	
Generators Installed Today	
Staging Area Generator Inventory	
Generators Needed	
Generators Deployed	

c. The chart numbers are generated from within the proprietary USACE Emergency Power Information System (EPIS) software program Englink Limited Transmission (LT). Using this as a sole source will ensure consistent mission status information availability within USACE and as reported to FEMA.

d. Any other mission status information desired can follow the information presented in the above chart. Additional information desired by USACE command staff may include items such as mission personnel status, and/or the status of mission funding to include funds committed, obligated, expended, and available.

Power Assessment Form:

Power Assessment Work Order

Mission#: _____ Facility Name: _____ Remarks:

Alternate Mission #: _____ Location: _____

City: _____ State: _____

Date Received: _____

County/Municipality: _____

Mission Type: _____ Building Use: _____

FEMA Priority: _____

Agency Contact Information:

Point of Contact: _____

Agency: _____

Phone: _____

Fax _____

E-Mail: _____

Pre-Assessment (User) Site Data

Power (kw) _____ Voltage _____ Amperage _____

Phase (1/3) _____

Assessment Details

Team Name(s): _____

Assessment Date: _____

Main Breaker Current (Amps): _____

# of Service Drops: _____

Transformer Rating (kVA): _____

Site Voltage (Volts): _____

Feeder Cable Size: _____

Service Drop Type: Overhead / Underground

Transformer Mount Type: Pad / Pole

Backup / Existing Generator Information (if applicable):

Power (kW): _____ Voltage (V): _____

Internal Fuel Capacity (Gal): _____ Hours: _____

Fuel Type: _____ Phase: _____

Latitude (North):

Degrees: _____

Minutes: _____

Seconds: _____

_____ N

Longitude (West):

Degrees: _____

Minutes: _____

Seconds: _____

_____ W

Needed Generator Information:

Power (kW): _____

Voltage: _____

Phase(s): _____

Assessment Remarks:

BOM:	Category	Description	Qty Required	Unit

249th Work Assessment Form:

(Note: the original is a very wide Excel spreadsheet; the following screen shots show the information that is contained in a worksheet.

Microsoft Excel - Blank 249th Master.xls

File Edit View Insert Format Tools Data Window Help

Arial 10 B I U 75%

L3 =

	A	B	C	D	E	F	G
3	Mission #						
4	TML	Alternate	Date	Mission	FEMA	Facility Name	Location
5	ID#	Mission #	Received	Type	Priorties	Department/Use	Address or Site
6							
7							
8							

	H	I	J	K	L	M	N	O	P
3									
4								Year	#
5	Zip Code	City	State	County/Municipality	Building Use	Assessment:	Remarks	Built	Floors
6									
7									
8									

	Q	R	S	T	U	V	W	X	Y	Z	AA
3								Pre-Assessment Data			
4	Total	Building	Wall	Heat &	Roof			(User) Site Data			
5	SF	Class	Type	A/Cond	Type		Power (kW)	Voltage	Amperage	Phase (1/3)	
6											
7											

	AA	AB	AC	AD	AE	AF	AG
3				**Agency Contact Information**			
4							
5		Point of Contact	Agency	Phone #	Fax	E-Mail	
6							
7							

	AG	AH	AI	AJ	AK	AL	AM	AN	AO
3				**Assessment Details**					
4				Main Breaker	Site Voltage	# of Service	Feeder Cable	X-former Rating	Service Drop Type
5		Team Names	Assessment Date	Current (amps)	(volts)	Drops	Size	(kVA)	Over/Under
6									
7									

	AP	AQ	AR	AS	AT	AU	AV	AW	AX
3			**Back-up/ Existing Generator Information**						
4	X-former Mount Type		Power	Internal Fuel	Fuel Type	Voltage	Hours	Phase	
5	Pad/Pole		(kW)	Capacity (Gal)		(V)			
6									
7									

	AY	AZ	BA	BB	BC	BD	BE	BF
3	Latitude (North)				Longitude (West)			Elev.
4	Degrees	Minutes	Seconds		Degrees	Minutes	Seconds	Feet
5								
6								

	BG	BH	BI	BJ	BN	BO
3	Needed generator Information				Assessment Remarks	
4		Power	Voltage	Phase(s)		
5		(kW)				
6						
7						

	BO	BP	BQ	BR	BS	BT
3			BOM			
4		Category	Description	Qty	Unit	
5				Required		
6						
7						

APPENDIX 12 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
EMERGENCY DRINKING WATER

REFERENCES

a. **Maps and Charts**. See Annex B.

b. **Documents**
(1) See Basic Plan

1. **SITUATION**

a. **General**. The Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5121 et seq.)(88 Stat. 143)(The Stafford Act), authorizes the President (FEMA per Executive Order 12673) to provide financial and other forms of assistance to state and local governments following presidentially declared major disasters and emergencies. The Federal Response Plan (FRP), a signed agreement among 27 federal departments and agencies, describes the mechanism and structure by which the federal government mobilizes resources and conducts activities to respond to a major disaster or emergency that overwhelms the capabilities of state and local governments. The FRP organizes the types of federal response assistance that a state or local government is most likely to need under 12 Emergency Support Functions (ESF's), each of which has a designated primary agency. The U. S. Army Corps of Engineers (USACE) is designated as the primary agency for ESF #3, Public Works and Engineering. One of the typical missions under ESF #3 is to provide for humanitarian support, including the purchase and delivery of potable water.

b. **Threat**. Two events are considered probable in the immediate future:

(1) A magnitude 7.5 shallow crustal earthquake within the Municipality of Anchorage, with significant damage occurring within the Matanuska-Susitna Borough. This earthquake could occur on the Border Ranges Fault (a known fault, but current activity matter of debate) or on an unknown fault west of the Border Ranges Fault.

(2) A magnitude 8.0 subduction zone earthquake on the portion of the Alaska-Aleutian Megathrust Fault that runs directly under Anchorage. The failure zone would probably extend to the Sterling Highway area within the Kenai Peninsula Borough, and could also extend into the Palmer area in the Matanuska-Susitna Borough. The earthquake would cause major damages beyond the failure zone. The failure zone would extend northwest from a portion of the fault segment that was involved in the 1964 Good Friday Earthquake.

c. **Response Organizations**

(1) **Federal:** FEMA will coordinate the Federal response, in accordance with the Federal Response Plan. FEMA is responsible for water mission assignment and funding.

(2) **Corps of Engineers:** The following USACE districts have Water Planning and Response Teams (PRTs) trained and available for emergency response on a rotating basis: The teams are normally deployed for up to 30 days.

LRC Great Lakes & Ohio River Division, Chicago District
MVK Mississippi Valley Division, Vicksburg District
NAE North Atlantic Division, New England District
NWK Northwestern Division, Kansas City District
SAW South Atlantic Division, Wilmington District
SPN South Pacific Division, San Francisco District
SWL Southwestern Division, Little Rock District

Current rotational status can be obtained from Englink Interactive at https://englink.usace.army.mil/

Once deployed the Water PRT would assume responsibility for the timely execution of the water mission.

Currently none of the water teams are pre-equipped for cold weather operations. There is a proposal to issue cold weather clothing to certain teams prior to activation.

(3) **State and Local Governments:** The Alaska Division of Emergency Services (ADES) will manage the state's disaster response activities through its Emergency Coordination Center at Camp Denali (Fort Richardson). All state agencies participate in the ECC. The Municipality of Anchorage, the Matanuska-Susitna Borough, and the Kenai Peninsula Borough all have emergency management organizations that would coordinate local responses. Advanced preparation is critical to the successful execution of the water mission. In either event scenario, state and local government should be prepared to provide the following:

a) Identify potential staging areas and water distribution sites. Staging areas and distribution sites should be fenced and lighted. The staging area should have climate control warehouse space and be paved and of adequate size to receive up to 100 tractor trailers per day. Distribution sites should be paved and of adequate size to accommodate delivery trucks and the public.
b) Provide 24-hour security at water distribution sites for possible crowd control and to prevent theft.
c) Provide status of critical transportation routes, and if necessary police escorts through heavily congested areas.
d) Provide logistical support at water distribution sites to accept deliveries and distribute water to the general public. National Guard can be used to assist at distribution sites and transport water to remote distribution sites.

d. **Assumptions**

(1) Magnitude 7.5 shallow crustal earthquake within the Municipality of Anchorage

a) In the event of a magnitude 7.5 shallow crustal earthquake, an estimated 81,519 households would be without potable water. Extensive water main damage in the winter could result in slow restoration of service, and an estimated 78,010 households would be without potable water for 90 days after the event.
b) Water demands will exceed state and local government capabilities.
c) After about 7 days without electrical power and potable water, and projections of extended outages (up to 90 days), approximately 20 percent of the residents in the disaster area would elect to evacuate.
d) Climate control warehouse space is available at the airport, seaport and staging area.

(2) Magnitude 8.0 subduction zone earthquake on the portion of the Alaska-Aleutian Megathrust Fault that runs directly under Anchorage

a) A magnitude 8.0 subduction zone earthquake is estimated to leave approximately 17,106 households without potable water. Seven days after the event, approximately 5,643 households would remain without potable water. Service is estimated to be completely restored in about 14 days.
b) Initial water demands will exceed state and local government capabilities.
c) Residents would not evacuate the disaster area following this event.
d) Climate control warehouse space is available at the airport and staging area.

(3) Water Need Calculations

a) Based on household and population data, assume 3 people per household.
b) Assume water consumption of 5 liters per person per day.
c) Conversion factor for converting gallons to liters is 1gallon equals 3.79 liters.

2. **MISSION**. The mission is to provide an emergency supply of potable water, bottled and or bulk, to include procurement, temporary storage and transportation to distribution sites in the impacted areas. State and local authorities would be responsible for distribution to the general public and security at distribution sites. USACE will attempt to fulfill requirements for drinking water by first utilizing bottled drinking water stored near the disaster location, donated water, and bottled or bulk water supplied by other federal agencies. If water from those sources is inadequate to meet the water demands, FEMA may task USACE to purchase and deliver additional water.

3. **EXECUTION**

a. **Commander's Intent.** In either event scenario emergency response activities would be beyond the available resources and capability of Alaska District. The initial assembly of local personnel and response teams would determine the likelihood of a water mission. POD would request HQUSACE to deploy an emergency Water PRT to execute the mission.

It is highly recommended that the impacted district assign a mission coordinator and liaison to assist not only the Water PRT, but all PRTs regarding upward reporting of mission status and situational awareness.

b. **Concept of Operations** Each Water PRT is required to deploy within six (6) hours of notification and be prepared to stay up to 30 days. Once deployed, the Water PRT would assume responsibility for the execution of the water mission.

The staffing of the PRTs is designed to provide the minimum number of personnel to effectively and efficiently manage and support the execution of a water mission in concert with the responding Emergency Response and Recovery Office (ERRO) command and control structure. The team configuration is designed to staff the three operational functions required to execute a major Federal Response Plan (FRP) mission. These three operational functions are the Emergency Support Function (ESF) #3 element at the Disaster Field Office (DFO), Emergency Response and Recovery Office (ERRO), and the Logistical Staging Operations area(s).

The Emergency Water PRT staffing is as follows**:**

Action Officer	DFO
Mission Manager	ERRO
Mission Specialist	ERRO
Contract Specialist	ERRO
Logistics Team Member	STAGING AREA

The Action Officer (AO) works in the ESF#3 element in the DFO and is responsible for fully coordinating emergency water mission requirements with FEMA, state and local governments, and other ESF agencies to determine the total scope of the mission. The AO represents the Division forward with FEMA and provides tasking to the ERRO/District. The AO is the Corps liaison with FEMA and all DFO agencies for the water mission. In addition, the AO will serve as the primary liaison between the DFO and ERRO on all activities relating to mission execution.

The Mission Manager (MM) works in the ERRO and serves as the Project Manager for mission execution. The Mission Manager is also responsible for overall team coordination to ensure the timely procurement, delivery and tracking of water to all staging areas and possible distribution sites. The MM works with the Mission and Contract Specialists to prepare scopes of work, cost estimates, procurement requirements, delivery schedules, tracking of mission funds and reporting.

The Mission Specialist (MS) works in the ERRO and assists the MM.

Logistics Team Member (LTM) works at the staging area supporting both the Water PRT and Logistics PRT. The LTM is responsible for receiving the water at the staging area, inventory management and storage, and quality assurance measures. The LTM coordinates with the Mission Manager to facilitate efficient water delivery to distribution sites and provides status reports as to deliveries and inventory.

Contract Specialist (CS) works in the ERRO and is responsible for all aspects of contracting transactions for the procurement, storage and transportation of water during

declared emergency conditions in coordination with Contracting Division of the impacted district. The CS serves as liaison between the PRT, the Advanced Contracting Initiative (ACI) contractor and Contracting Division of the impacted district. The CS monitors actual water deliveries to ensure substantial performance by the ACI contractor.

In the event of a magnitude 7.5 shallow crustal earthquake, the water mission is estimated to last several months and would require transition of the water mission from one PRT to another. A smooth and efficient transition will ensure the water mission continues without stoppage and that the new team is quickly acclimated to their new environment and workload requirement. A minimum of three days overlap of PRT's is required to transition work to the new team.

In the event of a magnitude 8.0 subduction zone earthquake, the water mission is estimated to last about 14 days and would not require transition of the water mission to another PRT.

Mission termination occurs when adequate supplies of potable water are available to the general public via commercial sources and or by public and private systems as determined by FEMA or when state and local entities can handle remaining emergency water needs. Upon receipt of a water mission closeout letter from FEMA, the last departing PRT must ensure all mission documentation is complete for proper financial closeout by Alaska District.

c. **Tasks.**

HQUSACE will notify deploying District's EOC of team deployment. Due to the extended travel time from most parts of CONUS to Anchorage, Alaska, some initial mission coordination may be required during team deployment. A backup Action Officer and Contract Specialist should be available at the deploying district to perform initial coordination with FEMA and POD EOC staff while the team deploys. The backup Contract Specialist should alert the ACI contractor of possible mission requirements.

Once deployed theWater PRT would assume responsibility for the timely execution of the water mission. The PRT would assist FEMA in estimating water needs and preparing a Request for Federal Assistance (RFA) for mission assignment. The Action Officer plays a key role in coordinating the mission requirements with FEMA, state and local governments, and other ESF agencies to determine the total scope of the mission. The existing National Water Contract, solicited under the Advance Contracting Initiative, would be used to procure, transport and deliver bottled water. The ACI contractor is responsible for delivering water by whatever means of transportation is necessary to meet the required timeframes.

During execution of the water mission the PRT would track deliveries, assess contractor performance and monitor mission funding. FEMA may also task the team to track water provided by other Federal agencies as well as donated water. Water tracking spreadsheet and delivery forms can be found in the Water Mission Guide located on ENGLink. The

team would also continue to assess future water needs based on current consumption rates and status of recover efforts as coordinated with state and local governments. ENGLink would be used for upward reporting of water delivery quantities and mission status. The Water PRT Mission Manager would brief ERRO staff on mission status. The Water PRT Action Officer would also provide Essential Elements of Information (EEI's) to FEMA at the DFO.

Magnitude 7.5 Shallow Crustal Earthquake In this event scenario, water demands are estimated to be the following:

DAY	WATER DEMAND
1 – 7	1,260,000 liters per day
8 – 30	1,008,000 liters per day
31 – 60	972,000 liters per day
61 – 90	936,000 liters per day
After 90	Model data not available

Continuous coordination with FEMA, state and local governments and other ESF is critical due to the size and complexity of this water mission. The Water PRT needs to accurately forecast initial water demands far enough in advance to allow the ACI contractor sufficient lead time (approximately 10 days) to arrange sea transportation. Continuous assessment of future water requirements is needed throughout the water mission. The team needs to anticipate possible mission termination to allow sufficient time to stop additional water from entering the pipeline and minimize the amount of excess water.

ACI contractor would use air transportation, flying into either Alaska International Airport or Elmendorf AFB to meet the first ten days of water deliveries. Initial water needs would require about 15 cargo plane (747 type) deliveries per day. After ten days, needs could be met by 1 barge delivery every 5 days into either the Port of Anchorage or Seward. The ACI contractor could be used to transport water from the airport and seaport to distribution sites. The number of distribution sites should be kept to the absolute minimum necessary to allow efficient distribution of water to the general public by state and local government. Providing bottled drinking water for the first ninety days of this mission is estimated to cost approximately $100 million dollars. Approximately $40 million would be needed to meet the first nine days of emergency water needs under the existing ACI contract. The price for delivering bottled water drops substantially after day nine.

Because of the relatively high cost of providing bottled drinking water over an extended period of time, FEMA may utilize other means of providing potable water such as bulk and reverse osmosis.

Requirements for bulk water cannot be determined in sufficient detail to enable pricing in advance. The cost of providing bulk water varies significantly based on the source of the water and method of transportation. If tasked by FEMA, the Water PRT could negotiate

with the ACI contractor and other bulk water suppliers to define specific contract requirements and pricing. Eklutna Lake is one possible source of potable water; however, ground transportation routes to Anchorage are likely to be disrupted for several days. Options for temporary storage of bulk water at the distribution sites would include tanker trucks and or sanitized containers in a climate controlled and secured facility. Bulk water requires continuous testing at the source, delivery point and storage containers. Tanker trucks and other storage containers need to be fitted with multiple bibs for filling individual containers. This method of distribution is extremely time consuming, especially considering the nearly quarter of a million people to be served.

The future ACI water contract will include a line item for providing bulk water at a cost "to be negotiated" based on specific location and delivery order requirements.

Reverse Osmosis Water Purification Units (ROWPU) can purify large quantities of water. ROWPU are available for purchase or lease commercially or may be government furnished. Government furnished ROWPU include those available from military (active and National Guard) units. A military ROWPU detachment is typically equipped with ten ROWPU, each capable of producing 3,000 gallons of potable water per hour from a fresh water source and about half this amount using a salt water source. Approximately 5 to ten of these units would be needed to fulfill the daily emergency water requirements for the Anchorage area depending on the source of the water. Access to National Guard ROWPU is through the State that is responsible for mobilizing their National Guard ROWPU. Any requirement for active military ROWPU should be coordinated through the DFO by the ESF #3 Action Officer. Similar to bulk water supplies, storage, testing and distribution of purified water would create additional logistical problems especially during winter conditions.

ESF #8, Health & Medical Services, may assist in coordination of any bulk water testing that may be required. While they may not be able to do the actual testing, they can provide information on contacting labs to perform the testing. For bulk water, ESF #8 can assist in coordinating with the state to determine safe public water systems for filling tanker trucks.

Magnitude 8.0 Subduction Zone Earthquake In this event scenario, water demands are estimated to be the following:

DAY	WATER DEMAND
1 – 3	270,000 liters per day
4 – 6	180,000 liters per day
7 – 9	90,000 liters per day
10 – 14	Additional water could be ordered if necessary, anticipate minimal needs. Water needs should be within the capability of state and local governments or could be met with excess inventory

Depending on road conditions, distances to nearest water suppliers and availability of trucking, the ACI contractor would first attempt to meet water requirements using ground transportation. If unable to meet water deliveries in the timeframe required, the ACI contractor would use air transportation flying into either Anchorage International Airport or Elmendorf AFB. This event would require about 3 cargo plane (747 type) deliveries per day for the first 72 hours. As potable water is restored to households, water demands are estimated to drop to about 2 cargo plane deliveries per day during days 4 – 6, and then 1 cargo plane per day until mission termination. The ACI contractor could be used to transport water from the airport to distribution sites. Providing bottled drinking water for this mission, is estimated to cost approximately $5 to $6 million dollars.

Water transportation would not be anticipated for this event as barge delivery to Anchorage would require approximately 10 days lead time and only minimal water demands would remain at that time.

4. **ADMINISTRATION AND LOGISTICS.**

a. Concept of Support. The deployed Water PRT is mostly self-sufficient, but will require the following ERRO support to successfully execute the water mission:

(1) Emergency Manager
- (a) Accept mission funding from FEMA and ensure timely entry in CEFMS.
- (b) Process MIPR to deploying Water PRT's District.
- (c) Sign Water PRT time sheets.
- (d) Provide CEFMS approval support.
- (e) Provide a Mission Coordinator to assist upward reporting and act as a liaison between PRT and ERRO staff.

(2) Resource Management
- (a) Honolulu District will provide CEFMS support to Alaska District.
- (b) The Water PRT will need CEFMS support from Honolulu District to enter various PR&Cs into Alaska District's CEFMS database for execution of the water mission.

(3) Information Management
- (a) Computer and communications support.

(4) Real Estate
- (a) Obtain rights-of-entry at staging and distribution sites.

(5) Contracting Division
- (a) Contracting Officer's support to enter contract data/task order into local Standard Procurement System (SPS) and sign contractual documents.

b. Logistics. The deploying Water PRT will need logistical support on availability of local hotels and rental cars. The team will also require office space and equipment at the ERRO for 3 team members (Mission Manager, Mission Specialist and Contract Specialist). Prior to deployment members of the Water PRT should be deployed with EM shirts, jackets/windbreakers, hats and cold weather gear. All members should have

their Government ID, travel credit card, CEFMS card, and at least $200 in cash. Logistics staff may need to supplement additional cold weather gear to deploying team members.

c. Personnel. In either event scenario, additional logistical personnel support will be needed to staff the staging area and water distribution sites. The Logistics Team Member would coordinate water deliveries and distribution at the staging area. Additional logistical support would be required for 24-hour operation. A minimum of 2 logistic specialists is needed at each water distribution site. Additional staff may be required based on hours of operation and number of daily deliveries.

d. Public Affairs. Should be proactive in supporting emergency water operations. Activities include preparing notice of water distribution locations and schedules. Notices should be coordinated with Water Mission Manager to ensure accuracy and timeliness of information.

5. **COMMAND AND SIGNAL.**

a. Command Relationships.

(1)The Water PRT (Mission Manager, Mission Specialist and Contract Specialist) work for the ERRO Commander in support of mission execution.

(2) The Water PRT Action Officer (AO) works at the DFO in support of the ESF#3 Team Leader to coordinate mission requirements.

(3) The Water PRT Logistics Team Member works at the staging area and reports to the PRT Mission Manager. The Logistics Member also supports the National Logistics Team.

b. Command Posts. The staffing of the PRTs is designed to provide the minimum number of personnel to effectively and efficiently manage and support the execution of a water mission in concert with the responding Emergency Response and Recovery Office (ERRO) command and control structure. The team configuration is designed to staff the three operational functions required to execute a major Federal Response Plan (FRP) mission. These three operational functions are the Emergency Support Function (ESF) #3 element at the Disaster Field Office (DFO), Emergency Response and Recovery Office (ERRO), and the Logistical Staging Operations area(s).

The Emergency Water PRT staffing is as follows**:**

Action Officer	DFO
Mission Manager	ERRO
Mission Specialist	ERRO
Contract Specialist	ERRO
Logistics Team Member	STAGING AREA

Additional logistical support personnel would be stationed at the distribution sites.

c. Succession to Command. The Action, State, and the other ESFs to determine the total scope of the mission. The Action Officer then tasks the Mission Manager at ERRO/District to fulfill the mission requirements. Mission Manager coordinates procurement and shipment of water to the staging area and distribution sites.

d. Signal. Fly-Away Kits are provided to most members of the team. Included in the kit are: laptop with peripheral accessories, portable printer with cable, CEFMS card reader, cell phone/back up battery, pager, calculator and office supplies.

TAB A TO APPENDIX 12 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
INITIAL ACTIONS FOR A WATER MISSION (potential or actual)

1. Initial ESF #3 Alaska staff (Initial Operating Facility-IOF, at Camp Denali)

a. Coordinate with State to determine potential mission:
- Need for water (damage to systems, etc)
- Potential length of mission (time for systems to be restored)
  - Potential number of persons requiring water (will increase during the first few days, as people report to shelters and/or use up stored water)
  - Condition of the two major airports in Anchorage (Elmendorf AFB and Anchorage International); condition of Merrill Field and Campbell Tract Field if neither major airport is usable.
  - Condition of local routes and distribution points (for distribution of water)
  - Priorities for distribution of water
    - Determined by State if multiple Boroughs/Municipalities involved
    - Determined by Borough/Municipality for localized distribution (by the State for Unorganized Borough)
  - Availability of above-freezing storage
  - Capability of Port of Anchorage to handle barge transport if it appears water mission will last longer than 2 weeks. Note: this includes ice conditions in Cook Inlet as well as port capabilities.
  - Future availability of road/railroad access to alternative seaports-Whittier/Kenai Peninsula area and Valdez.

b. Transmit requirements and information through Federal Liaison Officer (FLO) to Region X ROC

c. Once water mission has been issued, coordinate all information with the Water PRT, ROC initial staff, POD EOC, and FLO. Coordinate distribution aspects with the on-scene Federal logistics team.

2. ROC initial staff (from NWS?)

a. Advise POD EOC of situation data which impacts potential water mission

b. Coordinate with FEMA X for defining water mission, using prescripted missions

c. Once FEMA X issues water the mission
- Receive mission from FEMA X
- Prepare written mission summary if verbal mission was received
- Forward mission to POD EOC
- Coordinate technical details with designated Water PRT

3. POD EOC

a. Receive notice of mission from liaison at FEMA X ROC.

b. Contact HQ for activation of Water PRT

c. Transmit funding to appropriate district for Water PRT

4. HQUSACE

a. Upon receiving notice of a major earthquake in Anchorage, place the top-priority water PRT [or the top-priority winter-equipped water PRT, when established] on alert.

b. Coordinate with FEMA HQ for possible missions issued at national level.
c. Activate PRT upon notification from POD (or FEMA HQ) that a water mission assignment has been issued.

5. PRT District

a. Upon receiving alert, insure that all members have appropriate clothing, etc. for deployment to Anchorage. If not, procure locally (if situation permits) or coordinate with NWS logistics.
b. Deploy PRT upon notice from HQUSACE
c. Maintain one subject matter expert (trained Action Officer or Mission Manager) and one contracting representative at EOC to temporarily manage mission while primary team is deploying.

6. Logistics in Alaska

a. Be prepared to process any shipments of water that arrive prior to the arrival of PRT logistics representative.
b. Determine whether or not we have a Federal declaration (emergency or major disaster)
    YES-prepare to distribute water
    NO-water needs to be stored on Federal property (including leased areas)
c. Identify source of water-from Federal stockpile or purchased under mission authority
    From Federal stockpile: Use spreadsheet
    Purchased under mission authority: Use the forms from mission guide
d. Coordinate with IOF/SECC to determine destination and shipping methods for water.
e. Obtain appropriate receipt for ALL water distributed.

APPENDIX 13 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
EMERGENCY ACCESS

REFERENCES

a. **Maps and Charts**. See Annex B.

b. **Documents**
(1) See Basic Plan

1. **SITUATION**

a. **General**. Land access to the Anchorage area is limited to two major routes: the Glenn Highway along Knik Arm, and the Seward Highway along Turnagain Arm. Both access routes include some areas of soft ground (although the Seward Highway has been partially relocated since 1964), and both were damaged during the 1964 Earthquake. The Seward Highway and the Alaska Railroad along Turnagain Arm are both subject to avalanches in winter. Within the Municipality of Anchorage, many of the road intersections and railroad crossings have been converted from ground level to overpasses since 1964.In addition, some access routes are vulnerable to slope failures.

b. **Threat**. Either planning earthquake would cause major damage to local road systems. The subduction zone earthquake has the greater potential for general ground failures, due to the greater duration of shaking. However, the Border Ranges Fault (shallow crustal earthquake) runs across the Seward Highway and the Alaska Railroad near Potter Marsh, and also runs closely parallel to the Glenn Highway and the Alaska Railroad in the Eagle River/Chugiak area.

c. **Response Organizations**
(1) The Alaska Department of Transportation and Public Facilities has responsibility for maintaining the intercity highways, as well as most major roads within the Municipality of Anchorage. Anchorage is the site of the department's largest regional headquarters. However, the Department headquarters, and the other two regional headquarters, are outside of the impacted area.
(2) The Alaska Railroad Corporation has responsibility for maintaining the Alaska Railroad. This is a state-owned corporation and it is classified as a public entity under FEMA's programs. In 1964, with heavy damage throughout the Cook Inlet region, the railroad restored freight service from Anchorage to Fairbanks within 10 days, passenger service to Fairbanks within 15 days, and freight service from Whitter to Anchorage within 24 days.
(3) Within the MOA, the Street Maintenance Department is responsible for maintaining local roads within the Anchorage Roads and Drainage Service Area (ARDSA), which is primarily the Anchorage Bowl area. The Department also oversees the maintenance of roads in the rest of Anchorage by the local road service areas. ARDSA has over 600 miles of roadway. The Chugiak/Birchwood/Eagle River Rural

Road Service Area (CBERRRSA) has over 175 miles of roadway; other Limited Road Service Areas (LRSA) are spread across the hillside and Girdwood. Each Limited Road Service Area has an elected board of supervisors responsible for the supervision and direction of road services by local contractors.

(4) The Matanuska-Susitna Borough, the Kenai Peninsula Borough, incorporated cities within those two boroughs, and the City of Whittier are responsible for maintaining their own local roads. These agencies are staffed to handle routine maintenance, and could be overwhelmed by the damages from a major earthquake.

d. **Assumptions**

(1) Immediate response will be required to reestablish road and railroad access into the impacted areas, as well as to reestablish internal access within the impacted areas.

(2) The Alaska Department of Transportation and Public Facilities, the Alaska Railroad, and the Municipality of Anchorage will be able to handle a significant portion of the damage through their own organizations. Federal assistance will involve the most difficult problems and/or extensive damage.

(3) Other local governments, with smaller staffs, are more likely to require assistance.

(4) Much of the damage to transportation links will occur in wetlands, and thus will require major environmental coordination.

(5) Winter construction techniques and Arctic Engineering design considerations will be major factors.

2. **MISSION**. To support response and recovery efforts by providing emergency access for response efforts, and by providing interim access for recovery efforts.

3. **EXECUTION**

a. **Commander's Intent.** In the event of a catastrophic earthquake in the Anchorage area, the Corps of Engineers would provide temporary restoration of existing access routes and/or temporary alternate access routes.

b. **Concept of Operations.**

(1) The State of Alaska will evaluate the situation and request assistance if the requirements are beyond local and state capabilities.

(2) The Emergency Access PRT will be put on alert immediately following an earthquake, but will not be deployed until there is a probable mission.

c. **Tasks.**

4. **ADMINISTRATION AND LOGISTICS.**

a. Concept of Support.

b. Logistics.
c. Personnel.
d. Public Affairs.

5. **COMMAND AND SIGNAL.**

a. Command Relationships. See Basic Plan

b. Command Posts. See Basic Plan

c. Succession to Command. See Basic Plan

d. Signal. See Annex K for detailed communications information

INFORMATION TO BE MERGED

1. **REQUIREMENT.**

a. Emergency access will probably involve two main efforts:

(1) Temporary bridging to cross streams. In some cases, this could require temporary roads to get to a low level bridge site.

(2) Repair or replacement of roads that were damaged by soils failure.

b. Because the Alaska Department of Transportation and Public Facilities has very strong capabilities (their headquarters and two of their regional offices are outside of the impacted area), missions received by USACE will probably involve locations with severe difficulties and/or a situation of very widespread damage. Equipment availability will be a concern. While there is a very robust construction industry in the area, many of the resources will probably be committed by the time a mission assignment is issued.

2. **SPECIAL CONCERNS.**

a. Design work must consider cold weather factors that engineers from warm climates will not be familiar with. (Arctic Engineering is a special requirement for civil engineer registration in Alaska.)

b. Environmental aspects of the work must be considered. Much of the work will be in wetlands.

APPENDIX 14 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
TEMPORARY HOUSING

REFERENCES

a. **Maps and Charts**. See basic plan.

b. **Documents**.
(1) See basic plan.
(2) USACE Temporary Housing Mission Guide

1. SITUATION.

a. **General.** See basic plan and Annex B. The most critical challenge facing emergency responders following a major earthquake during winter is providing spontaneous shelter for disaster victims from the sub-freezing temperatures. During the winter months in Anchorage, earthquake victims exposed to the weather risk hypothermia in 12 hours or less.

(1) The general consensus is that victims will be sheltered in schools. However, the HAZUS model for the 7.5 shallow crustal earthquake estimates all 168 schools will sustain moderate or greater damage and 122 of these schools will have complete damage. The model also estimates all 7 hospitals will receive moderate or greater damage and 6 will have complete damage.

(2) The HAZUS model estimates that 15,173 households will be displaced due to the earthquake. Of these, 9,718 people (out of a total population of 226,300) will seek temporary shelter in public shelters.

(3) Additionally, suitable land space is not available for a large temporary housing mission except on Elmendorf AFB, Fort Richardson and in the Campbell Airport area.

b. **Threat**. See basic plan and Appendix B. Planning in this appendix is based on the worst-case scenario, a 7.5 shallow crustal earthquake occurring during the winter months. Disaster response and recovery operations that are detailed here may be scaled back in the case of a less severe earthquake.

c. **Response Organizations.** See basic plan. U.S. Army Corps of Engineers (USACE) Temporary Housing Planning and Response Teams (PRTs) will be activated to install temporary housing. USACE Temporary Roofing PRTs will be activated to contract for repairing structurally sound buildings and residences to be re-occupied by disaster victims. The local Emergency Management Agency (EMA) will activate trained structural engineers (see section 4.c, Personnel) to staff Repair Sweep Teams, along with Temporary Roofing PRT personnel. Repair Sweep Teams are detailed in Attachment D.

d. **Assumptions.**

(1) See basic plan.

(2) Disaster victims will require immediate sheltering that may only partially be supplied by undamaged habitable building space. Large hangers at Elmendorf Air Force Base may be used for critical spontaneous shelter, however rapidly deployable air-supported structures will be necessary to meet emergency sheltering needs.

(3) Large air-supported structures may initially be used as emergency shelters. Later the same structures will be used for initial interim housing by placing smaller structures (e.g. GP Medium tents, pre-fabricated housing, travel trailers, etc.) inside the air-supported structures.

(4) FEMA will issue mission assignments to USACE Planning Response Teams to develop both emergency sheltering (60 to 90 days) and interim housing (1 to 1-1/2 years).

(5) FEMA will issue mission assignments to make temporary and permanent repairs to private homes.

(6) Motor homes and travel trailers will be used extensively to house disaster victims.

(7) Housing units constructed to meet containerized shipping specifications may be used in lieu of standard mobile homes (which are more difficult and expensive to transport by ship).

(8) Restoration of utility service by sanitary, water, and power providers will allow for re-occupation of community by areas, as repair sweeps have been completed and temporary home repairs have been made.

(9) Structurally sound parking garages will be used for stacking temporary housing when environmentally controlled with air-supported structures.

(10) The average family size is four persons.

2. **MISSION**. To provide emergency shelter (60-90 day duration) and develop interim housing (up to 1-1/2 years) to accommodate disaster victims displaced in the Anchorage area as a result of the earthquake. This will require a multi-faceted approach.

a. **Emergency Shelter.** Provide for emergency sheltering through the use of air-supported structures, tents, and other rapidly erected structures. Make temporary repairs to structurally sound buildings and homes that can be re-occupied. Install longer-term interim housing utilizing tents, pre-fabricated containerized units, travel trailers, and/or motor homes within air-supported structures and at individual home sites.

b. **Interim Housing.** During this phase, permanent repairs will be made to houses that are not structurally safe, but which are repairable. In addition, replacement-housing units will be placed on existing mobile home pads to replace destroyed units. Long-term housing will be provided for those persons assigned to emergency shelters whose domiciles are damaged to the point that they cannot be reoccupied. Based on the assumption 9,718 people will seek temporary shelter in public shelters, a total of 2,500 housing units, either mobile or modular, will be required.

3. **EXECUTION.**

a. **Commander's Intent.** See basic plan.

b. **Concept of Operations.**

(1) **Emergnecy Shelter Phase.** Occupying undamaged buildings and opening up large hanger spaces on Elmendorf Air Force Base will provide initial spontaneous shelters. Emergency shelters will be set up from a pre-positioned stock of rapidly deployable air-supported structures. Depending upon availability, engineer troop units may be used either in lieu of local emergency response staff, or as a supplementary work force.

Once emergency sheltering needs are met, additional air-supported structures will be erected and outfitted for longer-term occupancy using tents or other modular dwellings to create private quarters within.

Government furnished tents, support facilities (kitchens, showers, latrines) and selected utility components supplied by FEMA or procured by USACE will be delivered by air or sea to staging areas located near the affected area. From these points materials will be issued to the individual contractors for transporting to the emergency shelter sites and subsequent installation.

Repair Sweep Teams will be staffed and deployed to assess damage and identify homes that may be repaired temporarily and re-occupied quickly.

USACE may be tasked to renovate, and otherwise prepare for occupancy by displaced persons, vacant commercial or industrial buildings in Anchorage. USACE efforts may include: field assessments (to include earthquake damage), preparation of SOW and contracts, and supervision of contracts. The contracts will include repairs, renovations, pest control, cleaning, support facilities (kitchens, showers, latrines), power generators, selected utility components, medical clinic, and an administrative facility. Work could also include road repairs, site clearing for support facilities, security fencing, etc. As of this writing, locations of these buildings have not been provided. Definitive support requirements for each individual vacant building cannot be quantified until the buildings are inspected and assessed. Containerized support facilities will be used for kitchens, showers, latrines, medical clinics, and administrative facilities, as discussed later in this annex.

(2) **Interim Housing Phase.** During this phase, dwellings that were previously identified by Repair Sweep Teams as repairable, but requiring more extensive work will be provided necessary repairs to allow re-habitation. USACE Roofing PRTs may be tasked with contracting engineering and construction services to repair these structurally damaged homes.

Temporary Housing PRTs will contract for purchase of locally available travel trailers and/or lease of motor homes. Stateside sources of containerized modular housing, travel trailers, and/or mobile homes will be activated, and sea-shipping contracts will be set up. Individual trailer or motor home placements will be provided for interim housing on individual home sites where space and utility connections are adequate. Demolition, debris removal, and trailer re-installation will be contracted in order to replace the estimated 6000 existing mobile homes extensively or completely damaged (Table 2, page B-2-A-1-1).

Under the long-term scenario, Temporary Housing PRTs will be tasked with preparing plans for interim housing group sites to be constructed on pre-defined sites. Four, 250-unit housing areas will be developed by construction contractors. Work under these contracts would include site clearing/preparation and the installation of supporting utilities, road networks and Government furnished mobile, and/or modular homes. The physical location of these housing areas will be determined by EMA, however, because of the scarcity of developable land within the Anchorage area, this may require pre-arrangement with the two military bases for construction of interim housing facilities on Federally owned open lands. Housing units will be delivered by sea to the Port of Anchorage and then transported via commercial carrier to nearby staging areas. From the staging areas the housing units will be distributed to the construction contractors. It will be the construction contractor's responsibility for transportation of the individual units to the appropriate housing area. In the event that there are delays in reopening the Port of Anchorage, alternative ports of entry for receipt of the housing units include the Ports of Seward and Valdez. Overland transportation from these two ports will require hauling along two-lane roadways during snowy winter conditions; consequently these two ports should only be used as back up.

It is estimated that a total of four housing areas will be required to support the long-term mission. This number is for initial planning purposes only and will have to be adjusted to reflect the actual number of sites identified by the EMA and the capability of each site.

c. **Tasks.**

(1) **Land and Site Preparation Requirements**.

(a) **Pre-disaster Preparation.** In order to succeed in meeting emergency sheltering needs The City of Anchorage should make plans to develop the following:

(i) *Although not specifically addressed in this appendix, it is strongly advised that a pre-positioned stock of small, immediately erectable (less than fours hour deployment) shelters be developed to address spontaneous shelter needs in the likely event that other shelters are unusable. This stock may consist of General Purpose (GP) Medium or Modular GP Tents (Attachment A.1 and A.2), small inflatable air structures (Attachment B.3), or other similar housing units. These same units will also be invaluable to later emergency housing efforts.*

(ii) A formal Memorandum of Understanding (MOU) with the base commands at Elmendorf Air Force Base and Fort Richardson regarding the use of hangers or other large structures for spontaneous and emergency sheltering needs. This is especially critical post-9/11 since security issues may require special access procedures or restrictions on displaced victims when at the shelter facility. The MOU should address the spaces available for use, period of use, base security, transportation and other issues that would impact facility operation for emergency sheltering.

(iii) Pre-designated sites for installation of air-supported shelter structures (Air Domes) (see Attachment B.1. "ASATI Air Structures"). Sites need to be large (200' x 400' or larger) paved areas to provide a durable interior floor when the structure is set up. Likely sites include large paved areas at shopping centers, public facilities, or airport tarmac. Plans should be made to accommodate structures with total interior space of 50-100K square feet. For privately held lands a lease agreement should be signed in advance, which allows the structure to be set up in the event of a major earthquake. Potential sites that should be investigated include,

??Remote airport tarmac at Anchorage International, Merrill Field, and the Military bases.
??Campbell Airstrip (Graveled strip)
??Parking lots at shopping malls and public facilities
??Paved support areas for industrial facilities
??Public parks and school fields (marginal, requires aggregate surface placement)

(iv) To accommodate the emergency shelter needs and to allow for placement of additional Air Domes to provide for initial interim housing needs, The City of Anchorage should identify (10-15) sites, each capable of housing a 45,000 SF air-structure or larger. Sites larger than the 45K square foot minimum will allow for fewer, larger structures.

(v) Based on a total sheltering need for roughly 10,000 displaced persons (page B-2-A-1-4), and assuming 1/3 will be sheltered at undamaged building shelters and 1/3 at the military bases, about 3,500 persons will require shelter by air-dome structures. For planning purposes 60 square feet per person is assumed, to include personal living space and support facilities that will also be housed within the dome. A total of five-45,000 SF air-supported structures should be purchased and pre-positioned for use in the Anchorage area.

(vi) Relatively inexpensive augured soil anchors may be used to provide point tie-downs for the structure's cable net system. Six to eight sites should be outfitted with properly placed anchors, flush-mounted or covered to protect them from site traffic. Since it is possible that the earthquake may damage a pre-designated site, preparation of 6-8 sites should accommodate the five shelters.

(vii) Identify acceptable sites for Interim Housing group sites. Assuming 4,000 SF per housing unit (HU) lot and 250 unit sites, (4)—30 acre sites will be required. Because of the lack of large developable sites the most likely locations for group housing sites, in addition to privately held lands sites at one or more of the following may be necessary,

??Elmendorf Air Force Base—unused open areas at the perimeter of the base that could be fenced out of the active base area for use as a group site. Any use agreement would need to be formalized in an MOU with the base commander.

??Fort Richardson—unused open areas at the perimeter of the base that could be fenced out of the active base area for use as a group site. Any use agreement would need to be formalized in an MOU with the base commander.

??Campbell Airstrip—an open area of about 40 acres containing a graveled airstrip used by the US Department of the Interior (USDI) as an emergency landing site. It appears that The City of Anchorage may own the land, making it likely that an MOU could be reached with USDI for its use during a catastrophic event.

(b) **Emergency Shelter Phase**.

(i) Emergency Sheltering. Immediately after the catastrophic event pre-designated air dome installation sites should all be inspected for damage, and actual deployment sites identified based on assessment and proximity to housing needs. Sites will need to be cleared of snow prior to delivery of the air dome structures. For sites that are on otherwise restricted lands (airport tarmacs, military base lands, etc) fencing may need to be erected to separate the housing area from adjacent use areas.

(ii) Temporary Repair Sweeps. Rights-of-entry will be required from individual property owners to perform structural and repair inspections. In addition, the landowner will need to authorize temporary repairs to their dwelling if the USACE Roofing PRT or their designated Contractor will make the repairs.

(iii) Installation of travel trailers or other pre-fabricated housing units on individual properties will require similar rights-of-entry from the landowner, and release to do necessary work on the site.

(c) **Interim Housing Phase.**

(i) Construction of Interim Housing group sites. For initial planning purposes it is estimated that approximately thirty acres of land will be required for each 250 unit housing area. This includes space for the housing units, separation areas, vehicle parking and roadways.

(ii) Permanent Home Repairs. If permanent home repairs are contracted by the Repair Sweep Teams on behalf of the landowner, it will require right-of-entry and a release to do the necessary work on the site.

(iii) Replacement of destroyed Mobile Homes. Installation of travel trailers, mobile homes or other pre-fabricated housing units on pads occupied by destroyed units will require similar rights-of-entry from the landowner, and release to do necessary work on their site.

(2) **Housing and Support Facilities**

(a) **Emergency Shelter Phase.**

(i) Air-Supported Emergency Shelters. Five air dome structures will be set up to accommodate persons not able to be otherwise sheltered in air base hangers or undamaged building spaces – approximately 3,500 persons. Each 45,000 SF structure will accommodate 700 persons and will include dining, latrine, shower, medical, and administrative support facilities within the air dome space. Development of each shelter should proceed in the following sequence,

??Set up structures and provide interim service utilities consisting of emergency power generators, temporary lighting, porta-johns, and a mobile medical unit. Generators may be set up outside of the structures, with power cables routed into the air dome under the perimeter fabric seal.

??Provide survival critical supplies to occupants, including bottled water, food, blankets, and beds.

??Install permanent lighting, containerized unit kitchens, latrines, showers, administrative and medical, and other support facilities. Facilities requiring power, water, and/or waste connections should be positioned at the perimeter of the air dome with utility service connections run between the back of the support units and the dome wall for separation from the rest of the space. All utilities will be run above ground. Utility connections to all support facilities will be run to a separate utility structure (smaller dome or other building), containing package sewage treatment or holding tank, and power generation.

??Develop private quarters for families or small groups of families by installing GP Medium or modular GP medium tents, modular housing units (examples in Attachment C.), or other individual living units. Besides electricity for lighting, no utilities should be provided to the individual quarters.

??*Note: If disaster occurs late winter or early spring when exposure to weather is not a threat, and unprotected tent structures may be used safely, air domes may not be required. In this case emergency sheltering may be provided in displaced person camps utilizing tents and other support facilities as described in Attachment F. below, without a protective air dome.*

(ii) Supplemental Air Dome Structures. As need is identified by EMA, additional air domes may be ordered and installed at other pre-designated sites. Allow 3-4 weeks for delivery of first additional air dome, and one week for additional increments. Supplemental air domes should be installed with all latrines, showers, kitchens, other support facilities, utilities and private quarters in place before occupancy.

(iii) Repair Sweeps. Sweep teams activated to inspect damaged homes will progress with assignments by grid/street method. Repairable homes will be assigned to repair teams and re-occupied by homeowners as temporary repairs are completed.

??Inspections should be closely coordinated with utility restoration teams to assure that adequate utility services are available in the areas to be re-occupied.

??Sweep teams will identify the need for temporary sanitary and water needs in areas. If porta-johns and water supply stations are set up in neighborhoods, weather shelters must be provided at each site (as an example, Southern Inflatables, Attachment B.3.).

??If utilities have not been restored, repair supplies should include propane for heating/cooking, space heaters, and camp stoves for individual use.

(b) **Phase Interim Housing**.

(i) Travel Trailers, Mobile Homes, Containerized Units Placed at Individual Sites. Housing unit placement on individual site will be managed by temporary housing PRTs as a standard placement mission. USACE may be tasked by FEMA to contract for unit purchase as well as placement.

(ii) Replacement of destroyed Mobile Homes. As with the individual placement mission in (b)1, replacement of destroyed mobile homes will be managed by temporary housing PRTs as a standard placement mission. USACE may be tasked by FEMA to contract for unit purchase as well as placement.

(iii) Contracted Repairs to Individual Homes. Once temporary repairs have been made to allow re-occupation of least damaged structures, repair teams will review inspection reports on more significantly damaged homes. Structures with greater damage, but repairable, may be contracted for repair if they meet the terms of FEMA assistance. USACE Roofing PRTs may be tasked to contract repair work.

(iv) Development of Group Sites. Temporary housing PRTs will develop, or Contract the development of, Interim housing group sites.

(3) **Utilities**

(a) **Emergency Shelter Phase.**

(i) Air Dome Structures. Each site will require electrical, water, and sanitary service. If City utilities are in service connections may be made to the municipal system, otherwise services must be provided by portable power generators, water buffalos and bottled water, and either packaged sewage treatment plants or holding tanks and pumping contracts. All water and wastewater lines will be run inside the air dome structure to prevent freezing, and must be insulated when run to the utility service structure.

(ii) Repair Sweeps. If water and sanitary utilities are not restored to individual neighborhoods when re-occupied, water buffalos, bottled water, and porta-johns will be required.

(b) **Interim Housing Phase**. Contractor installed electrical power service (including distribution lines, transformers, and power poles, street lights), potable water systems (either city water or wells, pumps, storage tanks and distribution lines), and sanitary sewage collection systems will be required in each housing area. If access to city sewer is not available a packaged sewage treatment plant may be required at each housing area.

(c) **Individual Housing Unit Placements.** Any placement of travel trailers or other modular housing units on individual sites will require fully insulated and heated (heat tape) water and wastewater runs where exposed to weather. Exposed runs should be kept to a minimum and insulated skirting should be provided on all units to minimize freezing potential.

d. **Timeline**.

(1) **Emergency Shelter Phase**. It is anticipated that a 20 to 30-calendar day construction period will be required to execute this phase of the plan. This would include deployment of five air dome emergency shelters, completion of initial repair sweeps of all residential areas, delivery and deployment of additional air dome structures for longer term occupancy, and setup of supporting facilities and utilities at all air dome housing centers.

The first priority is the installation of air domes for critical emergency housing. Installation should be accomplished within two days following the start of construction, or within 72 hours of the earthquake event. While the installation of support facilities and utility services will run concurrently with the erection of additional air domes for housing, it is anticipated that the utility portion of this work could require up to 30 calendar days to complete. The potential acquisition and installation of packaged sewage treatment plants is the controlling factor in the overall timeline.

(2) **Interim Housing Phase**. Placement of housing units on individual sites and replacement of destroyed existing mobile homes will be accomplished early in the phase II execution in order to minimize occupancy at emergency shelters. Development of interim housing group sites will not be able to fully commence until winter weather breaks, likely in March or April. To complete phase II group sites it is estimated that a construction period of approximately six months will be required. Ability to obtain and ship adequate numbers of replacement mobile homes, travel trailers, or other manufactured housing units will be the controlling factor in the overall timeline.

e. **Production Required to Meet Mission Execution Need.**

(1) **Emergency Shelter Phase**. All five of the emergency shelter air domes must be set up within the first three days after the earthquake event. Assuming 24-hour operation, this may be accomplished utilizing five teams of 10-15 engineer troops or local emergency response staff. Initial set up will include set up and inflation of the shell structure. The equipment providers should be called upon to accomplish

emergency power generation, temporary lighting, porta-john, and mobile medical facility set up. Once the initial structure is set up it is anticipated that 15 to 30 days will be required to obtain and install all the required support facilities and utility services. Timely procurement of the packaged waste treatment plants will be the controlling factor for successful completion of Phase I.

(2) **Interim Housing Phase**. A crew of three persons can set up one prefabricated housing module per day. Assuming a work force of five crews per contractor, and two contractors per housing area, a production rate of 20 housing units per day should be achieved. At this rate, approximately 50 calendar days will be required to erect all required long-term housing units. This assumes that a readily available supply of prefabricated units exists. To totally complete each housing area (install utility systems and road nets), it is anticipated that an additional four months will be required. Therefore, a total construction time of approximately six months will be required to finish all four housing areas. If mobile homes are used in lieu of prefabricated housing units, the production rate should double and, assuming the same contract work force is used, reduce the required set up time to 25 calendar days.

During the same period of time PRTs will contract for replacement of destroyed mobile homes, and placement of housing units on individual home sites. These two activities are not expected to take as long to complete as development of the interim housing group sites. In both cases, the critical activity on the production timeline is procurement and delivery of necessary housing units (travel trailers, mobile homes, containerized or modular housing units).

4. **ADMINISTRATION AND LOGISTICS.**

a. **Concept of Support**. See basic plan.

b. **Logistics.**

(1) **Emergency Shelter Phase.** Severity of weather conditions during a winter earthquake event demands that air-structures and tents be immediately available in the Anchorage area. Even military air transport may not be reliable enough after a major event to prevent loss of life from exposure. Success in the earliest stages of the mission requires that supplies of air-supported structures, tents and support facilities, to include packaged sewage treatment plants, be pre-positioned in Anchorage for immediate use. Scheduling of shipments is critical to maintaining the supply. Logistics Management must closely manage material shipments throughout the mission.

(2) **Interim Housing Phase.** Lead-time for shipment of supplies from the lower forty-eight states makes supply logistics management a critical factor to the success of the mission. As with Phase I, an adequate supply of housing units and construction materials, water, electrical and sewer lines, packaged sewage treatment plants, etc., must be available in Anchorage for distribution to the individual contractors. Scheduling of shipments is critical to maintaining the supply. Logistics Management must closely manage material shipments throughout the mission.

c. **Personnel**.

(1) **Pre-Disaster Preparation**. Timely deployment of Repair Sweep Teams requires that a significant number of trained and qualified engineers be available to assess damages and recommend necessary temporary repairs. A cadre of qualified local structural engineers should be identified and trained through a program targeting interested individuals. Considering the estimated 20,000 residential buildings that would be moderately damaged (Table 1, page B-2-A-1-1) a sixty engineer cadre would allow three-shift operation of twenty sweep teams, and inspection of all 20,000 residences in twenty days, assuming 16 inspections per team-shift. Trained Structural Engineers could be supported by USACE Temporary Roofing PRTs, which may be assigned the task of contracting recommended repairs for re-habitable homes.

(2) **Emergency Shelter Phase I.** Due to the magnitude of the temporary housing mission and need to get the disaster victims housed and out of the elements in an expedited manner the PRT will consist of two action officers, two mission managers, two mission specialist, two data entry personnel and adequate field personnel to assure 24 hour operation. Personnel staffing may vary somewhat depending upon the availability of support personnel provided from other sources. A total of 20 personnel will be required to perform the QA functions associated with the temporary housing mission. This is based upon assignment of two personnel per displaced persons camp. Contract specialists will be required as part of the PRT if they are not provided from other sources.

(3) **Interim Housing Phase.** Under Phase II, the basic PRT structure will be continued from that established for Phase I. An additional twelve QA personnel will be required to execute the Phase II mission. This is based upon a requirement for three personnel per site to perform the QA functions. QA personnel assigned to the Phase I mission may be reassigned to this mission as work under Phase I is completed. As with Phase I, contract specialists may be required as part of the housing PRT if they are not provided from other sources.

d. **Public Affairs**. See basic plan.

5. **COMMAND AND SIGNAL**. See basic plan.

Tab A: LOCAL FACTORS
Tab B: MILITARY TENTAGE AND SUPPORT FACILITIES
Tab C: AIR-SUPPORTED STRUCTURES
Tab D: MODULAR/CONTAINERIZED/MANUFACTURED HOUSING
Tab E: PACKAGED/PORTABLE UTILITY SYSTEMS
Tab F: REPAIR SWEEP PROCESS
Tab G: DISPLACED PERSONS TENT CAMPS

TAB A TO APPENDIX 14 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
LOCAL FACTORS

1. **SCOPE**.

a. This mission traditionally consists of installing mobile homes, travel trailers, or other readily fabricated buildings, primarily in group sites, but also on individual lots in existing parks or on the same property as the damaged residence. It includes provision of utilities, recovery of the temporary housing, and site restoration.

b. Because of the factors listed below, the normal procedures do not work well in the Anchorage area. The procedures described in this appendix have been designed to overcome these problems.

2. **LOCAL CONCERNS.**

a. The high cost of shipping regular and travel trailers to Anchorage. The costs below do not include the costs of moving the temporary units from FEMA's storage areas to the Puget Sound area.

(1) Travel trailer (8x30 foot) shipment by Tote: Approximately $4,900 (3,750 to Anchorage, $1,150 return). Shipping time: At port on Friday, offload Tuesday (sailings Tuesday, Wednesday, and Friday from Tacoma, WA during peak season. Service is normally twice a week during the winter, but would probably be increased to three following an earthquake.) (Tote did not offer a price for the mobile homes; they indicated that barge shipping would be more economical for a 14 foot wide unit.)

(2) Travel trailer (8x30 foot) shipment by Northland Barge: Approximately $6,150 ($3,400 to Anchorage, $2,750 return). Northland typically has two sailings a month; travel time is 7 to 10 days, and during November through February they may offload in Seward, rather than Anchorage, depending on ice conditions in Cook Inlet.

(3) Mobile home (14x60 foot) shipment by Northland Barge: Approximately $13,050 ($7,250 to Anchorage, $5,800 return). Note: a 10x60 or 12x60 mobile home would cost 12,350 ($6,850 to Anchorage, $5,500 return). Northland typically has two sailings a month; travel time is 7 to 10 days, and during November through February they may offload in Seward, rather than Anchorage, depending on ice conditions in Cook Inlet.

b. Limited availability of land for temporary trailer parks within the Municipality of Anchorage.

c. Foundation problems when land can be obtained (much undeveloped land requires excavation and backfill for a stable surface; this would be difficult when the ground and the gravel sources are frozen).

d. Problems in installing water and sewer systems during the winter. Although heavy equipment would be able to excavate utility trenches, pipe bedding and backfill would still be major problems.

e. Very limited availability of spaces in existing trailer parks and properly zoned lots; the current trend is the closing of parks as the land is converted to other uses. (The primary availability of spaces would probably be to replace existing mobile home stock that was destroyed by the event.)

f. Stockpiled mobile homes and travel trailers are of questionable suitability for local winter conditions. Alaska law has specific requirements for structural quality (snow load, etc.) and insulation of mobile homes. FEMA travel trailers are uninsulated, according to the agency's web site.

3. **MOTOR HOMES.** These are expected to play a major role in emergency housing, especially when the temperatures are above freezing. Both privately owned and rental units are very common within the Anchorage area.

a. Motor homes were used extensively by their owners for the Big Lake Fire, a Federally-declared disaster in the Matanuska-Susitna Borough. They were also used during a localized wintertime power outage in Anchorage that left several families without power for a week.

b. Advantages: widely owned; significant stock of rental units available in area; easily set up at the residence site; can provide full services down to freezing and shelter in weather well below freezing (provided propane and electricity are available); and can be driven to a central location for water resupply and sewage disposal. Some motor homes even have the ability to provide emergency electrical power for a residence.

c. Limitations: holding tanks will freeze in cold weather; thin insulation is a concern in cold weather (however, Anchorage temperatures are within the usable range for the insulation for much of the year); require an adequate supply of propane for the furnace and a moderate supply of electricity for the blower motor to maintain heat.

d. USACE involvement in supporting motor homes could include contracting for temporary utility hookups and possibly for providing group bathroom facilities.

TAB B TO APPENDIX 14 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
MILITARY TENTAGE AND SUPPORT FACILITIES

1. GENERAL PURPOSE MEDIUM TENT

a. Data source: http://ct.dscp.dla.mil/ctinfo/basecamp/oldgp/generalpurposetents.htm

b. Description: This improved G.P. Medium has been retrofitted with heat sealed tape over the existing seams for a leak resistant roof. This 16 foot wide by 32 foot long tent has two stovepipe shields to accommodate the standard 4" heater pipe. The end wall is fitted with environmental control duct sleeves.

The tent has one screened doorway at each end. The entire sidewall rolls and ties in the up position for flow through ventilation.

The complete tent includes a breathable outer skin, cotton liner, poles, pins, lines and transport/storage cover.

2. **MODULAR GENERAL PURPOSE TENT**

a. Data source: http://www.natick.army.mil/prodprog/shelters/mgpts.htm

b. Description: The Modular General Purpose Tent System (MGPTS) incorporates the latest design and manufacturing technologies to provide a multipurpose weatherproof shelter for any environment.

The MGPTS is larger, modular, pole-supported tent that is a more versatile and hospitable replacement for the current GP Small, Medium and Large tents. All configurations of the MGPTS are 18 feet wide, 7 feet high at the top of the sidewall, and 11.5 feet high at the peak. The MGPTS can be extended in 18-foot increments by adding intermediate modules. The MGPTS utilizes tensioned fabric to create a structure that distributes wind, rain and snow loads from the fabric directly to the support system. Tensioned fabric structures distribute loads more efficiently with lighter support systems than comparable non-tensioned fabric tents. The use of interchangeable components between different tents reduces logistics burdens and saves significant depot charges. The MGPTS erects/strikes in less than 30 minutes using four individuals.

Size	Dimensions	**NSNs:**
Small	18 feet length x 18 feet width	8340-01-456-3633
Medium	36 feet length x 18 feet width	8340-01-456-3628
Large	54 feet length x 18 feet width	8340-01-456-3674

-

3. **CONTAINERIZED KITCHEN**

a. Data source: http://www.natick.army.mil/prodprog/food/ck.htm

b. Description: The Containerized Kitchen (CK) provides a flexible, rapidly deployable, resource efficient, and multi-food preparation capability for increased consolidated meal preparation to support individuals across the operational continuum. It will be deployed at the dispersed person camps and will be capable of supporting up to 550 individuals with three hot cook-prepared perishable, cook-prepared shelf stable or heat-and-serve ration meals per day.

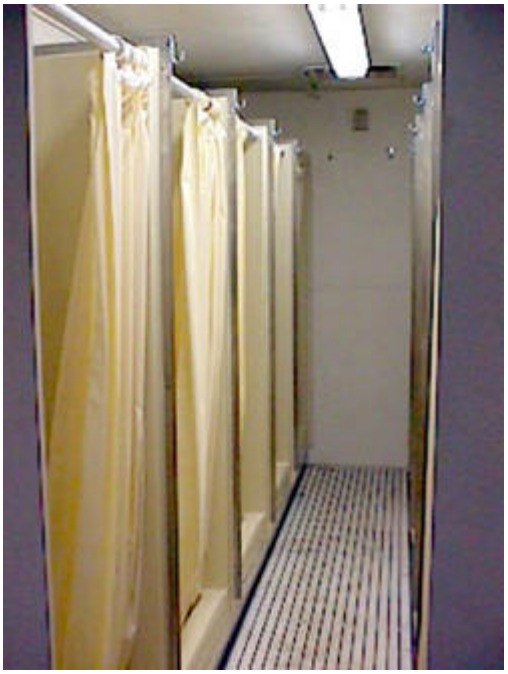
The CK consists of a combination of existing military standard kitchen equipment and commercial components integrated into an expandable 8x8x20 ISO hybrid container. It will be mounted on a tactical trailer and towed by the new FMTV 5-ton cargo truck. Major features of the CK include electrical power from an on-board Tactical Quiet Generator (TQG); environmental control for heating and cooling; refrigerated storage of at least 40 cubic feet; capability to perform roasting, grilling, boiling, frying and baking; running water; a protected serving line and ventilation of exhaust and by-products of food preparations. Set-up time by a trained team is 30 minutes.

4. **CONTAINERIZED SHOWER**

a. Data source: http://www.natick.army.mil/prodprog/shelters/cs.htm

b. Description: The Containerized Shower provides a transportable facility allowing individuals to shower in a clean, comfortable environment. The shower system enables 72 individuals to shower per hour for a 10-minute shower each. The Containerized Shower is currently in production for the Force Provider system.

The Containerized Shower consists of 12 commercial fiberglass shower stalls, an on-board ejector pump, M80 water heater, and a supply pump. Each shower stall has individual controls for adjusting water temperature. This system is capable of collecting the wastewater and pumping it a distance of 500 feet to a collection point. It is housed in an 8x8x20 ISO and weighs 800 pounds. The container connects to a 32' TEMPER Tent capable of housing shave stands and a changing area. The unit has an operating temperature range of -15 to 120°F. The entire system can be powered off a 5Kw generator. Four individuals can easily accomplish setup, including the TEMPER Tent, in less than one hour.

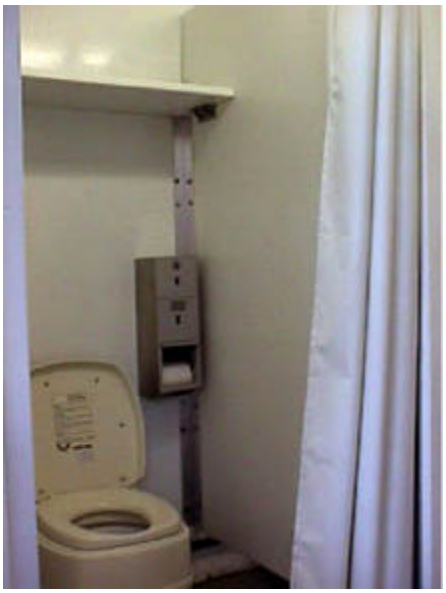


5. **CONTAINERIZED LATRINE SYSTEM**

a. Data source: http://www.natick.army.mil/prodprog/shelters/cls.htm

b. Description: The Containerized Latrine System (CLS) provides a new capability for modern, sanitary lavatory facilities in the field. The CLS will support up to 150 individuals. The CLS is currently in production for the Force Provider system.

The CLS consists of an 8x8x20 insulated ISO container with 6 low-water flush toilets with privacy stalls; a trough urinal; two waste collection tanks; two sinks with running hot/cold water; one 6-gallon hot water heater; mirrors; and dispensers for soap, toilet paper, and paper towels. Each privacy stall has hooks and shelves. A commercial heater/AC unit is installed in the rear wall to regulate the internal temperature and a fan is mounted on the front wall to provide ventilation.



Upon arrival at a location, the CLS is leveled and connected to electricity (10Kw) and a water supply. Waste is contained in a ventilated internal storage tank. The tank must be emptied daily by a sewage truck or connected into an existing sewage system. The CLS can operate in temperatures ranging from -15 to 120°F. Two individuals can easily setup the entire system within 45 minutes.

TAB C TO APPENDIX 14 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
AIR-SUPPORTED STRUCTURES

1. **ASATI AIR STRUCTURES**

a. Data source: www.asati.net

b. Description: Air-supported vinyl coated fabric structures featuring a bias-harness cable net system. With this system, fabric loads are transferred first to the cable net system, and then to the anchorage system. Even in winds up to 100 mph, fabric loads are reduced to about 6 psi. ASATI's cable net construction provides the most fail-safe air-supported structure in the industry—exceeding building code requirements.

Cost: $9-12/SF in place with heating and lighting systems. Larger structures have lower per square foot costs.

Availability: Structures are not stocked, but built to specification requirements. Delivery times are 3-4 weeks from placement of order in winter, 6 weeks in summer. Production capacity is approximately one per week after initial delivery, dependent on the size of the structure.

Usability**: Structures are compact when bundled for shipment to site—a 60,000 SF dome fits in the space of small car. Structure may be anchored using easily installed soil anchors, and foundation preparation is minimal using point anchors of this type. Dome can be erected quickly – on sites where anchorages are in place, dome can be erected in eight hours.**

Standard Sizes: Air Structures for bulk storage and for covering construction sites are available in a variety of standard sizes as listed in the table below. Other sizes are available on request. Air structures are also available for lease/purchase arrangements.

Standard Air Structure Sizes

(Square Meters)/ Square Feet	**Size: Width x Length x Height (m)/ft**
(465)/5,000	(15.2 x 30.5 x 7.6 H)/50 x 100 x 25 H
(670)/7,200	(18.3 x 36.6 x 9.0 H)/60 x 120 x 30 H
(1,115)/12,000	(18.3 x 61.0 x 9.0 H)/60 x 200 x 30 H
(1,394)/15,000	(18.3 x 76.2 x 9.0 H)/60 x 250 x 30 H
(975)/10,500	(21.0 x 45.7 x 9.0 H)/70 x 150 x 30 H
(1,486)/16,000	(22.0 x 61.0 x 9.7 H)/80 x 200 x 32 H
(1,858)/20,000	(30.5 x 61.0 x 11.0 H)/100 x 200 x 36 H
(2,323)/25,000	(30.5 x 76.0 x 11.0 H)/100 x 250 x 36 H
(2,787)/30,000	(30.5 x 91.5 x 11.0 H)/100 x 300 x 36 H
(4,459)/48,000	(36.6 x 122.0 x 11.5 H)/120 x 400 x 36 H
(4,181)/45,000	(45.7 x 91.5 x 18.3 H)/150 x 300 x 60 H
(8,361)/90,000	(45.7 x 183.0 x 18.3 H)/150 x 600 x 60 H
(10,200)/110,000	(84.0 x 122.0 x 22.0 H)/275 x 400 x 75 H
(26,012)/280,000	(106.75 x 244.0 x 18.3 H)/350 x 800 x 75 H

c. Contact: ASATI Air Structures
211 South Ridge Street
Rye Brook, New York 10573
(914) 937-4500 \ 1-800-AIR-BLDG

2. **INDOOR COURTS OF AMERICA**

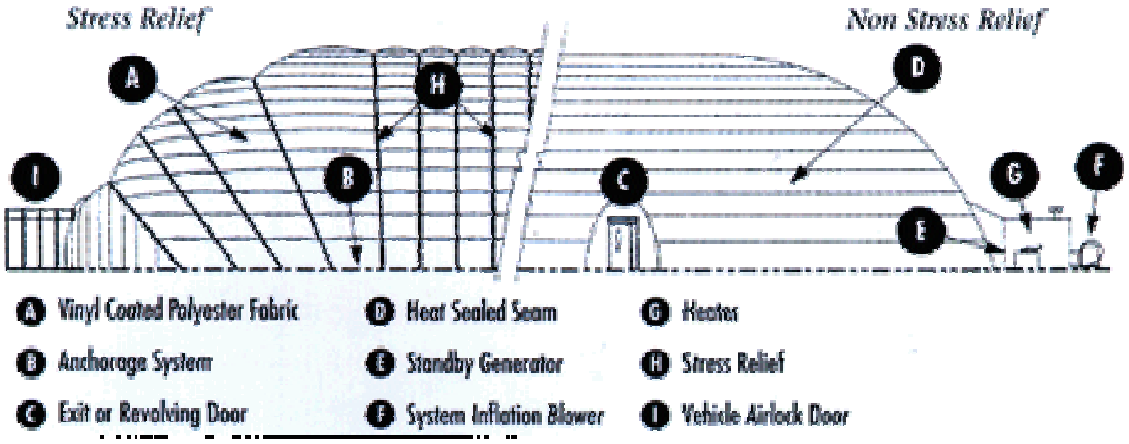
a. Data source: www.indoorcourts.com

b. Description: SportsFlex air-support structures, designed and installed by ICA, are the best solutions for affordable indoor sports. Every SportsFlex structure is custom-fabricated for any size application with state-of-the-art manufacturing techniques, the highest quality fabrics, energy efficient mechanical equipment, and the finest lighting fixtures. Although primarily used for seasonal play, ICA's SportsFlex structures are durable and flexible enough to be used throughout the year. For seasonal use, the process of setting up and taking down the SportsFlex structure only takes a day or two.

SportsFlex General Specifications

Fabric Materials

SportsFlex structures are enclosed in a high-strength vinyl coated polyester envelope that provides a long life, strength, and stability. This material is the proven cost-effective leader in resistance to weather and ultraviolet rays.



Construction Method

Totally clear span, SportsFlex structures provide an interior space free of obstructions. This design method maintains stability and resists loads.

Inflation

Because inflation pressure is a vital part of the SportsFlex support system, each structure is equipped with blowers that fully inflate the structure in minutes and sufficiently replenish the calculated air loss, plus a 100% safety factor. Stress Relief Anchor Detail N.T.S.

Stress Relief

For added stress relief and protection against heavy loads, an optional high strength steel

cable can be attached to the anchoring system. This addition increases the durability and stability of the SportsFlex structure.

Heaters
With a thermostatically controlled, indirect-fired, re-circulating heating system with stainless steel heat exchangers, the environment inside a SportsFlex structure is always comfortable and perfect for indoor sports.

Lighting
By including Caindle light fixtures in the building plans, any SportsFlex structure can provide glare-free, uniform lighting at any required level.

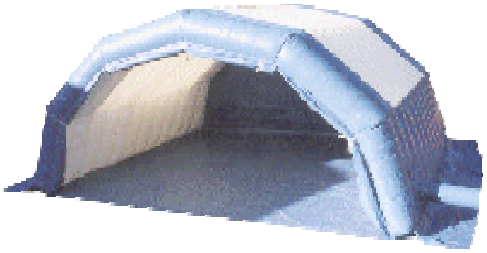
c. Contact: Indoor Courts of America
272 Route 202
Somers, NY 10589
Phone:(914) 277-5924 Fax:(914) 277-6975
E-mail: info@indoorcourts.com

3. **SOUTHERN INFLATABLES (UK) LTD**.

a. Data source: www.inflatables.demon.co.uk/temps.htm

b. Description: From this Blower and Inflatable Bag...

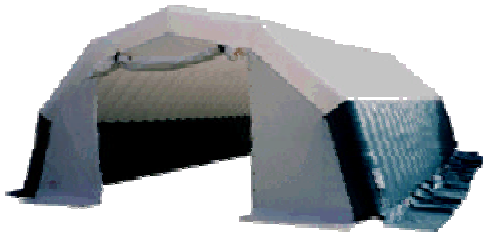
...To one of these temporary shelters in a matter of minutes...



When you need a temporary building quickly, you'll find a Southern Inflatables Temporary Building is the ideal solution. Erected in seconds, it's light yet stable. It needs no foundations; it's comfortable, looks good and is economically priced. A Southern Inflatables Temporary Building can be used for a variety of purposes. As emergency, all-weather protection it can't be beaten.

?? Erects in under 4 minutes and requires no foundation
?? Easily erected by two or three people
?? Units can be linked together to form larger structure
?? Can be erected in any weather on any terrain
?? Translucent Roof allows a high percentage of natural light inside

STANDARD DESIGN - Multiple Units (without End Walls)									
Width	Internal	10' (3m)	12' (3.6m)	15' (4.6m)	20' (6.1m)	25' (7.6m)	30' (9m)	35' (10.6m)	40' (12.2m)
	External	13'6" (4m)	16'6" (5.1m)	20' (6.1m)	25'6" (7.8m)	32'6" (10m)	37' (11.2m)	42' (12.8m)	47' (14.3m)
Length		All prices in UK Sterling - call for exchange currencies							
12' (3.6m)		1,150	1,300	1,500	1,750	2,450	2,850	3,250	3,650
15' (4.6m)		1,300	1,450	1,675	1,950	2,700	3,200	3,700	4,200
18' (5.5m)		1,450	1,600	1,850	2,350	3,150	3,650	4,150	4,650
20' (6.1m)		1,550	1,700	1,975	2,550	3,400	4,000	4,600	5,200
25' (7.6m)		1,800	1,950	2,275	3,300	4,150	4,625	5,100	5,575
30' (9m)		2,050	2,200	2,575	4,050	4,650	5,250	5,850	6,450



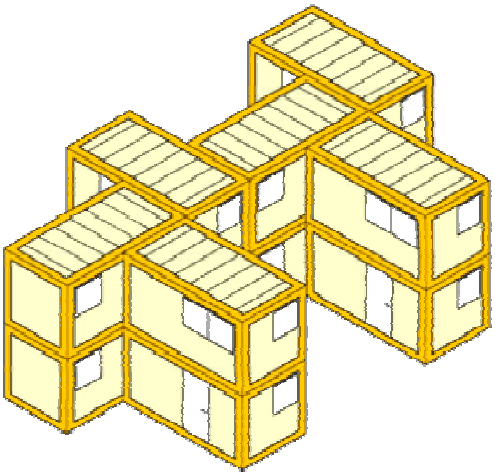
c. Contact: Southern Inflatables (UK) Ltd
Greenforde Farm, Stoner Hill Road
Petersfield, Hampshire GU32 1DY, UK
Tel: +44 (0) 1730 - 827 027
Fax: +44 (0) 1730 - 827 028

TAB D TO APPENDIX 14 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
MODULAR/CONTAINERIZED/MANUFACTURED HOUSING

1. **SMART SPACE**

a. Data source: www.smartspacemod.com/what.htm

b. Description: Smart Space is a versatile, multi-purpose mobile modular space system, utilizing the time tested and proven building block concept. Available in a base building block module size of 8.6'x8. 6'x20', the self-supporting steel framed units can be stacked and interconnected to provide an economical system solution for mobile space and temporary space needs.



?? **Flexibility** - Modular units allow adaptability to current needs through easy reconfiguration.

?? **Mobility** - Can be put in place with a Forklift, Crane, or Hook truck.

?? **Expediency** - Ready for full use immediately.

?? **Economy** - Much less expensive than permanent construction. Tax advantages through quicker depreciation schedules.

?? **Quality / Durability** - Self-supporting steel frames with detachable foam core galvanized walls.

?? **Modular** - All sidewalls are detachable - useful for subsequent extensions or renovations.

?? **Multi-Story** - Small on-site foot print. It saves space while adding utility.

?? Electrical, Sanitary and Heating installations are manufactured and assembled complete.

?? **Weatherproof** – The Smart Space modules are durable and weatherproof. There is a thick polyurethane foam core between steel sheets that have been galvanized and painted on both sides.

?? **Transport Friendly** – As Compact units, they are completely mobile and can be transported easily.

c. Contact: Smart Space Corporate Headquarters
5920 East County Line Road
Highlands Ranch, Colorado 80126
Phone: 303-771-2603 Fax: 720-482-0994

2. **HANDY HOME PRODUCTS**

a. Data source: http://www.handyhome.com/shelter/features.html

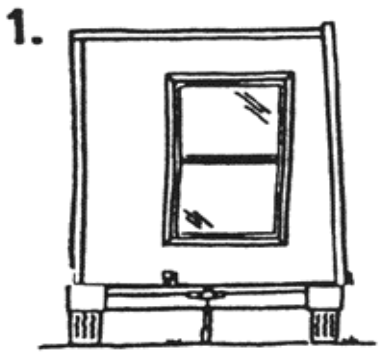
b. Description:
?? Emergency Shelter and basic housing
?? Everything is precut, nothing to saw
?? Easy to assemble; requires no special tools or carpentry skills
?? Quick to construct; can rapidly assemble large volume of units
?? All nails, screws and hardware included
?? Simple, illustrated instructions included
?? Withstands heavy wind loads of up to 100 mph, and roof loads of up to 54 lbs./sq. ft.

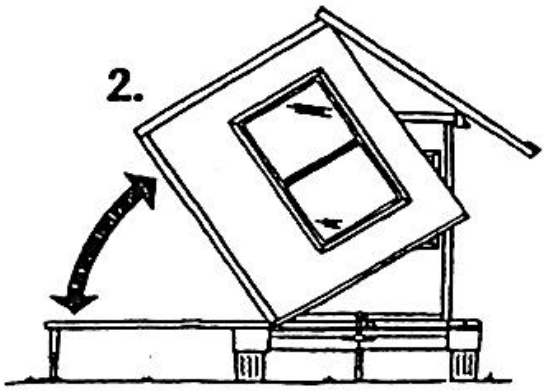
3. **REDI-BUILT EXPANDABLE STRUCTURES, INC.**

a. Data source: http://www.redi-bilt-structures.com/

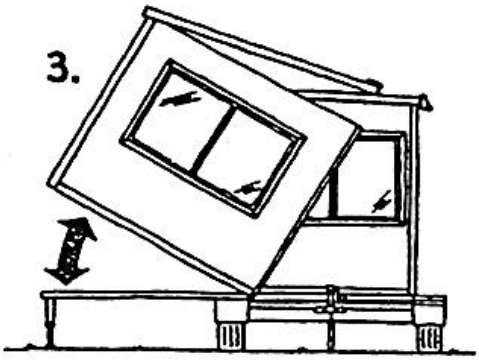
b. Description: Tow-able Trailer Model

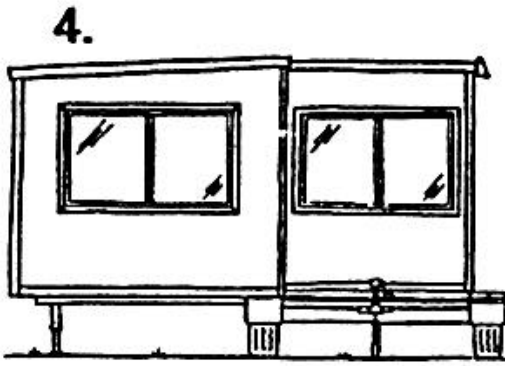
- ?? Available as a fully self-contained or as a park model
- ?? No outside electrical or sewer systems required.
- ?? Lightweight for easy transportation by truck, train, or boat. Tow-able with a 3/4 ton pick-up truck, heavy-duty van, or suburban.
- ?? Can be airlifted to remote areas.
- ?? No special permits or licenses required for transportation on Federal or State Highways.
- ?? Fully insulated floors, walls, ceiling, and windows. Dow's extruded Polystyrene between aluminum framing. Structurally Insulated Panel (S.I.P.)





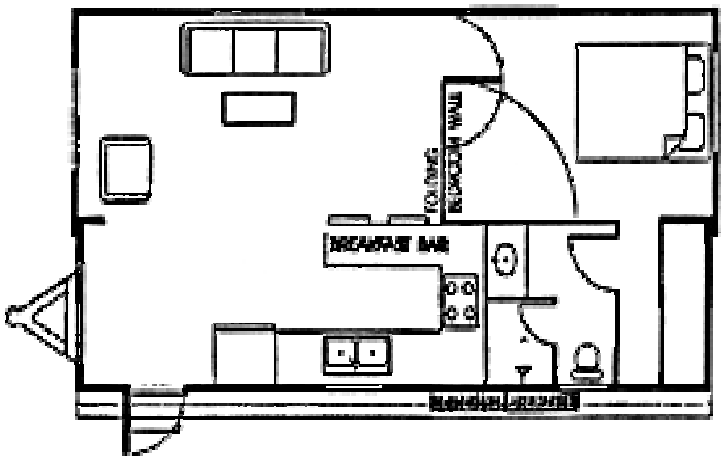
When the unit is closed, the Redi-Bilt Homes provides a secure, vandal resistant trailer that can be easily transported from location to location. To open the unit, extend the steel support beams and jack stands from the stationary side of the chassis. A hydraulically operated ram lowers the convertible sidewalls, floor and roof onto the support beams.





The hinged roof and floor design is guided through the extension phase by an innovative tracking system that assures the proper fit. Once seated in place, hinges and the wall and roof joints form tight weatherproof seals. The unit can be expanded in less than 30 seconds.

25 Foot Model Floor Plan



4. **WORLD HOMES MOBILE MODULAR HOUSING**

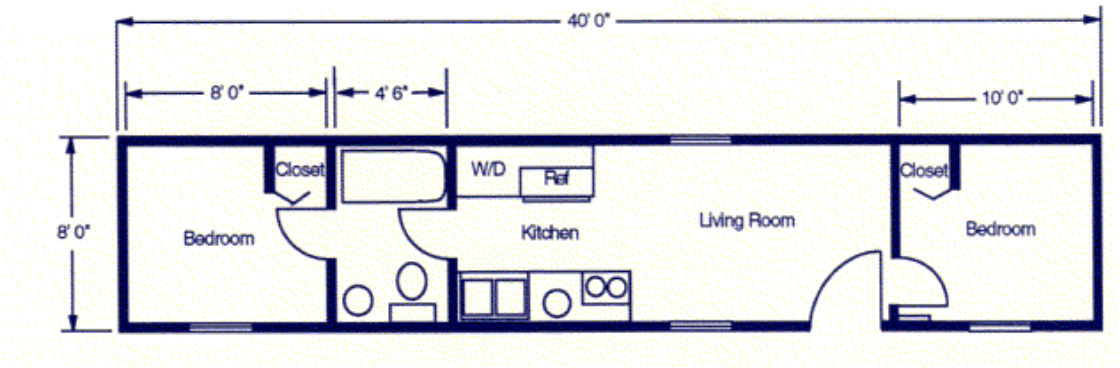
a. Data source:
http://www.net-magic.net/worldhomes/index.htm

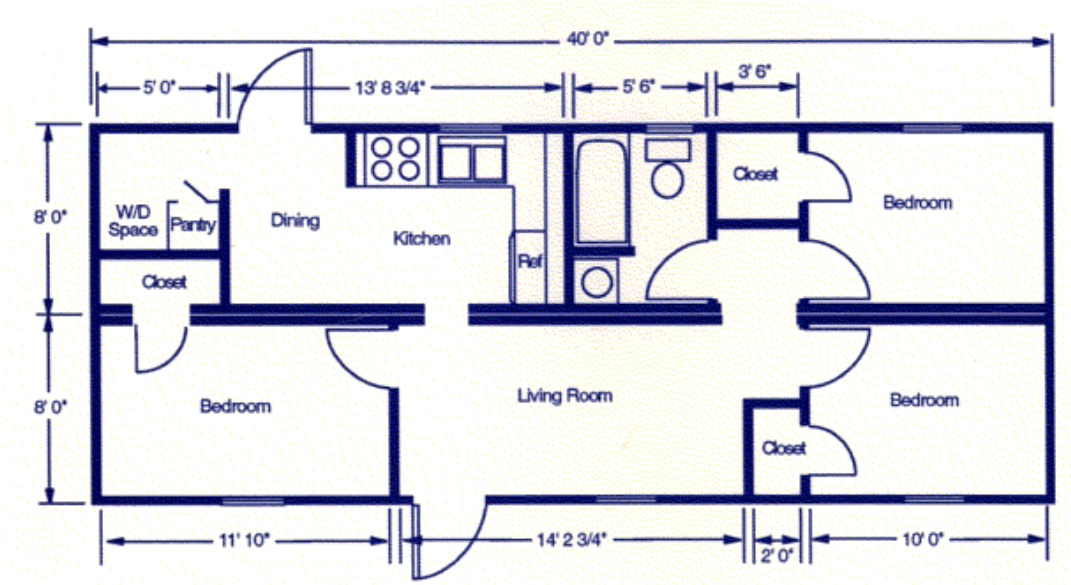
b. Description: This mobile modular housing is typically custom manufactured to meet local climate, culture and utility conditions. All housing and building modules are built to meet all applicable building codes and to withstand earthquake and severe wind loads. Most construction is glued wood frame with metal roof systems, masonry exterior siding, finished wood or gyprock interior finishes and fully adjustable steel foundations.

Mobile modular housing is available in singlewide units with 27 square meters of living space, doublewide units with 55 square meters and triple wide configurations with 82 square meters.

Mobile modular housing can be stacked while held in pre-positioned storage inventories. By stacking units five high over 680 singlewide modules can be stored on a single acre of land. 1680 units can be stored on a single hectare. Mobile modular units possess the identical handling and shipping characteristics as overseas containers. They are shipped overseas for less than the cost of shipping an overseas container.

Dimensions: 16' X 40' Bedrooms: 3 Bathrooms: 1





Dimensions: 8' X 40' Bedrooms: 2 Bathrooms: 1

5. **DURA-KIT SHELTERS**

a. Data source: http://www.durakit.com/

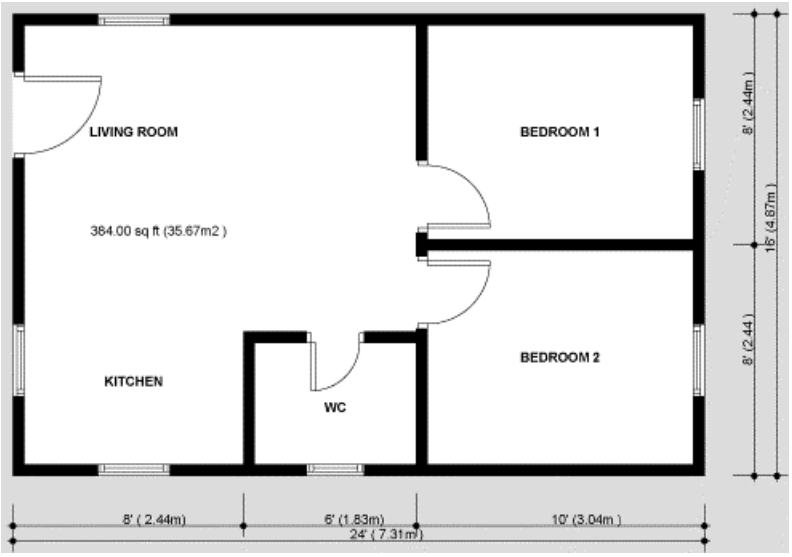
b. Description: The "Instant House"

?? **Low Cost:** At a base price of approximately US$15. per sf. (US$150 per sq. m) ,DuraKit offers high-quality, low cost, prefabricated shelters which are one third or less than the cost of conventional and prefab housing. In fact the only other quality shelters in this price range are tent or fabric type. Typical DuraKit shelters begin at about 100 sf. and go to virtually any size.

?? **Durable:** DuraKit provides a sturdy and attractive building that is suitable for long-term occupation. Whether supporting industrial development, for emergency or other relief housing, or simply as a convenient utility building, DuraKit provides flexible sizes and other options in a modest but pleasant bungalow style. The buildings can be either permanently mounted on a concrete base or built on an optional floor kit that allows easy relocation. Fire and weather resistant treatments, durable coatings and a patent-pending joining system are part of a structural design that can withstand high winds, rain and heavy snow.

?? **Lightweight:** Using high-strength, corrugated fiberboard, with over 50% recycled fibers, the DuraKit weight/space ratio is unmatched by any other fixed wall building system. This feature, along with the compact kit design, provides exceptionally low cost shipping as well as quick setup by two or three people in as little as one day. It also affords air shipment when timing is critical, or to remote areas where trucking is impractical.

??


LIVING ROOM
384.00 sq ft (35.67m2)
KITCHEN
WC
BEDROOM 1
BEDROOM 2
8' (2.44m)
16' (4.87m)
8' (2.44)
8' (2.44m)
6' (1.83m)
10' (3.04m)
24' (7.31m)

TAB E TO APPENDIX 14 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
PACKAGED/PORTABLE UTILITY SYSTEMS

1. **GENERAC PORTABLE ELECTRICAL GENERATORS**

a. Data source: http://www.generac.com/

b. Description: Trailer mounted generator sets from 8 - 210 kW allow for the back-up power of multiple sites with a single generator. These road ready trailers are equipped with all appropriate safety features including lights and jack stands. The generator can be up fitted with an extended power cord and customer specified plug for fast and easy installation during a power emergency.

2. **PORTATREAT PACKAGED WATER TREATMENT PLANTS**

a. Data source: http://members.tripod.com/phoenixengineering

b. Description:

100 Type: Self-Contain Portable Container type water treatment plant **Size:** 4' x 6' x 4' HT **Max Performance:** 100 m^3 Potable water / 24 hours/day **Application:** For Rural Work Sites, Settlements without portable water, where an immediate economical set-up is required

200 Type: Self-Contain Portable Container type water treatment plant **Size:** 4' x 10' x 4' HT **Max Performance:** 200 m^3 Potable water / 24 hours/day **Application:** For Rural Work Sites, Settlements without portable water, where an immediate economical set-up is required

300 Type: Self-Contain Portable Container type water treatment plant **Size:** 5' x 12' x 4' HT **Max Performance:** 330 m^3 Potable water / 24 hours/day **Application:** For Rural Work Sites, Settlements without portable water, where an immediate economical set-up is required.

3. **NOSSITER PACKAGED WATER TREATMENT PLANT**

a. Data source: http://www.nossiterpumps.com.au/

a. Description: **COMPAK 500**

Package water treatment plant for small communities

?? Australian designed and manufactured

?? Automatic operation with integrated alarms

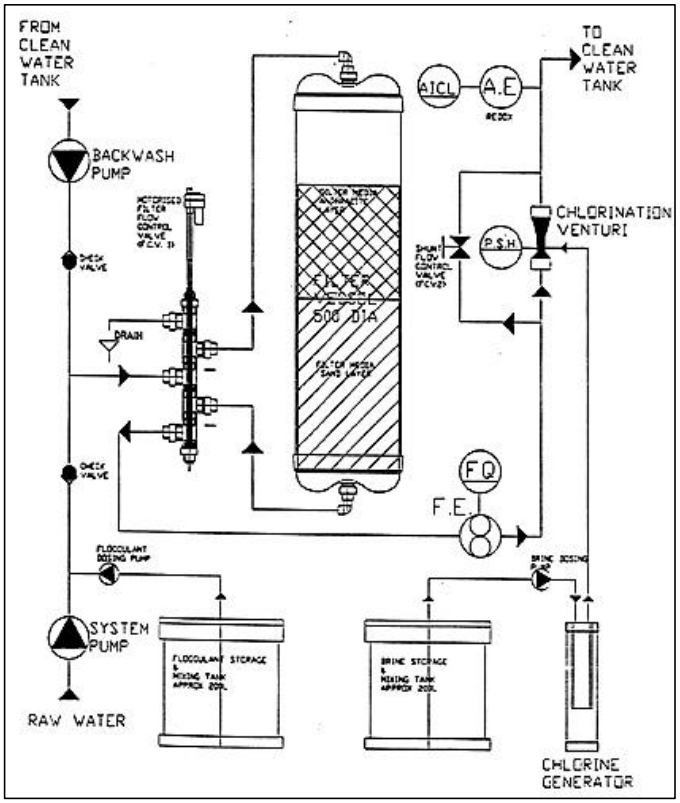
?? Generates its own chlorine disinfectant from salt

?? Robust and easily serviced

?? Low operating costs

The Compak 500 is an automatic self-contained water treatment plant capable of treating up to 85kl per day of raw water to drinking quality.

The process steps employed are based on the requirements of the demanding DIN 2000 standard for the treatment of municipal drinking water supplies.



4. **HYDROXYL SYSTEMS PACKAGED SEWAGE TREATMENT PLANT**

a. Data source: http://www.hydroxyl.com/

b. Description:

PRETREATMENT AND EQUALIZATION

?? Wastewater enters an equalization tank sufficiently large to accommodate daily peak flow contributions.

?? Heavier solids and lighter scum separate from the wastewater in the equalization tank, and represent the first stage of Total Suspended Solids (TSS) reduction.

?? Hydroxyl's Positive Flotation Mechanism (PFM) reduces TSS further; a process that uses electrostatically charged air bubbles to float particulate matter to the surface. Solids removed by the PFM are partly self-digesting; deposits are periodically removed.

?? Screened wastewater is transferred from the equalization tank to the aeration section of the ***Hydroxyl*** plant under pressure. During transfer, fine particulate organic matter is macerated to expose a greater surface area for accelerated aerobic digestion.

AERATION

?? Wastewater is transferred to the aeration chamber, where an oxygen-rich environment stimulates biological growth to reduce the Biochemical Oxygen Demand (BOD).

?? High-efficiency aeration maintains very high oxygen levels and promotes mixing, ensuring high oxygen transfer rates.

?? Specially designed plastic media immersed in the aeration chamber harbors attached microorganisms that feed on the organic matter in the wastewater.

?? Attached biological growth is self-regulating and capable of withstanding shock loading.

?? Processed wastewater is transferred through a secondary PFM for further TSS and BOD removal, and then to the bio-filter for additional treatment.

BIOFILTRATION

?? Treated wastewater is circulated through an aerated, porous foam-like bio-filter.

?? The bio-filter provides a large surface area for microorganisms to thrive, further reduce the BOD and convert ammonia to nitrate. The bio-filter also acts as a physical barrier to trap fine solids.

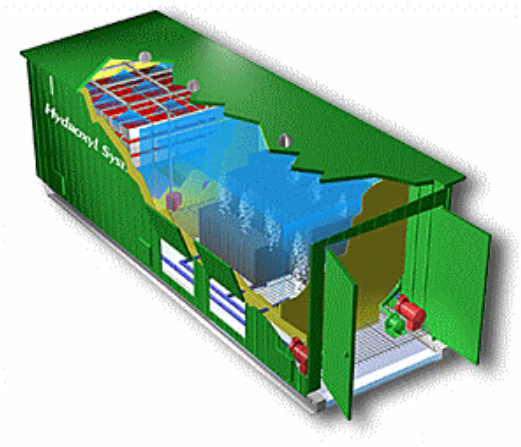
?? The bio-filter is constructed in sections for easy inspection and servicing.

ADVANCED OXIDATION

?? Effluent from the bio-filter is disinfected using ozone and hydroxyl free radicals to oxidize all remaining organic matter - including bacteria, viruses, and other pathogenic organisms.

?? A multi-layered automatic back-washing depth filter acts as an absolute barrier prior to oxidation assuring very low TSS at all times.

?? The final product is "hydroxylized" effluent: clear, odorless and disinfected water that can be safely used for irrigation, stream enhancement, or other beneficial re-use.



Hydroxyl Systems HS-C* Series Modular Treatment Plants

Model Number	*Number of Homes*	*Flow Rate (USgpd)*	*Flow Rate (m^3/day)*	*Module Dimensions (ft)*	*Module Dimensions (m)*
***HS-C* –50**	**37**	**13000**	**50**	**8 x 26 x 8**	**2.4 x 7.9 x 2.4**
***HS-C* -100**	**73**	**26000**	**100**	**8 x 40 x 8**	**2.4 x 12.2 x 2.4**

**Permitting, engineering, shipping, handling, installation, commissioning, taxes and equalization tanks are added to base price of plant*

POTENTIAL LAND SAVINGS. For ground disposal applications, ***Hydroxyl*** bases their land requirements on the hydraulic capacity of the soil. ***Hydroxyl*** effluent is "rainwater" quality -- therefore no additional purification by soil is required. As a result, land requirements are much smaller than for conventional treatment and ground discharge systems. Final designs for ground discharge are subject to regulatory approval.

5. **BIOPAK PACKAGED SEWAGE TREATMENT PLANT**

a. Data source: http://www.hydroklear-services.co.uk/

b. Description:

ADVANTAGES

?? Fully automatic system.
?? Minimal operator requirements.
?? Able to withstand flow and loading variations.
?? Above or below ground installation.
?? Automatically controlled sludge re-circulation to assist process and produce a better quality or effluent.
?? The unique biological process minimizes the risk of odor nuisance.
?? Variable influent and effluent invert levels to suit requirements between 300 and 1300mm.
?? Unlike other systems there is soil for at least 400mm around access hatch to grow grass or plants (below ground only)

OPTIONS

?? Temporary or permanent installation.
?? Mobile units available for overload or emergency situation.
?? Duty or duty/standby compressors.
?? Balance tanks to spread loads over greater period for transient populations.
?? Unit can be supplied as two vessels if required to suit site space.
?? Thickening/storage tank requiring fewer tanker collections.
?? Packaged pumping stations.
?? Integral de-sludging systems.
?? Maintenance and/or full management contract available.

TAB F TO APPENDIX 14 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
REPAIR SWEEP PROCESS

1. Repair Sweep Concept. In a major disaster the number of displaced persons will quickly overwhelm emergency response capabilities, unless aggressive steps are taken to reduce the demand for alternative shelters. The purpose of Repair Sweeps through damaged areas is to identify damaged but habitable homes, and specify emergency repairs necessary to keep people in their own residence. Repair Sweep Teams would be responsible for assessment of:

a. Structural integrity for purposes of habitation.
b. Utility condition for habitation.
c. Repairs necessary to allow re-occupancy by resident.

Types of repairs would be focused on making the structure habitable, and would not be equivalent to the traditional Home Repair program. Sweep Team reports would be fed to separate repair teams for execution of work. Repair Sweep Teams would also serve to identify water and sanitary needs in areas. The public would be informed that if they have a house where emergency repairs could be made, assistance would be provided to execute the repairs, but they are expected to live there.

2. Boundary/Repair Identification. Methods to define damage areas where emergency repairs would be applicable are similar to the methods used for initial impact assessment.

a. Local/State coordination required
b. Still initiate Worst Hurt First concept-start inside and work to outside
c. Establish grid system for team assignments

3. Team Management. Multiple options exist for managing and executing a repair sweep mission. Depending on the scope of the disaster and the availability of manpower resources. Potential management arrangements for repair sweeps include,

a. FEMA Project Managers and ISC serve as project oversight.
b. Straight mission assignment to the USACE. USACE does it all (possible source of labor may be voluntary agencies or citizen corps)
c. Tasking to USACE for repair squads only, and squad management.
d. Straight to a contractor who does complete project, including project management. Use GSA to let contract and GSA Real Estate Division source to monitor contract.
e. Possible use of TACs or private contracting to FEMA for repair squads and squad management.
f. Possible use of voluntary agencies/personnel in repair sweep or execution role (Mennonites/Civilian Corp, etc.) with FEMA, USACE or private contract management.

4. Repair Sweep Execution.

a. Repair Sweep Team staff serves as scouts to Repair Squads to identify houses to be repaired and scope of repairs. Damage reports are fed back to project oversight for assignment to repair squads.
b. Repair squads assigned by grid/street method.
c. Progress reporting.
    (1) By address vs. by applicant.
    (2) Reports to include not repairable cases also.
    (3) Informational reports to be fed back to shelters/camps to advise residents regarding status of their home.
d. Repairs by Damage Type—Earthquake
    (1) Remove hazards and dangerous debris.
    (2) Blank-in windows/walls
    (3) Basic extant of possible repairs is that which tarp/strapping/plywood can fix
e. Lack of electricity not sufficient to make residence uninhabitable.
f. Scouts to identify areas in need of water buffalos and porta-johns to address water and sanitation needs.

g. Promote self-help by affected individuals- provide materials necessary to make emergency repairs similar to sweep teams.

h. Material Procurement Process.

(1) Direct contracts with manufacturer through ESF #7—may need to federalize supply.

(2) Transportation of materials through ESF #1.

(3) Possible pre-placed contracts for plywood/furring strips/tarp/etc through USACE similar to ice and water standby contracts.

(4) Evaluate expanded mission of ATC-20 USACE trained Structural Safety Assessment Teams. If USACE is doing tagging, use them to complete punch cards for Repair Teams (combine efforts).

(5) In lieu of centralized distribution points, use the repair sweep team concept for both distribution of materials and for self-help of victims. Team can assess materials needed and leave it with homeowner.

5. Final Repairs. Repairs made under the Repair Sweep process are intended to provide a habitable space for residents, and is not intended as final repair to the structure. Final repairs to structures will be left with insurance agencies, for final inspection and direct issuance of checks.

TAB G TO APPENDIX 14 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
DISPLACED PERSONS TENT CAMPS

When weather permits, General-purpose medium tents may be used for emergency sheltering without the protection of an air dome structure. An alternative method for temporary housing is the U.S. Army's new Force Provider. Using a modular concept, this system provides a complete "city" in one package and is designed and engineered to provide climate-controlled billeting, dining facilities, showers, latrines, laundry, and morale, welfare and recreation facilities in modules. Each Force Provide module would serve approximately 1,000 displaced persons, or one module per displaced persons camp. A total of 36 modules will be built by FY 05. Available Force Provider modules may be obtained from the DCSLOG, HQDA, in accordance with AR 710-1.

Government furnished, contractor installed containerized showers, latrines, and kitchens would be provided at each campsite. Additional information on these components is provided in Attachment A. For the shave stand/changing area, administrative and medical treatment uses, general purpose, medium tents will be provided. Installation of all support facilities will be accomplished through construction contracts, or by engineer troop units if available. The following table summarizes the total facility requirement for temporary housing and supporting facilities required to accommodate 3,500 displaced persons in five camps.

TABLE 1
TOTAL FACILITY REQUIREMENTS

Proposed Utilization	*Total Requirement*	*Remarks*
Housing	200/30 EA	GP Medium/Assembly Tent
Dining	10 EA	Containerized Kitchen
Shower	15 EA	Containerized Shower
Latrine	20 EA	Containerized Latrine
Shave Stand/Changing Area	15 EA	GP Medium Tent
Medical Clinic	5 EA	GP Medium Tent
Administrative	5 EA	GP Medium Tent

Information in the following table presents the 'per camp' requirements for support facilities. Data contained therein was used as the basis for developing the total facility requirement.

TABLE 2
STRUCTURE REQUIREMENTS PER 700 PN CAMP[1]

General Area	*Housing (GP Medium or Assembly Tents)*	*Facilities*					
		Dining	*Shower*	*Latrine*	*Shave Stand Changing Area*	*Medical Clinic*	*Admin*
1 Camp	40/6	2	3	4	3	1	1

[1] Totals Per Area.

*Requirements are based upon the following criteria:
Housing - Five, four person families per GP Medium tent (20 PN) or 31 four-person families per Assembly tent,
Dining Facility - One per 550 PN,
Shower Facility - One per 250 PN,
Latrine Facility - One per 150 PN,
Shave Stand/Changing Area - One per containerized shower,
Medical Clinic - One per camp,
Administrative Facility - One per camp.

As a plan alternative the Force Provider System, a self-contained modular "city", could be used in this mission. Each basic module would accommodate approximately 1,000 displaced persons. This system is based upon using the Tent Extendable Modular Personnel (TEMPER) with external forced air heating and cooling, similar to home heating ventilation air conditioning systems. Approximately 10 acres of land is required for each module. A module can be set up in less than two weeks, to include site preparation. The following table delineates components of Force Provider.

TABLE 3
FORCE PROVIDER
(Basic Module)

Item	*Remarks*
Housing	44 modular general-purpose tents.
Containerized Latrine	4 with 6 toilets, 4 urinals & 8 sinks each.
Containerized Shower	2 with 24 stalls & 4 shave stands each.
Electric Kitchen	1 with 1800 meal per day capacity.
Containerized Batch Laundry	1 with 200 pounds per day capacity.
MWR Support	Modular general-purpose tents for religious support, satellite television, sports & free-weight equipment, board & card games.
Waste Water Vacuum Tank/Trailer	2 with 40k gallon/day collection & storage capacity.
Water Trailers	4-400 gallon trailers w/80k gal capacity (3 days).
Flood Lights	10 EA.
Generators	27 EA 60 kw, 1.1-mw continuous power.
Fuel Storage	40k gallons.
Personal Support	TEMPER tents for medical care, finance, mail, telephone and AAFES.

Utilities. Electrical power (including generators, underground distribution lines, and exterior lighting), potable water systems (including wells, pumps, storage tanks and distribution lines), sanitary sewage collection systems, and packaged sewage treatment plants will be required at each camp. Electrical service will be provided for overhead exterior lighting, service to the dining facilities, showers, latrines, packaged treatment plants and to the tents for interior lighting. Water and sanitary sewer service will be required for each dining facility, shower and latrine. With the exception of electricity for interior lighting, no utility services will be provided to the individual tents used for housing. More detailed support requirements will depend upon the individual housing sites selected by the EMA Office. See Attachment D for additional information on utility support.

TABLE 4
UTILITY SUPPORT REQUIREMENTS FOR 1,000 PN CAMP*

Item	*Requirement*	*Remarks*
Electrical Generators	2 EA	For exterior lighting, tents, latrines, showers, kitchens, water source, sewage treatment plant.
Electrical Distribution Lines	1,650 LF	Direct burial.
Light Sets	14 EA	Powered by individual generators.
Potable Water Supply	75 KGD	Well, pump, treatment, 500-gallon storage tank.
Water Distribution Lines	1400 LF	From well to kitchens, latrines/showers.
Packaged Sewage Treatment Plant	50 KGD	Site outside fenced area.
Sewage Collection Lines	3,000 LF	From kitchens, latrines, showers.

*Quantities tabulated above are based upon a generic camp layout and will require adjustments to suit the specific site.

INFORMATION TO BE MERGED

1. **SCOPE**.

a. This mission traditionally consists of installing mobile homes, travel trailers, or other readily fabricated buildings, primarily in group sites, but also on individual lots in existing parks or on the same property as the damaged residence. It includes provision of utilities, recovery of the temporary housing, and site restoration.

b. For the Anchorage area earthquake, innovation and flexibility will be required to meet the temporary housing needs. There are many special factors that make the traditional approach difficult.

2. **LOCAL CONCERNS.**

a. The high cost of shipping regular and travel trailers to Anchorage. The costs below do not include the costs of moving the temporary units from FEMA's storage areas to the Puget Sound area.

(1) Travel trailer (8x30 foot) shipment by Tote: Approximately $4,900 (3,750 to Anchorage, $1,150 return). Shipping time: At port on Friday, offload Tuesday (sailings Tuesday, Wednesday, and Friday from Tacoma, WA during peak season. Service is normally twice a week during the winter, but would probably be increased to three following an earthquake.) (Tote did not offer a price for the mobile homes; they indicated that barge shipping would be more economical for a 14 foot wide unit.)

(2) Travel trailer (8x30 foot) shipment by Northland Barge: Approximately $6,150 ($3,400 to Anchorage, $2,750 return). Northland typically has two sailings a month; travel time is 7 to 10 days, and during November through February they may offload in Seward, rather than Anchorage, depending on ice conditions in Cook Inlet.

(3) Mobile home (14x60 foot) shipment by Northland Barge: Approximately $13,050 ($7,250 to Anchorage, $5,800 return). Note: a 10x60 or 12x60 mobile home would cost 12,350 ($6,850 to Anchorage, $5,500 return). Northland typically has two sailings a month; travel time is 7 to 10 days, and during November through February they may offload in Seward, rather than Anchorage, depending on ice conditions in Cook Inlet.

b. Limited availability of land for temporary trailer parks within the Municipality of Anchorage.

c. Foundation problems when land can be obtained (much undeveloped land requires excavation and backfill for a stable surface; this would be difficult when the ground and the gravel sources are frozen).

d. Problems in installing water and sewer systems during the winter. Although heavy equipment would be able to excavate utility trenches, pipe bedding and backfill would still be major problems.

e. Very limited availability of spaces in existing trailer parks and properly zoned lots; the current trend is the closing of parks as the land is converted to other uses. (The primary availability of spaces would probably be to replace existing mobile home stock that was destroyed by the event.)

f. Stockpiled mobile homes and travel trailers are of questionable suitability for local winter conditions. Alaska law has specific requirements for structural quality (snow load, etc.) and insulation of mobile homes. FEMA travel trailers are uninsulated, according to the agency's web site.

3. **MOTOR HOMES.** These are expected to play a major role in emergency housing, especially when the temperatures are above freezing.

a. These were used extensively by their owners for the Big Lake Fire, a Federally-declared disaster in the Matanuska-Susitna Borough. They were also used during a localized wintertime power outage in Anchorage that left several families without power for a week.

b. Advantages: widely owned; significant stock of rental units available in area; easily set up at the residence site; can provide full services down to freezing and shelter in weather well below freezing, as long as fuel is available (propane is critical) and power can be provided for the heater blower; and can be driven to a central location for water resupply and sewage disposal.

c. Limitations: holding tanks will freeze in cold weather; thin insulation is a concern in cold weather (however, Anchorage wintertime temperatures are usually within the usable range for the insulation).

d. USACE involvement in supporting motor homes could include contracting for temporary utility hookups and possibly for providing group bathroom facilities.

APPENDIX 15 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
DEBRIS REMOVAL

REFERENCES

a. **Maps and Charts**. See Annex B.

b. **Documents**
(1) See Basic Plan
(2) See Tabs B through E, below, for Anchorage Municipal Landfill regulations. The Mananuska-Susitna and Kenai Peninsula Boroughs have similar requirements.
(3) USACE Debris Removal Mission Guide

1. **SITUATION**

a. **General**. Each Borough/Municipality operates one or more central landfills, plus transfer stations. Refuse, including construction debris, is brought to the landfill or transfer station by private collection service, by the Municipality of Anchorage (former City of Anchorage area), or by individual residents and businesses. Transfer stations consolidate normal commercial and residential refuse and load the refuse into trailers or trucks for disposal at the central landfill. See Tab A for additional information.

b. **Threat**. As noted in Tab A, HAZUS predicts 3.63 million tons of debris generated in Anchorage for a 7.5 shallow crustal earthquake. The 8.0 deep subduction earthquake would produce 1.38 million tons of debris, throughout the three Cook Inlet area boroughs.

c. **Response Organizations**
(1) The Debris Removal mission team will work with each borough/municipality to support debris removal operations within the boundaries of that local government.
(2)

d. **Assumptions**
(1) Debris will be per HAZUS predictions.
(2) Environmental regulations will be enforced for disposal of debris.
(3) Due to the extreme amount of debris, and to the impact on local capabilities, a debris removal mission will be required.
(4) The MOA sewage treatment plant will be functional, to process leachate from the municipal landfill.

2. **MISSION**. Debris Removal consists of removing debris from public property (including that placed in the right of way by private owners/renters for the purpose of such removal); demolition and removal of damaged structures under the authority of the local government; temporary storage of material while awaiting disposal; segregating the

material according to required method of disposal; transport and final disposal of the material; and the necessary actions to turn over the process to local interests once the workload is within their capabilities.

3. **EXECUTION**

a. **Commander's Intent.** POD will assist local governments in the collection, processing, and disposal of debris generated by the earthquake. The mission will be completed when the local governments and private refuse and recycling companies are capable of handling the remaining debris operations.

b. **Concept of Operations.**

(1) USACE Response. Debris management operations associated with the shallow crustal, or deep subduction events will be executed by the Pacific Ocean Division and the Honolulu District until such time as the Alaska District is reconstituted and capable of mission execution. External support is provided by other USACE Divisions through the USACE Operations Center (UOC). Debris management operations include demolition, collection, transport, reduction, and ultimate disposal. Initial clearance of debris from public roads will be accomplished by state, borough, or local governments utilizing organic or force accounts.

(2) Planning and Response Team. A Debris Planning and Response Team (PRT) and debris subject matter expert (SME) will be deployed by HQUSACE UOC to Anchorage, AK to initiate debris project management in support of the POH. A management element consisting of an Action Officer, Mission Manager, Resident Engineer, Contract Specialist, and Mission Specialist will be deployed first, and followed as quickly as practical by additional PRT support elements. The PRT, or a subsequently deployed PRT(s) will remain engaged until operations become routine at which time the POH or POA will assume full responsibility for mission execution. End state is reached when all operations can be transitioned to state and local authorities.

(3) Debris Management Contract. A pre-awarded debris contract is projected to be in place not later than December 2002. The contract consists of a requirements portion in the amount of $100K, and an indefinite delivery / indefinite quantity portion in the amount of $29.9 M. Additional contracts may be advertised, bid, and awarded as required. In the absence of a valid ACI contract, a standard debris contract solicitation including scope of work is available on ENGLink, and on CD as part of the Debris Management Field Guide.

(4) Staging Operations and Debris Segregation. Intermediate staging areas are required for temporary storage of debris prior to placement in disposal sites because loading and haul capabilities will exceed placement rates. In addition, the debris will need to be sorted to remove materials that can not be placed in the landfill, and preferably to remove appropriate materials for recycling. Potential staging sites include approximately 90 acres formerly utilized as a landfill at the Merrill Field Airport (C&D

and woody debris only), the Anchorage Regional Landfill (ARL), and the Mat-Su Central Landfill. Approximately 20 acres for staging is currently available at the ARL with additional area becoming available as disposal cells are filled and capped. If needed, the Mat-Su Landfill has substantial additional area for staging, but would require site preparation. Segregation of the woody debris at loading, followed by chipping at the current site where cell fill material is stored at ARL will reduce both the size of the Merrill Field staging requirement and the length of time required for staging. See site maps at Tab _____.

(5) Disposal Sites. Existing landfills will be utilized for both potential seismic events. These sites include the ARL, Mat-Su Landfill, and the Central Peninsula Baling/Landfill Facility on the Kenai Peninsula. Based upon HAZUS modeling results, of the approximate total of 3.8M tons generated by the shallow crustal event, 3.6M tons will generate in the Municipality of Anchorage Borough and 200K tons will generate in the Mat-Su Borough. The Kenai Peninsula Borough should experience only minimal effects. For the deep subduction event, an approximate total of 1.3M tons of debris would be generated of which approximately 1.05M tons, 0.2M tons, and 0.125M tons would be generated in the Municipality of Anchorage, Mat-Su Borough, and Kenai Peninsula Borough, respectively.

(6) Environmental Baseline Development. Environmental baselines exist for the three landfills currently in operation. Therefore, no additional soil or groundwater sampling is required at these locations. For temporary staging areas such as the Merrill Field, or any other future disposal site developments, a detailed environmental baseline will be developed prior to any utilization. Requirements for establishing environmental baselines will be coordinated with the Alaska Department of Environmental Conservation.

(7) Hazardous/Toxic/Radiological Wastes (HTRW) and Household Hazardous Wastes (HHW). HTRW and HHW will be segregated to the extent possible before loading. Additional segregation will be accomplished at the disposal site and disposed of through utilization of a certified HTRW contractor. Common HHW such as cleaning fluids, solvents, oil and gasoline etc. will be staged with the HTRW at the landfill and disposed of with the HTRW.

(8) Debris Task Force. A Debris Task Force (DTF) will be established for the purpose of ensuring participation by all entities with stakeholder interest in successful debris management execution. FEMA Region X through the Federal Coordinating Officer's representative will chair the task force, organize the participants, schedule meetings, and set meeting agendas. The Vice Chair of the DTF will be the USACE Action Officer from the Debris PRT. The primary objective of the DTF will be to arrive at consensus regarding a debris removal plan of action. Team membership shall consist of the following:

(a) FEMA
(b) AK State Coordinating Officer (SCO)
(c) USACE

(d) EPA
(e) Natural Resources Conservation Service
(f) Solid Waste Services, City of Anchorage
(g) AK State Fire Marshall
(h) AK Dept. of Environmental Conservation
(i) Solid Waste Dept., Kenai Peninsula Borough
(j) Solid Waste Dept., Mat-Su Borough

(9) Debris Management Plan of Action. Upon receipt of a debris mission assignment from FEMA, the USACE Action Officer will lead the development of a Debris Management Plan of Action (POA) which will define specific required actions and responsibilities of the major, debris mission participants i.e. DTF. The POA should address the following:

(a) Mission - to include definition of end state defined as the point at which mission execution is transitioned to state and local governments.

(b) Concept of Operation – clearance, staging, reduction, recycling, disposal, collection scheduling.

(c) Real Estate Requirements – rights of entry (ROE), hold/save harmless assurances, etc.

(d) Environmental / Regulatory Compliance.

(e) Identification of temporary debris storage and reduction sites (TDSR) and disposal sites.

(f) HTRW and HHW handling procedures.

(g) Contracting.

(10) Debris Execution / Operations Plan.

(a) When the responding district is tasked with a Direct Federal Assistance mission for debris, the Debris PRT Mission Manager will be responsible for developing a Debris Operations Plan. This may also be called a Debris Execution Plan. This plan will detail the Corps' operations from beginning to end. It will address a detailed explanation of the debris process from the time the Corps takes possession to the time the debris is handed off to another entity. It will address how the area will be sectored, estimated execution time line, location of staging areas, location of landfills, haul distances, contractors and their work areas, method of reduction, estimated quantities, handling of HHW, handling of HTW, environmental baseline testing, coordination with state and locals, process for working on private property, definition of when mission is complete, and how the mission will be physically closed out. This document may take 3 - 4 weeks to complete due to the amount of information required. Debris operations will likely be initiated prior to completion of the plan. The MM will work closely with the Action Officer and Resident Engineer(s) to accomplish this.

(b) Tab _____ provides a description of key personnel required to successfully execute a debris mission, a description of key, functional locations and associated activities, and an organizational diagram showing numbers and types of personnel required for mission execution for both seismic events.

(11) Termination of mission. Due to the limitations on the placement rate at the landfill, the debris operation could last up to two years. Local authorities should be capable of handling the workload long before the mission is completed. All operations should be planned under the assumption that work will be completed by local authorities.

c. **Tasks.**

(1) UOC.

(a) Identify and deploy assets external to POD.

(b) Identify and deploy Debris PRT and SME.

(c) Provide supporting communications assets—VHF and/or cell phones—from nationwide assets.

(2) POD.

(a) Provide personnel as required by POH/POA. Elevate to UOC when external assets are required.

(b) Request UOC deploy Debris PRT Management Cell and SME.

(3) POH acting for POA.

(a) Execute debris management mission.

(b) Provide MIPRs for deploying personnel.

(c) Staff ERRO.

(d) Provide facility, equipment and supplies for ERRO/EFO.

(e) ID personnel assets for debris mission support.

(f) Provide logistical support to responders – rental cars, lodging, winter clothing, PCs, printers, etc.

(g) Transition debris execution mission to POA.

(4) POA.

(a) Transition to full debris mission execution from PRT.

(b) Debris mission closeout – physical and fiscal.

(5) Supporting Divisions / Districts.

(a) Provide personnel and other assets for debris mission execution.

4. **<u>ADMINISTRATION AND LOGISTICS.</u>**

a. Administration: The debris team will require special support from the following district functions:

(1) Information Management – Computer and communications support. See paragraph 5, Command and Signal for communications needs.

(2) Contracting – Advertise and award contracts and/or issue task orders.

(3) Real Estate – Assist with leases, rights of entry, hold harmless, and other private property issues.

(4) Public Affairs –Ensure that debris pick-up schedules are communicated to the public, as well as progress or problems encountered.

(5) Resource Management – tracking mission costs/available funds.
(6) Office of Council – Legal, contract, and private property issues.
(7) Safety – Oversee the safety of the debris contract operations.
(8) Security – Personal safety and security of response personnel and equipment.
(9) Engineering – Technical support for issues that may arise.

b. Logistics. The deploying Debris PRT will require support for lodging, transportation, property accountability, and possibly cold weather gear. The nature of the debris mission requires that most individuals have vehicles and other equipment, as well as requiring personnel to be exposed to the elements on a regular basis.

c. Personnel. The Debris PRT will need quality assurance personnel from throughout USACE.

(1) Each loading operation will require a QA to provide oversight. It is estimated that there will be about 30 loading operations.

(2)Each disposal site and/or staging area will require 6 QAs and it is anticipated that under the 7.5 magnitude shallow earthquake, there will be 2 landfills (Anchorage Regional Landfill and Mat-Su Regional Landfill) and at least 1 separate staging area at Merrill Field Airport in Anchorage. This would require 18 QAs. In the 8.0 magnitude deep earthquake, there will be 3 landfills (same two as above plus the Central Peninsula Baling/Landfill facility) and 1 separate staging area (same as above). The QA requirement would then be 24.

d. Public Affairs.

5. **COMMAND AND SIGNAL.**

a. Command Relationships.

(1)The Division Forward Commander (DFC) is the ERRO commander for mission execution. He/she will receive tasks from the DFO and ensure that resources are provided to accomplish the mission.

(2) The Deputy for Civil Works (DCW) appoints an ESF #3 Team Leader (TL) to be OPCON to the FCO. The debris AO and SME will be part of the TL's staff.

(3)The FCO tasks the DFC through FEMA's Operations Chief and the ESF #3 TL.

B. Signal: POA has VHF handhelds, base stations, and a portable repeater. However, additional handhelds and possibly repeaters would be needed if VHF radios are used for the mission. If cell phone service is available and reliable, that is also an option. Once again, additional equipment will be required. This section will explain the communication requirements for mission execution. Tab ____ provides the plan of operation for Information Management support.

(1) Each loading operation will require a QA to provide oversight. Each of these QAs will require the ability to communicate with the QA supervisor and the EFO. It is estimated that there will be about 30 loading operations.

(2) Each disposal site and/or staging area will require 6 QAs and it is anticipated that under the 7.5 magnitude shallow earthquake, there will be 2 landfills (Anchorage Regional Landfill and Mat-Su Regional Landfill) and at least 1 separate staging area at the Merrill Airport in Anchorage. This would require 18 QAs. In the 8.0 magnitude deep earthquake, there will be 3 landfills (same two as above plus the Central Peninsula Baling/Landfill facility) and 1 separate staging area (same as above). The QA requirement would then be 24.

(3) Each QA supervisor will require mobile communications capability. Under the 7.5 scenario, 3 QA supervisors would be required and under the 8.0 scenario, 4 QA supervisors would be required.

(4) It is anticipated that 1 resident engineer could handle the entire operation from a field perspective requiring one mobile unit or cell phone. For VHF communications, the EFO would also need to have either a mobile or base unit.

(5) If the ERRO and EFO are not co-located, and if VHF communications are used, a base or mobile unit will be required for the ERRO, as well as a mobile unit for the MM/MS to allow them to contact the EFO, as needed, for production information.

(6) The AO should also have a mobile unit or cell phone in order to maintain communications with the MM/MS team.

(7) In Summary, under the 7.5 scenario, the debris team would require 56 units and under the 8.0 scenario, the debris team would require 63 units (VHF or cell phone).

(8) With either VHF or cell phone communications, there will be some “dead areas” where these devices can not communicate.

c. Succession to Command.

d. Signal.

See Annex K for detailed communications information.

TAB A TO APPENDIX 15 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
DEBRIS REMOVAL

1. **SCOPE:**

a. The Direct Federal Assistance mission normally includes all necessary actions associated with debris clearance, removal, and disposal site management from public property in the affected area as directed by FEMA. This may include debris clearance and removal from critical access routes, roads, bridges, harbors, waterways (normally non-navigable) and rights-of-way for emergency vehicles and public access. It may include any or all of the following: pick-up, hauling, and dumping of debris; segregating and reducing debris at a landfill or a temporary disposal and reduction site (TDSR); hauling from a TDSR to a final disposal site; or managing a TDSR.

B. Debris could also be issued as a Technical Assistance mission, to provide FEMA with technical capabilities to assist State and/or local entities in debris operations. This would involve providing information on technical requirements for debris operations increasing the efficiency of such operations, efficient monitoring techniques, documentation requirements, etc. This would aid the FEMA Public Assistance Officer in determining appropriate reimbursement entitlement to State and/or local governments.

2. **GENERAL CONSIDERATIONS.**

a. The USACE model for debris is based on hurricanes, not earthquakes. It is not usable for this event.

b. HAZUS does provide an estimate for earthquake debris.

(1) The 7.5 shallow crustal earthquake would generate 3.63 million tons of debris, or 145,000 truck loads. The estimated breakdown is 30% wood, 70% concrete and steel.

(2) The 8.0 deep subduction earthquake would produce 1.38 million tons of debris, or 55,000 truck loads. The estimated breakdown is 28% wood, 72% concrete and steel. Based on population, this would amount to 42,000 truckloads in Anchorage, 8,000 in the Matanuska-Susitna Borough, and 5,000 in the Kenai Peninsula Borough.

c. In wintertime, the limited hours of daylight will restrict operations. Lighting could be used for unloading trucks, but adequate lighting for field pickup areas may not be practical (except for locations with large concentrations of debris). Average daylight: 7.3 hours in November, 5.5 hours in December, 6.4 hours in January, and 9.1 hours in February, with at least an additional hour of usable twilight each day.

d. Debris will require intermediate sorting/temporary storage sites. While the amount of burnable/chippable debris is much less than with a hurricane, the debris will need to be processed to remove both hazardous materials and items that could be recycled rather than placed in the landfill.

(1) Trees and large pieces of clean lumber will be a very small portion of the debris. Normally, wood stove owners salvage such materials very quickly.

(2) For remaining wood debris, small plants, etc., chipping and mulching capability is available in Anchorage (at Point Woronzof, west of Anchorage International Airport).

(3) Metal recycling is available in Anchorage, from several firms.

(4) Glass recycling is also available in Anchorage, with significant available capacity. (The glass is crushed for use in asphalt pavement fill, and for sandblasting material.)

(5) There is some recycling of asphalt/concrete debris, but this will be insignificant considering the amount of concrete debris generated by either event.

e. Reduction/storage space will be a major concern. Assuming 3 cy/ton for wood debris and 1 cy/ton for concrete and steel, the storage requirement would be 5.8 million cubic yards. Per the USACE debris mission guide, the net storage capacity of 8,067 cy/acre results in a requirement for 719 acres, or 1.12 square miles. (As noted below, cycling of sites will not provide a significant impact on the requirement.)

f. Total landfill capacity is not a current limitation; the 7.5 shallow crustal earthquake would move the anticipated landfill closure date from 2043 to no earlier than 2033. However, the landfill area is being developed in a series of cells, each of which is used for a five-year period.

(1) The normal schedule for constructing a new cell is to begin excavation in September, install the liner in May, then finish the sand lining and leachate system by September. Design adds 6 to 12 months to the front end of the process. This schedule avoids having freezing weather during construction of the impermeable liner and the leachate system, which are key elements in avoiding pollution.

(2) Even with reduction, earthquake debris from the 7.5 shallow crustal earthquake would probably fill a complete cell, while the 8.0 subduction earthquake would require a half cell or more.

g. Placement rate for the landfill is also a concern, as this is a restricted working area.. The maximum placement rate for a 10-hour shift has been about 2,467 tons, and this is not a sustainable rate. Additional equipment would give only moderate improvement, due to operating space considerations, but the landfill could go to 24 hour operations. (They currently have to work during nighttime in December.) However, at 5,000 tons per day, 365 days a year, the gross capacity is 1,825,000 tons per year, minus the 350,000 tons routine annual disposal. Their capability is greater in the winter; summer input runs about 1500 tons per day, while winter input is around 750 tons per day.

h. The net result is that debris storage could be required for two years or more.

i. Another special concern in Alaska would be snow mixed with the debris. The landfill must collect the liquid from the refuse through a drain system at the bottom of the cells and transport the liquid to the sewage treatment plant. Their present system is designed for direct snow and rain, plus a limited quantity of liquid from the incoming refuse. (Commercial sources are strictly limited as to the liquid content of the refuse.) Snowfall mixing with the debris would introduce more water than the landfill is designed to handle. (The landfill operators would make some allowance for water contained in organic debris, but construction debris would have to be kept fairly dry.)

(1) If the debris became mixed with snow before it could be picked up, construction debris would have to be stockpiled until the next spring.

(2) Because the final disposal could take two or three years, the stockpiles would have to be designed to keep snow from mixing with the debris. This is particularly important because much of the disposal would be handled during the winter. Keeping snow out of the debris would probably require covering stockpiles with plastic.

(3) Additional sorting would be necessary to segregate debris according to the urgency of disposal (e.g., damaged foodstuffs require fast disposal for health reasons). This may require special provisions in demolition contracts.

j. The problem of the snow/debris mixture has not been encountered in past disasters in the United States. Past missions have involved hurricanes, or California Earthquakes. When snow has been removed during winter storm emergencies, it was stockpiled and allowed to melt—it was not put into landfills. The 1964 earthquake occurred at the end of the winter; also, in 1964 there was not the current concern about seepage from landfills.

k. The 8.0 subduction earthquake would also require coordination with the Matanuska-Susitna Borough and Kenai Peninsula Borough central landfill operations. However, the amount of debris would be less for that earthquake, and those two boroughs have more land available for debris reduction and temporary storage.

l. Because of the prevalance of subsistence and recreational hunting in Alaska, debris removal operations will encounter a significant amount of live ammunition.

3.

[**USACE REQUIREMENT**. The Debris PRT will need to adjust their procedures to meet the above concerns, and must coordinate closely with the Municipality of Anchorage. Due to the long-term effort involved in the final disposal, the mission will need to be turned over to the local authorites. This will require coordination as to how the stockpiles will be set up. The Real Estate member of the PRT will particularly need to be aware of the long-term requirements.]

ANCHORAGE HAZARDOUS MATERIALS DISPOSAL POLICY

In general, only wastes generated within the Municipality of Anchorage are accepted. The list below is informational and is not considered complete. Additional information can be obtained from Solid Waste Services at (907) 343-6262 if a particular waste product is not listed.

Ammunition and Explosives
These materials are not accepted at any of the facilities. Contact the Anchorage Police Department for disposal assistance at (907) 786-8900 (911 for emergencies).

Animal Carcasses
This waste is accepted on a case by case basis at the ARL. Please contact SWS at (907) 343-6262 for more information.

Animal Feces
Large animal fecal waste will only be accepted at the ARL. Large animal fecal waste or large quantities from small animals require prior notification. Please contact (907) 343-6262 for scheduling assistance. Small quantities from small animals are accepted at CTS but must be double-bagged.

Anti-freeze
Anti-freeze can be taken to the Hazardous Waste Collection Center at either ARL or CTS (residential only).

Appliances
Non-CFC containing appliances are accepted at all facilities. Refer to Municipal Code 26.80.030 (.pdf 27.8 Kb) for CFC containing appliances. (Refrigerators, freezers and air conditioners contain CFC's.) Unusually bulky items should be brought to the ARL. Also refer to recycling.

Asbestos Waste
Asbestos waste is regulated and has detailed handling and disposal requirements. Materials are only accepted at the ARL. Refer to the SWS policy for Asbestos Waste Disposal (Tab C, below) for additional information or contact SWS at (907) 343-6262.

Asphalt
Asphalt is generally considered construction and demolition debris and is only accepted at the ARL.

Automobiles
Automobiles are not accepted. Refer to the metals recycling or scrap/junk yards.

Automobile Parts/Motors
Automobile motors are accepted at ARL only. Other automotive parts are accepted at all facilities. In both cases all fluids must have been drained. Also refer to recycling.

Barbed Wire
Barbed wire is only accepted at the ARL and must be cut into 1 foot or shorter segments prior to disposal.

Batteries - Large and Small
Recycling bins are maintained at ARL, CTS and Girdwood Transfer Station for collection of batteries. Several recycling companies also collect batteries. Also refer to recycling.

Brush and Land Clearing Waste
Pickup size loads of brush are accepted at the CTS. Larger loads of brush and land clearing waste are accepted at ARL. Brush must be cut into eight feet lengths. (The Anchorage Compost Facility should be considered for brush disposal.)

Butchering Waste
Residential non-commercial butchering waste is accepted at all facilities as long as it is a pickup truck load or smaller and does not contain liquid waste. Larger quantities should be coordinated with ARL staff for disposal. Please call (907) 343-6262 for scheduling information.

Commercial Solid Waste
Wastes generated at a place of business is considered commercial waste. Typical commercial wastes include packing materials, office paper, lunchroom waste, etc. Chemicals and other similar items should be determined whether they are considered hazardous prior to disposal. If hazardous, the items may be handled through the Hazardous Waste Collection Center at the ARL. Some materials, such as toner cartridges, can be recycled through area vendors.

Compressed Gas Cylinders/Fire Extinguishers/Propane Bottles
Compressed Gas Cylinders must be nonpressurized and the valve stem must be removed prior to disposal. Cylinders containing hazardous residues or liquids are prohibited for disposal, but will be accepted at the Hazardous Waste Collection Facility.

Computers and Accessories
Computers are accepted at all facilities.

Construction/Demolition Debris (C & D)
C & D is waste material generated during the construction or demolition of a structure. This typically includes wood, bricks, rubble, dry wall, roofing materials tiles, and concrete. This material is accepted at ARL. (Only wood and roofing materials are accepted at CTS.) In addition, residential loads at CTS and Girdwood must not exceed a pickup load size and be less than eight feet in any direction. Larger sized loads must be taken to ARL. Depending on the age of the facility being demolished, care must be taken to determine if any of the materials contains asbestos. If so, the materials must be handled in accordance with SWS Asbestos Handling Policy (Tab C, below).

Contaminated Soils
This material is only accepted at the ARL and is subject to the SWS Contaminated Soils Policy (.pdf 28.6 Kb). Contact (907) 343-6262 for additional information.

Cooking Oil and Grease
Wastes generated from households are accepted at all facilities. Wastes generated from non-household sources must be in containers less than one gallon and must pass the EPA's Paint Filter test for liquids at room temperature. Quantities larger than one gallon must be coordinated with ARL staff. Please contact (907) 343-6262 for scheduling.

Copiers
Copiers are accepted at all locations. SWS recommends that toner and toner cartridges be recycled prior to disposal.

Drums
Drums are only accepted at the ARL. The drums must be crushed and have the ends removed prior to disposal and must contain no residue of any hazardous or liquid waste.

Exit Signs
Exit signs may contain small amounts of radioactive materials. Please contact the manufacturer for proper handling and disposal.

Fish Processing Waste
Residential, non-commercial fish waste will be accepted at all facilities. Liquid waste will not be accepted at any of the facilities. Large quantities of waste in excess of a pick-up load should be coordinated with ARL staff for disposal. Please contact (907) 343-6262 for scheduling information.

Fluorescent Lights/Ballast
These materials are regulated by EPA as a "Universal Waste" and have special handling and disposal requirements. Fluorescent lights may contain mercury and the light ballast may contain PCBs. If the lights are labeled as not containing PCBs, SWS can accept up to 220 pounds per month, or approximately 350 bulbs, from any one customer or company. Contact SWS at (907) 343-6262 for additional information. Also refer to recycling.

Hazardous Waste
Hazardous wastes are strictly prohibited from disposal. These include any waste that is toxic, reactive (oxidizers), flammable or corrosive (acids/alkalines). This also includes any EPA listed wastes. Refer to the Household Hazardous Waste Center or contact SWS at (907) 343-6262 for additional information.

Household Solid Waste
Wastes generated from a household except hazardous waste are generally acceptable for disposal at all locations.

Industrial Process Waste
Wastes generated from industrial or manufacturing processes must be first determined to be non-hazardous and must not be a liquid prior to evaluating the ability for disposal. Contact SWS at (907) 343-6262 for additional information.

Lawn Mowers
Lawn mowers are accepted at all facilities. All gas and oil must be drained from the engine prior to disposal.

Liquid Waste
Liquid waste is any waste material that does not pass the EPA's Paint Filter Test. Liquid waste is prohibited in accordance with the Liquid Restriction Policy (Tab E) and Federal and State Regulations.

Medical Waste
Treated medical waste is only accepted at the ARL in accordance with the Medical Waste Disposal Policy (Tab F). Untreated medical waste is strictly prohibited for disposal. Contact SWS at (907) 343-6262 for additional information.

Neon Signs
Please contact the manufacturer for proper handling and disposal. Older lights may contain PCBs within the transformer.

Paint
Paint can be water based, latex or oil based. In all cases, paint will likely be considered a Liquid Waste and disposal is restricted. Oil based paints are a regulated hazardous waste and are prohibited from being disposed of at any facility. Paints are accepted at the Hazardous Waste Collection facilities. Contact SWS at (907) 343-6262 for additional information.

Product Piping
These materials are handled in accordance with the SWS Contaminated Soils Policy (.pdf 28.6 Kb).

Radioactive Waste
Radioactive/Nuclear waste is strictly prohibited for disposal. Additional questions regarding the proper handling and disposal should be forwarded to the US Nuclear Regulatory Commission at (800) 952-9677.

Railroad Ties
These materials may be subject to testing to determine if they are non-hazardous under the EPA TCLP test. Household generated quantities will not require testing. All materials must be no longer that eight feet in any direction. Contact SWS at (907) 343-6262 for additional information.

Refrigerators/Freezers/Air Conditioners
Refrigerators, freezers, and air-conditioning units may contain chlorofluorocarbons (CFCs) and their disposal is strictly prohibited. The units may be disposed of if a qualified, licensed technician has removed the CFCs, and documentation, of such removal, can be presented to SWS. Refrigerators and freezers are accepted at CTS and ARL for an additional $20.00 charge, per each unit, which covers removal of the CFCs.

Septage & Honey Buckets
Septage is not accepted at any of the facilities. For information on disposal of Septage, contact AWWU at (907) 564-2700.

Smoke Alarms
Some smoke alarms can contain small amounts of radioactive material. Contact the manufacturer for proper disposal instructions.

Snow Machines
Snow machines are accepted for disposal at all facilities and must have all fluids drained and batteries must be removed.

Storage Tanks
Storage tanks are handled similarly to drums. No residues of hazardous or liquid wastes may be present and the ends of the tank must be removed and the tank must be crushed. Disposal of large tanks that require additional handling should be coordinated with ARL staff. Call (907) 428-0864 for scheduling information.

Tires
Tires are accepted at all the facilities. If the quantity exceeds ten tires, the tires must be disposed at the ARL. Also refer to recycling.

Trailers/Mobile Homes
These are only accepted at the ARL. For rate and handling information contact SWS at (907) 343-6262.

Treated Timbers
Treated timbers, similar to railroad ties, must demonstrate that they are non-hazardous by passing the EPA's TCLP test. Size is limited to eight feet in any direction. Acceptance is on a case by case basis. Contact SWS at (907) 343-6262 for additional information.

Used Oil and Grease
All facilities maintain a collection point for recycling of used engine oil. Households are limited to disposal of less than 5 gallons per visit free of charge. Up to 10 gallons will be accepted at CTS with an additional charge of $1.00 per gallon for quantities over the initial 5 gallons.

MUNICIPALITY OF ANCHORAGE, SOLID WASTE SERVICES DEPARTMENT ASBESTOS AND ASBESTOS CONTAINING MATERIALS DISPOSAL POLICY

EFFECTIVE DATE: January 31, 1990
REVISED DATE: January 31, 2001

I. AUTHORITY TO ESTABLISH DISPOSAL POLICY:

The authority by which the Solid Waste Services Department establishes disposal policies and procedures and conducts disposal operations is contained within the Anchorage Municipal Code and the State of Alaska Department of Environmental Conservation's Solid Waste Management Regulation, 18 AAC 60.

The Alaska Department of Environmental Conservation Landfill Operating Permit 9621 BA001 authorizes the Anchorage Regional Landfill to accept asbestos waste materials for disposal.

II. PURPOSE:

The policy's purposes are to:

A. Assist in the prevention of emission of particulate asbestos material to the outside air when asbestos and or asbestos containing waste materials is disposed at the Anchorage Regional Landfill.

B. Comply with State and Federal regulations concerning the disposal of asbestos containing materials.

C. Insure proper record keeping.

III. APPLICABILITY:

This policy applies to any facility owner/operator, contractor of demolition, maintenance or renovation operation and transporter of asbestos and or asbestos containing waste materials and who is intending to dispose of these materials at the Anchorage Regional Landfill.

Ordinarily, waste material that is generated ONLY within the Municipality of Anchorage is accepted for disposal at the Anchorage Regional Landfill. Asbestos containing waste material that has been generated outside of the Municipality of Anchorage may, on a case by case basis, and as determined by the Asbestos Project Administrator (Tele. 907-343-6278, Fax 561-1357), be accepted at the Anchorage Regional Landfill.

IV. DEFINITIONS APPLICABLE FOR THIS POLICY:

Municipality of Anchorage Solid Waste Services
1111 East 56 th Avenue, 99518 P.O. Box 196650, Anchorage, AK 99519-6650
Telephone: (907) 343-6262
Fax: (907) 561-1357
Email: wwsws@ci.anchorage.ak.us

A. ASBESTOS CONTAINING MATERIALS (ACM) -- Commercially processed asbestos containing more than 1 percent asbestos, determined using the method in 40CFR 763, Subpart E, Appendix *E,* Polarized Light Microscopy (PLM), revised as of July 1. 1997. ACM may include the asbestos waste materials and materials contaminated with asbestos including disposable equipment, clothing and control device filters generated from renovation or demolition activities.

B. CATEGORY I NONFRIABLE ASBESTOS -- ACM in the form of asphalt roofing products, gaskets, packings and resilient floor covering which contains more than 1 percent asbestos, determined using the method in 40CFR 763, Subpart E, Appendix E, Polarized Light Microscopy (PLM), revised as of July 1. 1997.

C. CATEGORY II NONFRIABLE ASBESTOS -- NONFRIABLE ACM, excluding CATEGORY I NONFRIABLE ACM, such as asbestos cementitious shingles, wallboard and pipe that contain more than one percent asbestos, determined using the method in 40CFR 763, Subpart E, Appendix *E,* Polarized Light Microscopy (PLM), revised as of July 1, 1997, and when dry cannot be crumbled, pulverized or reduced to powder by hand pressure.

D. FACILITY -- Any institutional, commercial, public, industrial, or residential structure, installation, or building (including any structure, installation, or building containing condominiums or individual dwelling units operated as residential cooperative, but excluding residential buildings having four (4) or fewer dwelling units); any ship; and any active or inactive waste disposal site.

E. FRIABLE ASBESTOS MATERIAL -- ACM that contains more than one percent asbesto**s,** determined using the method in 40CFR 763, Subpart E, Appendix *E,* Polarized Light Microscopy (PLM), revised as of July 1. 1997, and when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.

F. NONFRIABLE ASBESTOS CONTAINING MATERIAL -- ACM that when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.

G. REGULATED ASBESTOS CONTAINING MATERIAL (RACM) -- RACM means:

1. Friable ACM;
2. Category I Nonfriable ACM which has become friable, or which will be, or has been, subject to sanding, grinding, cutting or abrading; and
3. Category II Nonfriable ACM which has a high probability of becoming, or has become, crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of a demolition or renovation operation regulated by 40 CFR 61.145, revised as of July 1, 1997, or in the course of disposal operations. For the purpose of this disposal policy, Solid Waste Services considers ALL Category II Nonfriable ACM to be RACM.

H. OWNER OR OPERATOR OF A DEMOLITION OR RENOVATION ACTIVITY – Any person who owns, leases, operates, controls or supervises the facility being

demolished or renovated and which contains ACM; or any person who owns, leases, operates, controls or supervises the demolition or renovation operation activities which involve ACM; or both.

I. ASBESTOS WASTE GENERATOR -- Any owner or operator whose act or process produces asbestos containing waste material.

J. ASBESTOS WASTE SHIPMENT RECORD -- The shipping document to be originated and signed by the waste generator, used to track and substantiate the disposition of asbestos containing waste material. Solid Waste Services Department requires ALL commercially generated ACM wastes, regardless of quantity or type, to be accompanied with a Solid Waste Services letter authorizing the ACM to be disposed at the Anchorage Regional Landfill and an Asbestos Waste Shipment Record when brought to the Landfill for disposal.

V. GUIDELINES:

A. Written notification by the asbestos waste generator or disposer is to be made to the Solid Waste Services (SWS) Asbestos Project Administrator (907-343-6262/343-6278, fax: 907-561-1357, e-mail: blairmi@ci.anchorage.ak.us *)* on all projects entailing disposal of asbestos containing material (ACM) at the Anchorage Regional Landfill. Notification can be in the form of the project notification provided to the EPA. SWS receipt of the notification will result in a letter for each asbestos project authorizing the disposal of the ACM at the Landfill and the assigning of a SWS asbestos authorization tracking number for the specific project. SWS will provide an Asbestos Waste Shipment Record (AWSR) form numbered with the assigned asbestos authorization tracking number as an attachment to each Asbestos Disposal Authorization Letter. An example AWSR is attached for informational purposes only. Both the SWS authorization letter and the AWSR are to be presented to the Landfill Scalehouse Attendant at the time the ACM is brought for disposal.

B. All ACM will be received for disposal at **only** the Anchorage Regional Landfill (ARL) at Hiland Road and Glenn Highway. No ACM of any type will be accepted at the Central Transfer Station or the Girdwood Transfer Station.

C. ALL commercially generated ACM wastes must be scheduled for disposal at the ARL to allow coordinating the ARL disposal activities for the ACM delivery. This will be accomplished by notifying the ARL General Foreman by facsimile transmission (428-1697) with the following information: ACM generating company's name; assigned SWS asbestos tracking AS number; and desired time and date the ACM waste will be arriving at the ARL. This information will be transmitted to the ARL General Foreman not later than 24 hours prior to the desired disposal time. If multiple disposals are being scheduled for a single day, notification is to be made not later than 24 hours prior to the first desired disposal time. If a transporter misses the estimated time of arrival at the ARL the load may be refused at the Scalehouse and not allowed to dump that day. The generator will

need to reschedule for the next ACM accepting day. Because of operational constraints at the ARL, there will be no non-scheduled ACM loads accepted at the ARL.

D. All Regulated and Non-regulated (nonfriable) ACM is accepted at the ARL only on Wednesday and Thursday, 09:00 A.M. - 12:00 M. and 13:00 - 16:00 P.M. Regardless of the type, no ACM will be accepted for disposal during the lunch hour, 12:00 M. to 13:00 P.M.. No asbestos will be accepted after 16:00 P.M.; the ACM transporter must remove his vehicle from the working face no later than 16:00 P.M. If the ACM transporter is not finished off loading the ACM load by 16:00 P.M., he must leave the working face and reschedule another disposal date to finish the ACM off loading. No ACM transport vehicle or trailer will be left at the working face unattended or without a means of being moved by the ACM transporter.

E. All asbestos waste generators (except the individual homeowner) are required to provide SWS a completed and signed Asbestos Waste Shipment Record (AWSR) for each asbestos project at the time the ACM is brought to the ARL for disposal.

F. It is the responsibility of the generator of the asbestos wastes to control his/her transporter while operating on the Anchorage Regional Landfill and to ensure the transporter adheres to the Landfill's rules, posted speed limits and traffic directions. Failure of the generator to exercise adequate control over the transporter(s) will result in the immediate cancellation and retraction of the Asbestos Containing Waste Disposal Authorization Letter and refusal at the Scalehouse of any subsequent loads associated with Asbestos Containing Waste Disposal Authorization.

G. All asbestos waste disposers (including individual homeowners) are required to weigh in and weigh out at the ARL Scalehouse. If a disposer has ACM waste from multiple asbestos projects loaded on one vehicle, the disposer will weigh in and weigh out for each individual project. The disposers will provide an Asbestos Waste Shipment Record for each individual asbestos project at the time of weigh in at the ARL Scalehouse.
H. Federal and State of Alaska *Municipal Solid Waste Management Regulations* and the ADEC Landfill Operating Permit prohibit the disposal of "free liquids in quantities greater than commonly found in the average household" at the Anchorage Regional Landfill. As such, all commercial ACM generators will dewater their ACM wastes to the extent that free liquid is not evident in the ACM waste container. If free liquid is evident in an ACM waste container, that container will be refused for disposal.

I. REGULATED ACM must be marked, packaged and transported in accordance with all Federal, State and Municipality of Anchorage regulations. Any ACM waste containers determined by SWS to be inadequate will be immediately removed from the Landfill by the disposer. SWS does not consider "burrito bags/rolls" to be adequate containers for disposing either regulated or nonregulated ACM at the ARL

J. NON-REGULATED (CATEGORY I NONFRIABLE) ACM does not have to be specially treated or packaged for disposal in the ARL unless it is required to be by specific criteria contained within the applicable Federal, State or MOA regulations.

NON-REGULATED ACM will, however, require both a SWS asbestos disposal authorization letter and an AWSR in order to be accepted at the ARL. If, for whatever reason, NON-REGULATED ACM is bagged, wrapped or packaged for disposal, SWS requires it to scheduled, treated and disposed as if it is actually REGULATED ACM. SWS does not consider “burrito bags/rolls” to be adequate containers for disposing either regulated or nonregulated ACM at the ARL

K. SWS requires CATEGORY II NONFRIABLE ACM to be bagged, wrapped and/or packaged the same as if it was REGULATED ACM.

L. All REGULATED ACM waste will be hand placed in a specially designated Asbestos Disposal Area of the Landfill. REGULATED ACM containers will be hand placed in the designated Asbestos Area. If the container is too large or bulky (such as a CONEX box or large steam boiler) to be safely hand placed in the designated area, a mechanical means of placement may be used. It is the owner/operator/generator/disposer's responsibility to provide the mechanical device for the placement. Dumping off of, or out of the bed of the transport vehicle is not an acceptable "mechanical means" of placement for REGULATED ACM.

M. EPA requires the landfill operator to inspect the disposal of ACM at the waste disposal site and to note any discrepancies on the AWSR. SWS Landfill personnel will inspect the following items:

1. Current Asbestos Disposal Authorization Letter;
2. Properly filled out AWSR;
3. Proper Warning Labels on the transport vehicle during unloading;
4. The ACM waste is properly enclosed or covered, wrapped or sealed in leak-tight containers;
5. There is NO free water evident in the leak-tight ACM waste container;
6. The ACM waste is properly labeled with the name of the waste generator and the location at which the waste was generated;
7. The ACM waste quantity delivered matches the quantity described on the AWSR; and
8. The ACM waste is properly placed by the disposer in the designated area.

The ARL person performing the delivery inspection will annotate the arrival and departure times of the ACM transporter and sign the AWSR for receipt of the ACM waste at the Landfill. The transporter of the ACM will provide a signed copy of the AWSR to the Scalehouse Attendant at the time of the weigh out.

N. All ACM will be covered at the end of each operating day with at least six inches of non asbestos containing material.

O. The cost of disposing of ACM waste is based on weight plus a special waste-handling fee. The special waste-handling fee will include but not be limited to time and materials for equipment cost, equipment operator's time, administrative time and cover material cost. Current charge is $45.00 per ton disposal fee plus $40.00 per one-half hour special

waste-handling fee. The disposal fee will be double, $90.00 per ton, for ACM wastes generated from outside the Municipality of Anchorage and determined to be accepted for disposal at the ARL. The special handling fee will be charged in one-half hour increments based on the time the ACM disposer arrives at and departs from the designated ACM disposal area. There is no disposal fee for ACM generated from facilities on Fort Richardson which are in direct support of the Active Duty Army's mission within Alaska. **If it is determined that a facility is NOT in direct support of the Active Duty Army's mission in Alaska, the disposal fee and special waste-handling fees will be charged for the disposal of ACM waste generated from that facility.**

P. The ARL Scalehouse Attendant will receive the signed AWSR from the disposer at the time of weigh out. The Scalehouse Attendant will attach a copy of the weigh ticket to the AWSR. These will be submitted to the Project Administrator at the beginning of the next business day after the ACM is accepted at the ARL.

Q. Scrounging at the ARL is in violation of SWS regulations and the ADEC Operating Permit. Should any individual be observed scrounging at the ARL working face, that individual will be subject to being barred from the landfill.

R. Individual private homeowners are excluded from the applicable Federal and State asbestos regulations. The Solid Waste Services Department does not advocate that private homeowners perform their own asbestos removal projects. The following procedures will apply to the disposal of small quantities of ACM by individual private homeowners only:

1. For the purpose of this policy, a small quantity of ACM is defined as no more than three bags or cartons of asbestos waste material, not to exceed one cubic yard in total volume. The bags or cartons must be of a size that is easily handled by the individual homeowner.

2. The individual home owner need not have a letter of authorization, a waste shipment record or provide the 24 hour prior notification to the ARL General Foreman to dispose of ACM. The individual homeowner will be required to weigh in and out at the Scalehouse for each visit to the Landfill. The Scalehouse Attendant will issue the individual home owner an SWS "SPECIAL HANDLING LOG" annotated with the asbestos authorization number of "AS0X999" ("X" will denote the year of the transaction) at the time the home owner weighs in at the Scalehouse. The individual homeowner will annotate his home address and residential telephone number on the "SPECIAL HANDLING LOG" when he receives the form from the Scalehouse Attendant. The individual home owner will present the "SPECIAL HANDLING LOG" to the ARL person performing the delivery inspection for receipt of the ACM waste at the Landfill. The ARL person performing the delivery inspection will annotate the arrival and departure times of the ACM, ensure the individual home owner has annotated his home address and residential telephone number, and then sign the "SPECIAL HANDLING LOG" for receipt of the ACM waste at the Landfill. The individual homeowner will present the completed "SPECIAL HANDING LOG" to the Scalehouse Attendant at the time of weigh out. The Scalehouse Attendant will use the SWS ASBESTOS AUTHORIZATION NUMBER OF "AS0X999" to log individual

homeowners into the computer. The Scalehouse Attendant will attach a copy of the weigh ticket to the "SPECIAL HANDLING LOG". These will be submitted to the Project Administrator at the beginning of the next business day after the ACM is accepted at the ARL.

3. All previously identified procedures regarding the packaging of the ACM and the days and hours it will be accepted will apply to the individual homeowner.

4. The individual home owner will be charged a minimum fee of ten dollars ($10.00) to dispose up to three bags or cartons of ACM not exceeding 440 pounds in total weight. If the individual home owner has more than three bags or cartons of ACM, or more than 440 pounds in total weight, the disposal fee will be charged at the commercial rate of $45.00 per ton and $40.00 per one-half hour for special waste handling.

5. Individual homeowners with small quantities of ACM will be allowed to go to the designated asbestos area in the Landfill in their own private car or pickup to dispose of the ACM. The Scalehouse Attendant will notify a Landfill equipment operator that an individual homeowner is arriving to dispose of ACM and the number of bags or cartons to expect. The individual homeowner will then be directed to the designated asbestos disposal area. The Landfill equipment operator will insure the individual homeowner finds the designated asbestos disposal area and disposes of the expected number of bag or cartons. The individual homeowner will place the bags or cartons himself. All bags or cartons must be properly sealed to prevent release of any materials. Broken or leaking bags or containers will be refused and the individual homeowner will be advised the ACM will not be accepted until it is properly packaged and sealed.

VI. OTHER REQUIREMENTS:

A. Solid Waste Services Department points of contact are:

1. Asbestos Containing Waste Project Administrator, Tele: 343-6278 or 343-6262, Fax: 561-1357, e-mail: blairmi@ci.anchorage.ak.us .

2. Disposal fees and billing procedure questions are to be referred to Customer Service, Tele: 343-6251, Fax: 561-1357.

3. Anchorage Regional Landfill General Foreman, Tele: 428-0864(voice mail) or 428-1027, Fax: 428-1697.

B. Failure to comply with these requirements will result in refusing the load. Solid Waste Services scalehouse attendants and operators have the authority to refuse any loads at the Anchorage Regional Landfill and the Central and Girdwood Transfer Stations.

C. All other requirements applicable for solid waste disposal - covered loads, hours, fees etc. shall apply.

CONTAMINATED SOIL, SPILL RESIDUE, DRUMS, TANKS AND ASSOCIATED PRODUCT PIPING DISPOSAL POLICY

EFFECTIVE DATE: September 1, 1988
REVISED DATE: January 31, 2001

I. AUTHORITY TO ESTABLISH DISPOSAL POLICY:

The authority by which the Solid Waste Services (SWS) Department establishes disposal policies and procedures and conducts disposal operations is contained within the Anchorage Municipal Code and the State of Alaska Department of Environmental Conservation's Solid Waste Management Regulations, 18 AAC 60, as amended through July 11, 1999.

II. APPLICABILITY:

This policy applies to the disposal of soils, residues and other solid waste associated with the release or spill of petroleum products or other chemicals. This policy is to be used as a guideline to determine the acceptability of these materials for disposal at the Anchorage Regional Landfill (ARL). Due to the potential of encountering a wide variety of petroleum products and chemicals, it will often be necessary to make a case by case determination on the acceptability of specific soils and residues.

III. PROHIBITED MATERIALS:

Under **NO** circumstances will the following be accepted for disposal at the ARL, Central Transfer Station, or Girdwood Transfer Station:

A. Contaminated soil, spill residue or other solid waste generated outside the boundaries of the Municipality of Anchorage.

B. Contaminated soil, spill residue or other solid waste in any quantity which exhibits hazardous waste characteristics for ignitability, corrosively, reactivity or toxicity, or contains listed hazardous waste, or substances which could be classified as a hazardous waste, at levels which exceed prohibitions as defined by the US Environmental Protection Agency (USEPA) or the Alaska Department of Environmental Conservation (ADEC).

C. Contaminated soil, spill residue or other solid waste which contains concentrations of Polychlorinated Biphenyls (PCB) greater than 1 mg/Kg.

D. Contaminated soil, spill residue or other solid waste, which contains free liquids as defined by the USEPA Paint Filter Test, including petroleum products, chemicals or water.

E. Contaminated soil, spill residue, or other solid waste associated with contaminated soils or spill residues in drums with a capacity greater than 10 gallons. If contaminated soil, spill residue, or other solid waste associated with contaminated soils or spill residues

is brought to the landfill in drums larger than 10 gallons, the material must meet the acceptance criteria contained in this policy document, the material will be emptied from the drums at the landfill by the person(s) who brought the drums to the landfill and the drums will then either be removed from the landfill or, if they are to be disposed, must meet the criteria contained in Section VI.

F. Sludges from any tank, floor drain, sand-grit separator or catch basin pumping or cleaning operations.

IV. LIMITATIONS FOR ACCEPTANCE OF SPECIFIC POLLUTANTS: ALL LIMITATION MEASUREMENTS ARE DRY-WEIGHT MEASUREMENTS REFERENCED TO A SOIL MATRIX.

A. Contaminated soil, spill residue, or other solid waste associated with underground storage tanks and systems having contained or containing only petroleum products, other than used oil or an unknown petroleum product, will be acceptable for disposal at the ARL provided the material is not prohibited as in Section III above and all of the following limitation are not exceeded:

1. GASOLINE
   RANGE ORGANICS (GRO) LIMIT - < 500 mg/Kg
   ALASKA TEST METHOD – AK101.
2. DIESEL
   RANGE ORGANICS (DRO) LIMIT - < 1000 mg/Kg
   ALASKA TEST METHOD – AK102.
3. TOTAL BENZENE, TOLUENE, ETHYLBENZENE AND XYLENE (BTEX)
   LIMIT - < 50 mg/Kg
   TEST METHOD – EPA 8020.
4. LEAD (leaded gasoline spills only)
   LIMIT - < 5.0 mg/L
   TEST METHOD – TCLP, OR MAXIMUM THEORETICAL LEACHATE CONCENTRATION IN ACCORDANCE WITH USEPA MEMORANDUM #36, “TOTAL ANALYSIS VS. TCLP”, DATED January 12, 1993.

B. Contaminated soil, spill residue, or other solid waste associated with underground storage tanks and systems having contained or containing used oil products, will be acceptable for disposal at the ARL provided the material is not prohibited as in Section II above and each of the following limitations are not exceeded:

1. RESIDUAL-RANGE ORGANICS (RRO)
   LIMIT - < 1000 mg/Kg
   ALASKA TEST METHOD – AK103.
2. TOTAL BENZENE, TOLUENE, ETHYLBENZENE AND XYLENE (BTEX)
   LIMIT - < 50 mg/Kg
   TEST METHOD – EPA 8020.

3. LEAD
LIMIT - < 5.0 mg/L
TEST METHOD – TCLP, OR MAXIMUM THEORETICAL LEACHATE CONCENTRATION IN ACCORDANCE WITH USEPA MEMORANDUM #36, “TOTAL ANALYSIS VS. TCLP”, DATED January 12, 1993.
4. ARSENIC
LIMIT - < 5.0 mg/L
TEST METHOD – TCLP, OR MAXIMUM THEORETICAL LEACHATE CONCENTRATION IN ACCORDANCE WITH USEPA MEMORANDUM #36, “TOTAL ANALYSIS VS. TCLP”, DATED January 12, 1993.
5. CHROMIUM
LIMIT - < 5.0 mg/L
TEST METHOD – TCLP, OR MAXIMUM THEORETICAL LEACHATE CONCENTRATION IN ACCORDANCE WITH USEPA MEMORANDUM #36, “TOTAL ANALYSIS VS. TCLP”, DATED January 12, 1993.
6. TOTAL COMPOSITE OF HALOGENATED VOLIATILE ORGANIC COMPOUNDS
LIMIT - < 100 mg/Kg
TEST METHOD – EPA 8021H.
7. POLYCHLORINATED BIPHENYLS
LIMIT - < 1 mg/Kg
TEST METHOD - EPA 8081.

C. Contaminated soil, spill residue, or other solid waste associated with underground storage tanks and systems having contained or containing an unknown petroleum product, will be acceptable for disposal at the ARL provided the material is not prohibited as in Section II above and each of the following limitations are not exceeded:
1. RESIDUAL-RANGE ORGANICS (RRO)
LIMIT - < 1000 mg/Kg
BY A COMPOSITE ANALYSIS OF ALASKA TEST METHODS AK 101, 102 AND 103.
2. TOTAL BENZENE, TOLUENE, ETHYLBENZENE AND XYLENE (BTEX)
LIMIT - < 50 mg/Kg
TEST METHOD – EPA 8020.
3. LEAD
LIMIT - < 5.0 mg/L
TEST METHOD – TCLP, OR MAXIMUM THEORETICAL LEACHATE CONCENTRATION IN ACCORDANCE WITH USEPA MEMORANDUM #36, “TOTAL ANALYSIS VS. TCLP”, DATED January 12, 1993.
4. ARSENIC
LIMIT - < 5.0 mg/L
TEST METHOD – TCLP, OR MAXIMUM THEORETICAL LEACHATE CONCENTRATION IN ACCORDANCE WITH USEPA MEMORANDUM #36, “TOTAL ANALYSIS VS. TCLP”, DATED January 12, 1993.
5. CHROMIUM
LIMIT - < 5.0 mg/L

TEST METHOD – TCLP, OR MAXIMUM THEORETICAL LEACHATE CONCENTRATION IN ACCORDANCE WITH USEPA MEMORANDUM #36, "TOTAL ANALYSIS VS. TCLP", DATED January 12, 1993.

6. TOTAL COMPOSITE OF HALOGENATED VOLIATILE ORGANICS
   LIMIT - < 100 mg/Kg
   TEST METHOD – EPA 8021H.
7. POLYCHLORINATED BIPHENYLS
   LIMIT - < 1 mg/Kg
   TEST METHOD - EPA 8081.

D. The acceptability for disposal at the ARL of any contaminated soil, spill residue, or other solid waste associated with underground storage tanks and systems containing NON-PETROLEUM products will be on a case by case basis as determined by SWS, Tele. 907-343-6262, fax 907-561-1357, e-mail wwsws@ci.anchorage.ak.us.

E. The acceptability for disposal at the ARL of any contaminated soil, spill residue, or other solid waste NOT associated with underground storage tanks and systems, such as, but not limited to, industrial processes; chemical processes; biological, thermal or chemical processes to remediate contaminated soils or products; screenings from sand-grit separators or catch basins; or filtration processes will be on a case by case basis as determined by SWS, tel.: 907-343-6262, fax: 561-1357, e-mail: wwsws@ci.anchorage.ak.us .

V. INFORMATION REQUIREMENTS TO DETERMINE ACCEPTABILITY:

A. It is the responsibility of the person(s) seeking disposal of the contaminated soil, spill residue, or other solid waste addressed above, to provide sufficient documentation to demonstrate that the material meets the requirements of this policy.

B. For contaminated soil, spill residue, or other solid waste associated with petroleum products, the following must be submitted in writing prior to SWS acceptance:

1. A site work plan showing the site location, the specific source of the contaminated soil or spill residue, the estimate of the total quantity of materials to be disposed, the type of soil involved, the screening procedures used, the location of samples collected, procedures used for taking and handling samples and quality assurance/quality control measures used. The site work plan must be in sufficient detail to demonstrate that samples were taken in accordance with the ADEC 18 AAC 78, *UST PROCEDURES AND STANDARD SAMPLING PROCEDURES MANUA*L, as amended through March 1, 1999.

2. Results of laboratory analysis conducted for each representative sample taken. All laboratory analyses must be in accordance with specified USEPA Test Methods for all relevant contaminants. The quality assurance/quality control procedures must be in accordance with the requirements of USEPA Publication SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods and the ADEC regulations and guidelines contained in 18 AAC 75, as amended through October 1, 1999 and 18 AAC

78, as amended through March 1, 1999. There may, however, be case by case situations which SWS would request taking additional samples.

3. Type, quantity and major components of the contaminant products involved.

4. Material Safety Data Sheets (MSDS) on all suspected chemical products for contaminated soil or spill residue associated with chemicals other than petroleum products.

5. The proposed method and location of remediation treatment, if required, to meet SWS disposal criteria. Sample results from both untreated and remediated soil or spill residue must be reviewed by SWS before acceptance approval will be considered.

6. The proposed/desired date for disposal of the materials.

C. The SWS may, on the basis of the above information, request more specific laboratory analyses for specific contaminants of the contaminated soil or spill residue prior to making a decision on the acceptance of the material. The SWS will provide written authorization for disposal of any contaminated soils or spill residues that are determined to be acceptable. An information copy of this authorization letter will also be provided to the ADEC STP/Polluted Sites Manager. The letter of authorization will include a SWS tracking number unique to each approved project and will explain any specialized requirements for disposal. A copy of the authorization letter must be presented to the ARL Scalehouse Attendant at the time each load of material is delivered for disposal by the contracted hauler. Failure to have a current letter of authorization will result in the load being refused at the Scalehouse. When the soil is transported to the ARL, a copy of the ADEC letter authorizing off-site transport of the contaminated soil is to be provided to the Scalehouse Attendant so that it may be included in the SWS file for this disposal authorization.

D. The following procedures apply to the hauling of the contaminated soil, spill residue, or other solid waste associated with contaminated soils or spill residue to the ARL:

1. It is the responsibility of the generator of the contaminated soils to control his/her contracted hauler while operating on the ARL and to ensure the contracted hauler adheres to the Landfill's rules, posted speed limits and traffic directions. Failure of the generator to exercise adequate control over the contracted hauler(s) will result in the immediate cancellation and retraction of the Contaminated Soils Disposal Authorization Letter and refusal at the Scalehouse of any subsequent loads associated with that Contaminated Soils Disposal Authorization.

2. The contracted hauler must make specific disposal arrangements, via facsimile transmission with the Solid Waste Disposal General Foreman, Tele. 428-0864, or 428-1027, fax 428-1697, at least 24 hours prior to bringing the contaminated soils to the ARL. The contracted hauler shall include the approximate delivery time by specifying the hour of the day. If the haul of contaminated soil or spill residue is expected to extend over several days, the contracted hauler must also coordinate daily with the Solid Waste Disposal General Foreman for directions on where to deposit the soil. Failure to accomplish either coordination or follow the directions given will result in refusing the load.

3. The haul will be made only with end dumps or end dumps with pups; belly dumps will not be allowed.

4. The trucks hauling the loads will weigh-in and out at the ARL Scalehouse.

VI. DISPOSAL OF DRUMS, TANKS AND ASSOCIATED PIPING:

A. Drums, tanks, and associated piping, which contained or were used in the storage or transport of petroleum products or other chemicals, will be accepted for disposal **ONLY** at the ARL. No drums, tanks, or associated piping segments, which contained or were used in the storage or transport of petroleum products or other chemicals, regardless of size or condition, will be disposed of, or accepted at the Central or Girdwood Transfer Stations.

B. Any drums, tanks, and associated piping, which contained or were used in the storage or transport of petroleum products or other chemicals, **MUST** be cleaned of all residual products prior to disposal in order to be accepted at the ARL.

C. All drums and tanks greater than 10 gallons in volume, **MUST** have both ends cut out and be crushed, or, if the volume is greater than 100 gallons, be cut into pieces with no single dimension greater than four (4) feet. Associated piping **MUST** be cut into pieces less than eight (8) feet in length.

VII. OTHER REQUIREMENTS:

A. Solid Waste Services Department points of contact are:

1. Contaminated Soils and Spill Residue questions, Tele - 343-6262, Fax 561-1357, e-mail wwsws@ci.anchorage.ak.us.
2. Disposal fees and billing procedure questions are to be referred to Customer Service, Tele - 343-6251, Fax 561-1357.
3. Anchorage Regional Landfill: Solid Waste Disposal General Foreman, Tele - 428-0864 or 428-1027, Fax 428-1697.

B. Failure to comply with these requirements will result in refusing the load. Solid Waste Services scalehouse attendants and operators have the authority to refuse loads at the ARL and the Central and Girdwood Transfer Stations.

C. All other requirements applicable for solid waste disposal - covered loads, hours, fees etc. –shall apply.

Municipality of Anchorage

Solid Waste Services

1111 East 56 th Avenue, 99518
P.O. Box 196650, Anchorage, AK 99519-6650
Telephone: (907) 343-6262
Fax: (907) 561-1357
Email: wwsws@ci.anchorage.ak.us

ARL Liquids Restriction Policy

The EPA Final Rule (10/09/91) on 40 CFR Part 258.28 on Liquid Restrictions reads:
§ 258.28 Liquids Restrictions.
(a) Bulk or noncontainerized liquid waste may not be placed in MSWLF units unless:
(1) The waste is household waste other than septic waste; or
(2) The waste is leachate or gas condensate derived from the MSWLF unit and the MSWLF unit, whether it is a new or existing MSWLF, or lateral expansion, is designed with a composite liner and leachate collection system as described in § 258.40(a)(2) of this part. The owner or operator must place the demonstration in the operating record and notify the State Director that it has been placed in the operating record.
(b) Containers holding liquid waste may not be placed in a MSWLF unit unless:
(1) The container is a small container similar in size to that normally found in household waste;
(2) The container is designed to hold liquids for use other than storage; or
(3) The waste is household waste.
(c) For purposes of this section:
(1) *Liquid waste* means any waste material that is determined to contain "free liquids" as defined by Method 9095 (Paint Filter Liquids Test), as described in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods" EPA Pub. No. SW-846).
(2) *Gas condensate* means the liquid generated as a result of gas recovery process(es) at the MSWLF unit.

The State of Alaska's existing regulations 18 ACC 60.360 and 18 ACC 60.365 read:
18 AAC 60.360. Liquids Restrictions.
(a) Bulk or noncontainerized liquid waste may not be placed in an MSWLF unless the waste is:
(1) household waste other than septage; or
(2) leachate or gas condensate derived from the MSWLF, and the MSWLF is designed with a bottom liner that meets the standard set in 18 AAC 60.330(c).
(b) A container holding liquid waste may not be placed in an MSWLF unless the container holds one galllon of liquid or less.
18 AAC 60.365. Co-Disposal of Sewage Solids.
This regulation pertains to sewage. Check with Solid Waste Services.

SWS is often asked what liquids can and cannot be placed in ARL. The following is SWS' policy.
?? No liquid hazardous wastes will be accepted.
?? No bulk liquids will be accepted.
?? Liquids contained in small containers (one gallon or less) normally found in a household can be accepted.

For clarification check with SWS at (907) 343-6262
(Revised 03/05/98)

Municipality of Anchorage

Solid Waste Services

1111 East 56 th Avenue, 99518
P.O. Box 196650, Anchorage, AK 99519-6650
Telephone: (907) 343-6262
Fax: (907) 561-1357
Email: wwsws@ci.anchorage.ak.us

MEDICAL WASTE DISPOSAL POLICY
EFFECTIVE DATE: January 31, 1991
REVISED DATE: January 31, 2001

I. AUTHORITY TO ESTABLISH DISPOSAL POLICY:

The authority by which the Solid Waste Services (SWS) Department establishes disposal policies and procedures and conducts disposal operations is contained within the Anchorage Municipal Code and the State of Alaska Department of Environmental Conservation's Solid Waste Management Regulations, 18 AAC 60, as amended through July 11, 1999.

II. PURPOSE:

The purpose of the **MEDICAL WASTE DISPOSAL POLICY** is to protect SWS' workers, the public and the environment from exposure to pathogens which could cause diseases. Indiscriminate disposal of infectious wastes in garbage may potentially expose refuse workers to diseases. Since package integrity cannot be ensured during collection and land filling, loss of containment may result in releasing infectious wastes into the environment, endangering the SWS' workers, the public and the environment itself.

III. APPLICABILITY:

This policy applies to any private or public medical, dental or veterinary clinic, office, facility, laboratory, hospital or service within the Municipality of Anchorage which generates, collects or processes medical waste with the intent of disposing the waste at the Anchorage Regional Landfill (ARL). Specific medical wastes generated from within the private home environment by the individual homeowner or by a commercial in-home health care service is addressed separately in Section VII of this policy. Ordinarily, waste material that is generated ONLY within the Municipality of Anchorage is accepted for disposal at the ARL. Medical waste material that has been generated outside of the Municipality of Anchorage, and processed within the Municipality, may on a case by case basis, and as determined by the Medical Waste Project Administrator (907-343-6262, Fax 907-561-1357, e-mail wwsws@ci.anhcorage.ak.us), be accepted at the ARL. It is requested that a processor who desires to process medical waste generated outside the Municipality of Anchorage with the intent to dispose of the processed waste in the ARL, contact SWS at the above number before proceeding.

IV. GENERAL POLICY:

Medical wastes shall not be disposed of at the ARL until they have been **EFFECTIVELY TREATE**D, that is, rendered biologically harmless in accordance with acceptable treatment practices as described in this policy or current industry standards and methods

and the wastes do not pose other hazards subject to Municipal, State or Federal laws or regulations. Effectively treated medical wastes will be disposed of only at the ARL, located at the Glenn Highway and Hiland Road. No medical waste, except that which is generated by the individual homeowner within the private home environment, will be accepted at the SWS' Central Transfer Station, located at 1111 East 56th Avenue in Anchorage, or the Girdwood Transfer Station, located on Ruane Road in Girdwood.

V. DEFINITION OF MEDICAL WASTE:

For the purpose of this policy, SWS embraces the definition of MEDICAL WASTE as defined in ADEC Solid Waste Management, 18 AAC 60, as amended through July 11,1999, page 111, definition number (78): " 'medical waste' means laboratory waste consisting of discarded cultures and stocks of infectious agents and associated microbiologicals; pathological wastes; selected isolation wastes; used and unused discarded sharps; animal waste; human blood, or blood products; and other wastes defined as 'regulated waste' in 29 C.F.R. 1910.1030(b), revised as of July 1, 1997."

A. ANIMAL WASTES: Discarded material originating from an animal inoculated with an infectious agent during research, production of biologicals, or pharmaceutical testing; includes the carcass, body parts, blood, and bedding of any animal known to have been in contact with an infectious agent [ADEC Solid Waste Management, 18 AAC 60, as amended through July 11,1999, page 105, definition number (10)].

B. BLOOD AND BLOOD PRODUCTS: Discarded waste human blood and blood components, including serum and plasma, and materials containing free-flowing blood and blood components [ADEC Solid Waste Management, 18 AAC 60, as amended through July 11,1999, page 106, definition number (23)].

C. CULTURES AND STOCKS: Discarded cultures and stocks of infectious agents and associated microbiologicals, including human and animal cell cultures from medical and pathological laboratories, cultures and stocks of infectious agents from research and industrial laboratories, waste from the production of biologicals, discarded live and attenuated vaccines, and culture dishes and devices used to transfer, inoculate, or mix cultures of infectious agents [ADEC Solid Waste Management, 18 AAC 60, as amended through July 11,1999, page 107, definition number (35)].

D. PATHOLOGICAL WASTES: Discarded pathological waste, including human tissues, organs, and body parts removed during surgery, autopsy, or other medical procedures [ADEC Solid Waste Management, 18 AAC 60, as amended through July 11,1999, page 112, definition number (93)].

E. SELECTED ISOLATION WASTE: Discarded waste material that is contaminated with excretions, exudates, and secretions from patients with highly communicable diseases, and that is treated in isolation, includes blood and blood components, and sharps [ADEC Solid Waste Management, 18 AAC 60, as amended through July 11,1999, page 115, definition number (123)].

F. SHARPS: Discarded implements or parts of equipment used in animal or human patient care, medical research, or industrial laboratories, including hypodermic needles; syringes, Pasteur pipettes, scalpel blades, blood vials, needles with attached tubing, broken or unbroken glassware that has been in contact with an infectious agent, slides, cover slips, and unused, discarded implements or parts of equipment [ADEC Solid Waste Management, 18 AAC 60, as amended through July 11,1999, page 116, definition number (127)].

VI. ACCEPTABLE TREATMENT METHODS OF MEDICAL WASTE:

An acceptable treatment method is any technique or process designed to change the biological character or composition of medical waste so that it is no longer infectious or

otherwise biologically hazardous. The most commonly accepted treatment methods are incineration and active steam sterilization. Use of other treatment methods, including chemical disinfection, microwave radiation sterilization and thermal inactivation, are either quite specific or unique in their applications and as such will require case-by-case prior review and written approval by the SWS before such treated waste will be accepted for disposal at the ARL. Regardless of the method of sterilizing used, it is important for the treatment operator to be fully aware that successful sterilizing treatment requires a thorough understanding that conditions for sterilization vary with load type and operating conditions.

A. INCINERATION is the process of burning the medical waste at high temperatures in a controlled environment to convert the combustible materials to noncombustible residue or ash. Incinerators which are properly designed, constructed, maintained and operated can be used for processing all medical waste categories.

B. ACTIVE STEAM STERILIZATION is the process of subjecting medical wastes to the pressures and temperatures of saturated steam inside a pressure vessel (autoclave, retort or steam sterilizer). Temperatures are maintained at the manufacturer’s designed levels and time, normally at 250 degrees F (121 degrees C) for a minimum of 90 minutes, in order to kill infectious pathogens in the waste. It is the generator's responsibility to ensure the sterilization process is operated according to accepted or manufacturer's procedures. The generator shall perform appropriate testing and records keeping to fully document effective sterilization has occurred. Solid Waste Services will **not** accept the use of active steam sterilization as a means of treating the following waste categories:

1. Pathological waste;
2. Blood, feces, urine and/or other body fluids in the free liquid state;
3. Chemical waste, including chemotherapeutic wastes; or
4. Hazardous wastes.

Active steam sterilization is an acceptable means of treating sharps, sharps containers, laboratory cultures and specimens and their containers, tubes, dishes and slides, **provided these items are rendered non- recognizable either through the process such as melt down of the item, or after being treated such as grinding of the item, but before disposal at the Anchorage Regional Landfill.** The methods of rendering these items non recognizable after having been sterilized can vary. For example, crushing and breaking the sterilized items in a compactor system, encasing the sterilized items within a hardened plaster or polymer resin mixture, processing the sterilized items through a grinding system or incineration are all acceptable methods of making these items non recognizable for disposal at the ARL. If the waste generator has other means of achieving this objective, SWS requests the generator submit documentation of the methodology for SWS review and approval prior to use for disposal.

C. APPROVED ALTERNATIVE TREATMENT METHOD FOR LIQUID BIOMEDICAL WASTE:

PREMICIDE™ TREATMENT SYSTEM (PTS)

The use of the Premicide™ Treatment System (PTS) is approved for the treatment of liquid biomedical wastes only prior to disposal at the Anchorage Regional Landfill. This approval for use is contingent on the following:

1. Generators of liquid biomedical waste who intend to use the PTS for treatment of this particular waste will advise the Solid Waste Services Department in writing of their proposed use of the PTS.
2. This system is to be used for the on-site treatment of liquid biomedical wastes. It is not to be used to treat any non-liquid wastes, pathological wastes (recognizable human tissues), chemotherapy wastes, or radioactive wastes.

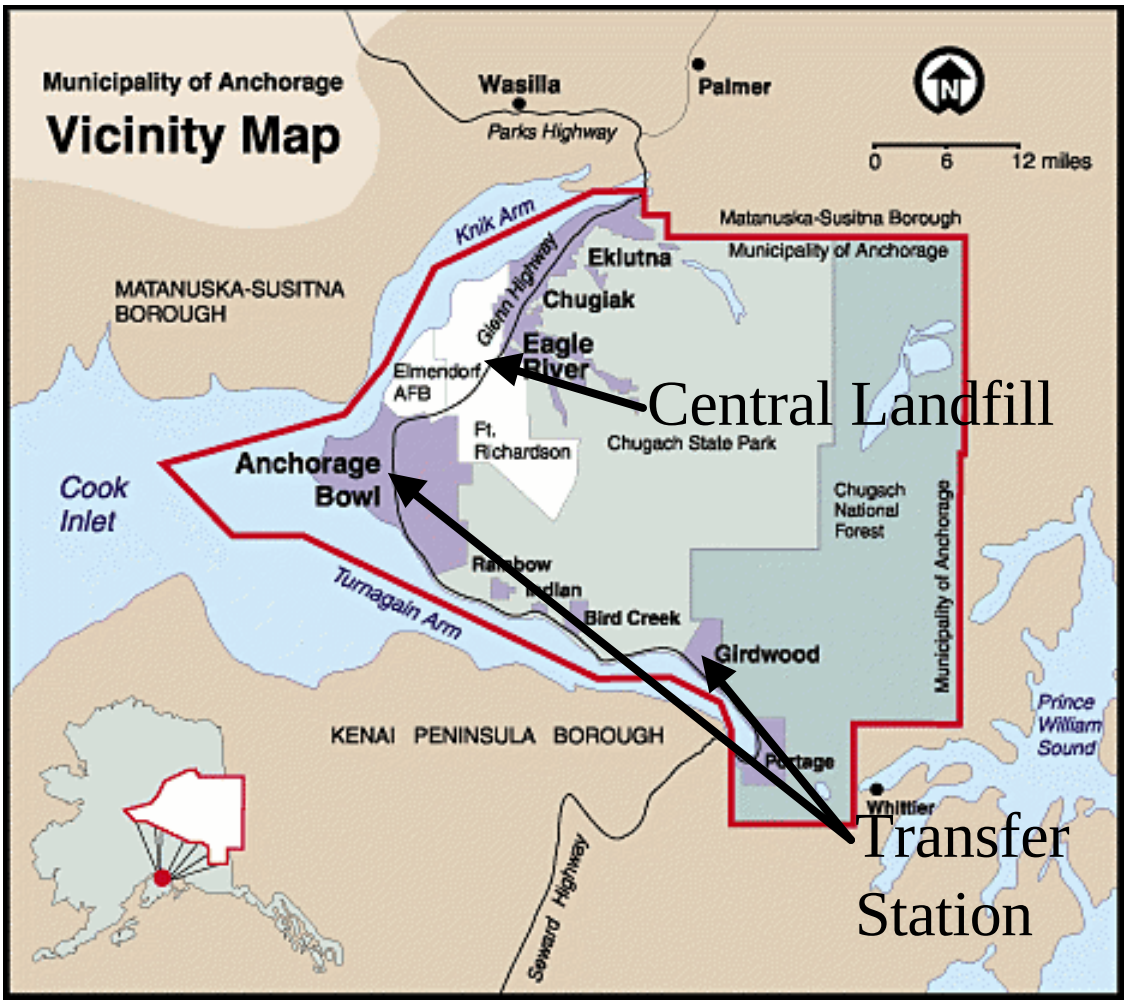
3. Free liquids must not be present in waste treated with the PTS. If free liquids are present after processing, the waste is considered to be untreated waste.
4. The liquid biomedical wastes treated with the PTS must be kept on-site for a minimum of 12 hours after treatment to achieve the appropriate Log-Kill prior to disposal at the Anchorage Regional Landfill.
5. The users of PTS for the treatment of will be prepared to produce, at the written request of the Solid Waste Services Department, Toxicity Characteristic Leaching Procedure (TCLP) analyses for primary metals, organics, acid extractables, base neutrals, pesticides, and herbicides. The costs for these analyses shall be borne by the PTS user. Liquid biomedical waste once treated with PTS become a solid and will be considered as solid waste. It should not be contained in “red” or “orange” bio-hazard bags and should not bear the bio-hazard symbol or otherwise be identified as bio-hazardous waste. It will, however, be disposed of ONLY at the ARL.

VI. PACKAGING OF TREATED MEDICAL WASTES FOR DISPOSAL:
A. The Alaska Department of Environmental Conservation Regulation, 18 AAC 60.030. MEDICAL WASTE., as amended through July 11, 1999, states "a person who disposes of a medical waste shall before disposal, (1) disinfect or sterilize, and then package it to prevent a health hazard;". No medical waste may be disposed of in the ARL unless the waste has been effectively treated, rendered noninfectious and properly packaged for disposal.
B. The residue or ash from incinerated medical waste shall be contained in leakproof, fully enclosed and tightly lidded or sealed containers. Loose residue and ash will not be accepted or disposed in the ARL. This restriction is to prevent ash from being blown about the landfill and to reduce the fire potential of disposing "hot" residue and ash.
C. The medical waste to be sterilized by active steam autoclaving shall be processed in opaque polyethylene disposable autoclave bags of a minimum 3 mil thickness. The bags shall have heat sensitive markings that change color when exposed to a sterilization temperature for a given time period. The markings will be easily and clearly discernible. Unless specifically approved for such use by the sterilization unit's manufacturer, compactors, grinders or similar devices may not be used to reduce the volume of medical waste before the waste is to be rendered noninfectious by steam sterilization. The use of these devices to reduce the volume of effectively treated waste is acceptable.
D. Effectively treated medical waste will be disposed of only at the ARL. No medical waste, except that which is generated from within the private home by the individual home owner, will be accepted at the Central or Girdwood Transfer Stations. The generator of the effectively treated medical waste is ultimately responsible for ensuring it will be disposed of at the ARL. The waste will be transported in a leak proof, tightly sealed, fully enclosed container; the container will **not** be taken to the Central or Girdwood Transfer Stations for off loading.

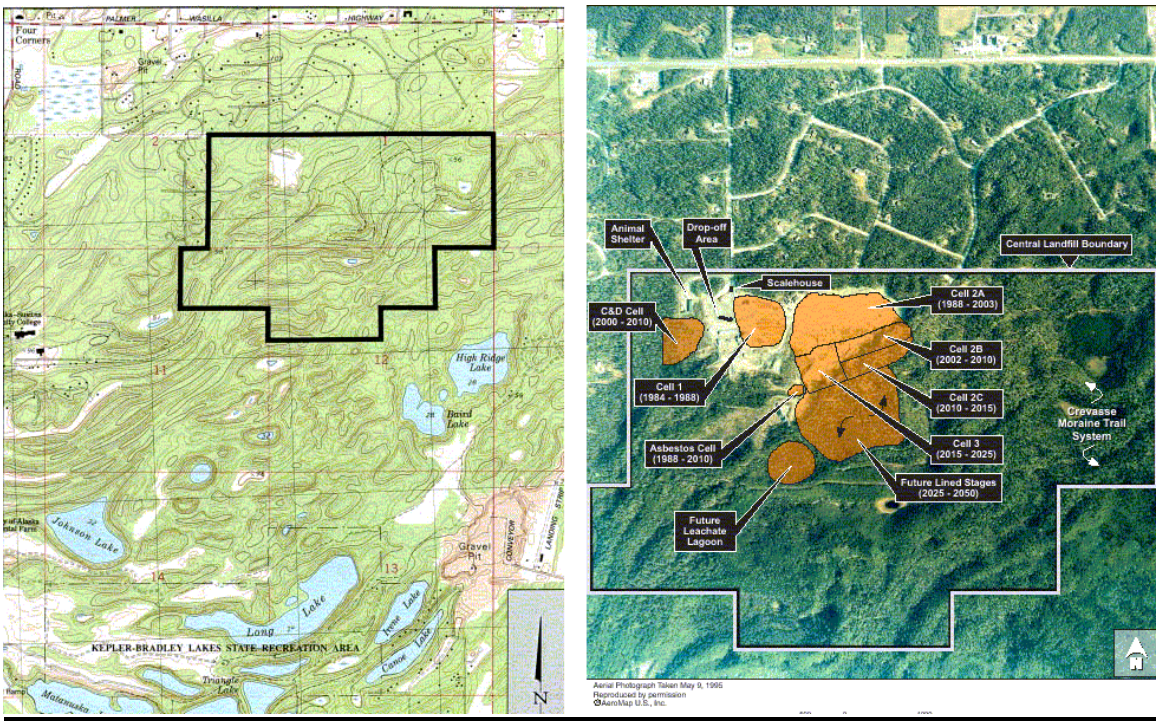
VII. MEDICAL WASTES GENERATED WITHIN THE PRIVATE HOME:
A. Medical wastes generated within the private home are not specifically addressed by the applicable regulatory agencies. It is not the intent of this policy to attempt to regulate **ALL** medical wastes generated from within the private home environment. The individual home owner or the assisted living support provider who generates in the home environment certain medical wastes is, however, responsible to ensure that waste is properly handled, containerized and, if required, effectively treated prior to disposal. The wastes of primary interest are sharps, such as lancets, syringes and needles used in the home to control diabetes, allergies or any other medical conditions; home care medical

wastes associated with infectious diseases; and medical wastes generated from in-home health care which is provided by a commercial service.
B. Used and unused sharps discarded by the individual home owner should be disposed in an appropriate sharps container that is puncture resistant, leak proof and able to be tightly sealed to prevent the sharps from spilling. Sharps collector containers suitable for home use are available from most medical supplies outlets in Anchorage. No sharps should be thrown directly into the household's garbage, they should first be properly containerized or effectively treated. Incineration services for this purpose are available to the Anchorage home owner. Information about these services is available from the person's private physician, the local telephone book, as well as the local and state health departments.
C. Medical wastes generated as a result of providing home care of persons with infectious diseases such as hepatitis B, hepatitis C or positive HIV should not be discarded into the household garbage. These wastes should be sealed in leak proof plastic containers and transported to an incineration service to be effectively treated. As with household generated sharps, incineration services for this purpose are also available to the Anchorage home owner.
D. Medical wastes generated through a commercial in-home health care service should not be discarded into the household garbage. The entity providing the in-home health care service is responsible for the effective treatment and proper disposal of any medical wastes generated from that service.

VIII. OTHER REQUIREMENTS:
A. Solid Waste Services Department points of contact are:
1. Solid Waste Services Administration Tel.:343-6262, FAX:561-1357, e-mail – wwsws@ci.anchorage.ak.us .
2. Disposal fees and billing procedures questions are to be referred to Customer Service - 343-6251.
3. Anchorage Regional Landfill General Foreman - 428-0864 or 428-1027, FAX 428-1697.
B. All other requirements applicable for solid waste disposal - covered loads, hours, fees, etc. – shall apply.



Municipality of Anchorage landfill and transfer station location map.



Matanuska-Susitna Borough landfill location map.

APPENDIX 16 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
OTHER EMERGENCY MISSIONS

1. Scope: This appendix covers other missions that USACE might perform following a catastrophic earthquake in the Anchorage area. It includes

2. Federal Response Plan Missions

a. Emergency Access (Tab F)

b. Ice: This is anticipated to be a minor mission, and would probably not require activation of a PRT. In the winter, there would be a small requirement for ice for medical supplies. In the summer, there would be a moderate demand for food preservation. However, due to the small population and the moderate temperatures (record high in Anchorage is 86 degrees F), demand is expected to be moderate.

c. Roofing: no anticipated need; this mission was designed for hurricane damages rather than earthquake damages.

d. PL 84-99 Missions.

PL 84-99 will be used primarily to support EOC operations. There are no flood control or coastal storm protection projects within the Municipality of Anchorage that would qualify for rehabilitation. Locally maintained: Flood control projects at Seward and Talkeetna, and a shore protection project at Homer, are not expected to have significant damage. A few small dams might qualify for Advance Measures;

APPENDIX 17 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
SUPPORT TO REGULAR ALASKA DISTRICT CUSTOMERS

1. Civil Works/Operations & Maintenance

The Federally-maintained civil works projects in the Municipality of Anchorage are Anchorage Harbor and Cook Inlet Navigation Channel. Both are subject to impacts from either of the planning earthquakes. (Both are deep-draft projects that support the main ocean supply route to Anchorage.)

Ninilchik and Seward Small Boat Harbors could receive some damage from the projected 8.0 subduction earthquake; Homer is farther away and is not expected to have significant damage.

Projects under construction (both O&M, General and Construction General) outside the disaster area will normally continue, but have the potential for changed conditions claims. Administration will initially transfer from Southern Area Office to Northern Area Office.

2. Regulatory see Appendix L Annex 3

3. Military Construction

4. Work for Others

ANNEX D TO ANCHORAGE EARTHQUAKE CDRP
LOGISTICS

1. **BACKGROUND.** Anchorage is the major supply point for most of Alaska, and has a healthy construction industry. Some supplies will be available for the initial response; availability will depend on the time of the year and the extent of damages. Construction supplies are highest late spring to late summer, then drop to their low point in late December due to tax considerations. Regardless of the season, immediate re-supply will be necessary to support the response effort.

2. **SURFACE TRANSPORTATION.**

a. Most freight comes through the Port of Anchorage, which was the only major Southcentral Alaskan port that was operational following the 1964 earthquake. (The other ports were damaged by foundation failures and/or Tsunamis.) An earthquake directly under Anchorage is more likely to cause damage to the port. TOTE has two sailings a week in winter, three in summer, with roll-on, roll-off vans. They can accommodate standard highway vehicles, including Deployable Tactical Operations System (DTOS) and Regional Response Vehicle (RRV) units. Sea-Land (CSX Lines) has two sailings a week for container ships; cranes are needed for offloading. Both lines provide service in about four days, from receipt in Tacoma to offloading in Anchorage. Northland Barge has two sailings a month, with a travel time of 7 to 10 days; they have to offload in Seward during heavy ice periods in Cook Inlet.

b. Whittier and Seward are also major deep-draft ports with road and railroad access to Anchorage. Seward is the alternative port for barge service in winter, when ice may prevent barge access to the Port of Anchorage. The ports themselves should not be damaged by the earthquakes, but the access routes along Turnagain Arm will probably be damaged. Emergency access should be possible within a few days.

c. Valdez is the fourth major port in Southcentral Alaska, and the closest port providing access to Anchorage from the north. However, Thompson Pass on the Richardson Highway has the highest recorded snowfall in Alaska (62 inches/ 24 hours; 298 inches/1 month, and 974.5 inches/ 1 year). Fog and blowing snow periodically close the pass for a few days at a time during the winter.

d. Major storms occur in the Gulf of Alaska during the winter months; in addition, ice chunks are common in Cook Inlet during the winter. Larger, well constructed ships are able to sail to Anchorage year around, although cargo damage is more probable and insurance rates are much higher. Smaller ships/barges would have problems during the winter; barges normally detour to Seward.

e. Haines, 775 miles from Anchorage by highway, is accessible by boats traveling the protected Inside Passage. During the winter, Chilkat Pass may be blocked by snow storms, and temperatures along the Alaska Highway may be minus 60 degrees F.

f. The Alaska Railroad carries three major items south into Anchorage: gravel (from Palmer, used for local construction), refined petroleum products from North Pole, and coal from Healy. The coal is for export from Seward to the Far East; gravel and petroleum products are for local use and would be needed for the recovery effort. The Alaska Railroad can also carry freight from the major airports in the Fairbanks area, providing a backup to Anchorage International Airport and Elmendorf A.F.B. (Depending on rail conditions along Knik Arm, the railroad may have to transfer such cargo to trucks in the Wasilla area. Material handling equipment for such transfer is not currently available in that area.)

g. The highway access from Valdez and Haines, as well as the southbound Alaska Railroad, run along the southeastern shore of Knik Arm. These routes are subject to damage during an earthquake. The greatest concerns are the bridges over Eagle River, Matanuska River, and Knik River (three highway and one railroad bridges cross each river).

h. Port MacKenzie is a new port on the west side of Knik Arm, across from Elmendorf AFB in the Matanuska-Susitna Borough. It provides a potential bypass to Anchorage for shipments to the Borough, and north to Fairbanks. The shallow draft is a limitation. In addition, there are concerns about site stability during a major earthquake.

3. **AIR TRANSPORTATION.**

a. Anchorage International Airport is a major air cargo facility. In terms of cargo aircraft landed weight, it is the top air cargo airport in the United States. It has a major hub for Federal Express, a large United Parcel Service facility, and several other international, interstate, and intrastate air cargo firms. It can accommodate all commercial cargo planes. The runways also are used by Kulis Air National Guard Base, which is the home for a squadron of C-130s.

b. Elmendorf A.F.B. is a major military air cargo port. It is capable of handling C-5A/C-17 aircraft, and supports equipment/troop deployment for the Army units stationed at Forts Richardson and Wainwright.

c. Fog may be a problem at the airports during winter. Anchorage International Airport was an initial site for the modern “low-visibility landing” system. However, the system might not be usable immediately after an earthquake.

d. Anchorage air traffic has been occasionally impacted by ash clouds from the volcanoes on the western side of Cook Inlet. If a volcano is in a pre-eruptive phase, the earthquake could set off the eruption. This would interfere with the initial air deployments to Anchorage.

4. **STAGING AREAS FOR SHIPPING.**

a. The primary staging area for air and sea transportation to Alaska is the Puget Sound area—Sea-Tac Airport for civilian aircraft, McChord A.F.B. for military aircraft, and the ports of Seattle and Tacoma for ocean freight.

b. Other Pacific Coast ports, especially at the Columbia River, could be used for supplies and equipment.

c. Daily non-stop commercial flights to Anchorage are also available from Salt Lake City, Portland (Oregon), Chicago, and Minneapolis-St. Paul. Limited non-stop service is available from San Francisco (summer) and Honolulu (scheduled charters 2 to 4 times a week, depending on the season).

d. The direct flights from Sea-Tac and Portland are most reliable during periods of reduced airport capabilities, as the airplanes used on that route are smaller.

e. Fog may also be a problem at Sea-Tac airport. In the past, airlines have had to divert planes to Portland, or occasionally use the shorter (but lower) Boeing Field.

f. Air shipments from FEMA logistics centers (California, Hawaii, Texas, and Georgia) will generally be through direct flights, rather than being transferred in the Puget Sound area.

5. **LOGISTICS OPERATIONS.**

a. General. A LERT team will be needed to receive and distribute supplies. The team will work as part of a consolidated operation, along with representatives of FEMA, the Alaska Fire Service (BLM), and GSA.

b. Alaska, primary. The primary point for receiving airlifted supplies will be the Joint Mobility Center on Elmendorf AFB. This center was designed to support military deployments, and provides facilities for deploying both military personnel and their equipment. It was the prototype site for the concept. It has hardstand parking for three C-141s, 3 C-17s, or 2 C-5s within 16 feet from the cargo marshalling area. It can also handle civilian cargo planes. Immediately adjacent is a passenger area, capable of seating 750 persons. It has stations set up for outprocessing military personnel, and provides facilities for briefings.

c. Alaska, secondary. Logistics personnel in Anchorage may have to contend with four additional sources of incoming supplies:

(1) Anchorage International Airport (commercial flights). Both Federal Express and UPS have major air cargo operations there. Since FEMA is considering expanded use of these carriers, this may be major location for receipt of materials.

(2) Port of Anchorage

(3) Alaska Railroad (rail cars are transported by special ship to Whittier, then carried north to Anchorage; gravel and fuel are shipped to Anchorage from the north)

(4) Highway (from either direction).

d. Alaska, personnel. The standard point of arrival is Anchorage International Airport. Passengers on military flights arrive and depart at a passenger terminal on Elmendorf AFB. Special flights arranged for response personnel could use either of those facilities, but probably will use the passenger side of the Joint Mobility Center. Redeployment would normally be through Anchorage International Airport.

e. CONUS. A LERT group will need to coordinate logistics at a minimum of four staging areas: Sea-Tac Airport, McChord A.F.B.; the Port of Seattle; and the Port of Tacoma. Additional sites could be involved, including Portland, Oregon and Prince Rupert, British Columbia. Seattle District will provide support for the LERT.

f. The CONUS Logistics element will need to begin ocean shipments within the first few days of operations, due to the time required for ocean shipments and the high costs of air shipments.

g. Within the impacted area, cargo transportation would be limited by access route survival and fuel rather than equipment. Personnel transport, however, would require some effort. The existing stock of GSA automobiles would not meet the demand. Rental car agencies probably could handle the requirement if their existing reservations were cancelled—which is possible for an event of this magnitude. (Under normal circumstances, agencies are often fully booked during mid-summer, and they reduce their fleets in the fall to match the seasonal drop in demand.) Fuel would be a concern for local transportation; the Electrical Power PRT might be tasked to provide emergency generators for service stations.

h. Logistics operations will need to get started very early. FEMA has set up procedures to immediately begin shipping generators to Alaska, from the stockpile in Hawaii, using one of the air freight services.

6. **PERSONAL SERVICES TO CORPS EMPLOYEES.** If commercial facilities are not available, TDY employees will receive support from the military bases (Elmendorf AFB and Fort Richardson).

7. **TEMPORARY OFFICE SPACE.** Space for the ERRO and other field activites will be identified at the time of the disaster. The ERRO location would, in part, depend on where FEMA set up their Disaster Field Office. Space could be requested on Elmendorf AFB or Fort Richardson, if necessary.

8. **OPERATING SUPPLIES.** GSA operates a local supply facility, on Elmendorf AFB. If certain supplies are not available there or elsewhere in the local area, logistics personnel in the Puget Sound area could purchase the items there and ship them directly to Anchorage.

9. **ADP.** The initial augmentation would be by deploying the Contanerized Tactical Operations System from Honolulu. Additional hardware and software acquisition would

be handled through the CONUS support in the Puget Sound area. The source would be GSA contract, to reduce processing time. Maintenance is currently provided through a contract. For augmentation, POA would initially check with the contractor to determine availability of additional personnel. Since the same contractor normally works with many agencies (the contract is through GSA rather than directly with USACE), additional contractor support may not be available for the short term. A request will need to be made by POD to the UOC for TDY assistance.

10. **COMMUNICATIONS.** The initial augmentation would be by deploying the Contanerized Tactical Operations System from Honolulu. Per ESF #2, commercial providers will have most primary links restored within a few days. (While the primary fiber optic links to the Lower 48 may not be restored, the carriers have plans-tested on several occasions-to switch to backup satellite links.) The primary requirement will be cellular telephone communications for field teams, for both efficiency and safety. Support will be requested through ESF #2.

APPENDIX 2 TO ANNEX C TO ANCHORAGE EARTHQUAKE CDRP
USACE PROPERTY ACCOUNTABILITY POLICIES AND PROCEDURES

DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
WASHINGTON, D.C. 20314-1000

REPLY TO
ATTENTION OF:

CELD-ZA (700)

01 MAY 2002

MEMORANDUM FOR COMMANDERS/DIRECTORS, MAJOR SUBORDINATE COMMANDS, AND FIELD OPERATING ACTIVITIES

SUBJECT: Standard Personal Property Accountability Business Process Procedural Guidance for Use During Emergency Operations

1. Reference memorandum, CELD-ZA, 14 Apr 98, subject: Personal Property Accountability.

2. By reference, the Commanding General directed USACE-wide implementation of standard procedural guidance for personal property accountability. This memorandum forwards this guidance to all commands for use during emergency operations.

3. Based on lessons learned from various audits, we are taking action to standardize the USACE business process for property accountability for use during emergency operations. The requirements are not new; they are covered in current Army and Engineer Regulations. The process relies on 3 primary elements:

a. Use of the Corps of Engineers Financial Management System (CEFMS)/Automated Personal Property Management System (APPMS) Business Process. The CEFMS/APPMS business process will be used wherever practical to acquire, receive, record, and activate property on both the financial records and the property book. All property acquired from whatever source, including excess and the use of the IMPAC card, will be properly authorized prior to acquisition. All non-expendable property will be bar coded, and placed under positive hand receipt control.

b. Physical Inventories. The hand receipt holder in coordination with the Property Book Officer (PBO) will inventory all property. PBOs will establish the schedule, conduct training, ensure bar code scanners are used, and accomplish the reconciliation process. Hand receipt holders will use bar code scanners to scan all property, conduct a thorough physical area search for any non-expendable personal property not bar coded, and provide the results of the inventory to the PBO. Reports of survey will be initiated and properly adjudicated for any property losses that cannot be reconciled.

c. On-site Quality Assurance Review. Commander's personal emphasis will demonstrate the importance of supply discipline, property accountability, and sound stewardship of resources. PBOs will schedule, conduct, and document periodic spot check reviews to validate that property accountability policies and processes are being followed, and that all property is properly accounted for.

4. Detailed guidance is enclosed for immediate implementation. Commanders have a major quality assurance responsibility to ensure that these processes are operating effectively. Special emphasis will be placed on both implementation and results during future audits and inspections. AAA will also perform follow-up reviews to assess the effectiveness of these procedures.

5. Point of contact is Jeff Davis, CELD-MS, (202) 761-1620.

FOR THE COMMANDER:

R.F. URENA
Act GARY L. ANDERSON
Director of Logistics

Encl
as

Standard Personal Property Accountability Business Process
Procedural Guidance for Use During Emergency Operations

1. Overview:

a. The following procedures will be followed if an emergency operations' event occurs.

b. The property book officer (PBO) will have responsibilities for non-expendable and expendable property accountability during event operations. One of the following three scenarios will be followed depending on the size of the event.

(1) If the event is not large enough to warrant an Emergency Response and Recovery Office (ERRO), and the district retains the property book operation and accountable item operation, it will be operated as under normal conditions. Use policies and procedures as stated in ER 700-1-1.

(2) If the event requires the creation of a new Corps of Engineers Financial Management System (CEFMS) system identifier (SID) then a property book will be established on the same SID. The PBO from the advance Logistics Management Planning and Response Team (LMPRT) will be appointed in writing by the division commander forward, and will use the Automated Personal Property Management System (APPMS) in the CEFMS environment. Accountability will be maintained as under normal conditions. Use policies and procedures as stated in ER 700-1-1, and CEFMS directives.

(3) If the event requires an ERRO to be established, the advance LMPRT PBO will set up a property book and accountable item operation separate from the district. For this last scenario, procedures in paragraph three for non-expendable property and paragraph four for expendable property will be used.

2. References:

a. AR 71-32, Force Development and Documentation, Consolidated Policies

b. AR 710-2, Inventory Management Supply Policy Below the Wholesale Level

c. AR 735-5, Policies and Procedures for Property Accountability

d. ER 700-1-1, USACE Supply Policies and Procedures

3. Procedures for property book (non-expendable) items (for use in third scenario in paragraph one when an event is large and an ERRO is established).

a. Wherever possible, the CEFMS/APPMS business process will be used to acquire, receive, record, and activate property on both the financial records and the property book. Caution must be exercised to ensure the correct funding is recorded for all property items.

b. Property received and bar coded will be assigned to a hand receipt holder (HRH). A block of bar code tags to be used during the event will be issued by the PBO. This block will be issued to the event PBO from the affected district PBO. Property will be received by a designated receiving agent (appointed by the PBO), including IMPAC credit card purchases. Appointment memorandums will be used to designate receiving agents. Documentation submitted to the PBO will include a copy of the signed/approved Tasker, and the Purchase Request & Commitment Form (PR&C) or the DD Form 1155, Order for Supplies or Services. This support documentation data must be placed in an officially established spreadsheet to create an official receiving document. The spreadsheet will, at minimum, contain enough information to maintain a reliable audit trail.

c. Upon receipt of the property, the PBO will place the data in an officially established spreadsheet. This spreadsheet will become the event property book and, as such, an official government document to be used in creation of an audit trail. Bar codes must also be affixed to all non-expendable personal property upon receipt. The PBO will consider the property activated on the property book when it is entered on the spreadsheet.

d. The PBO is responsible for designating receivers of all supplies and equipment, and will ensure that appropriate training is provided to personnel so designated. Appropriate training for IMPAC credit card holders will include proper emphasis on specific procedures and processes for positive visibility and control of personal property purchases.

e. The PBO must be notified of all property requiring bar-coding as soon as possible, but no later than twenty-four hours after receipt. Before property is actually utilized, the PBO must assign it to a hand receipt holder.

f. NOTE: Under the Code of Federal Regulations and the Federal Property Management Regulations, the PBO is the person authorized to approve purchases of property. The PBO either authorizes/approves purchases of property, or delegates approval to perform the task. The PBO will be responsible for delegating approval authority to sustain 24-hour operations. If this authority is abused or misused, the PBO should withdraw the authority until remedial action has been taken.

g. All bar code information is required to be transferred to the spreadsheet to complete the audit trail for receiving reports. This ensures that bar codes assigned for property are on the financial records to facilitate CFO compliance and reconciliation.

h. Closeout inventory. The hand receipt holder, in coordination with the PBO, will inventory all property at closeout of the event. PBOs will establish the schedule and a

reconciliation process to determine discrepancies between the physical inventory and the property book. The HRHs will conduct a thorough area search for any non-expendable personal property not bar coded, and provide the results of the inventory to the PBO. Discrepancies (includes loss, damage, destruction adjustment via Report of Survey, Cash Collection, AR 15-6 investigation, etc.) will be researched to account for all property. Reports of survey will be initiated and properly adjudicated for any property losses that cannot be reconciled. The event commander will serve as the approving authority on all reports of survey.

4. Procedures for accountable (expendable) items (for use in third scenario in paragraph one when an event is large and an ERRO is established).

a. Wherever possible, the CEFMS business process will be used to acquire, receive, record, and issue expendable property. Caution must be exercised to ensure the correct funding is recorded for all property items.

b. The advance PBO from the LMPRT will ensure that appointment memorandums are in place for receiving agents. A designated receiving agent will receive all property, including IMPAC credit card purchases. Documentation submitted to the PBO will include a copy of the signed/approved Tasker, and the PR&C or DD Form 1155. This support documentation data must be placed on an officially established accountable (expendable) spreadsheet to create an official receiving document.

c. Upon receipt of the property, the authorized receiving agent will process the receiving report on an officially established spreadsheet. This spreadsheet will become the event accountable (expendable) item record, and, as such, an official government document to be used in creation of an audit trail. The PBO will consider the property available for issue only when it is placed on the spreadsheet, unless emergency conditions prevail.

d. Once available for issue, the procedures for handling issuing and stocking will be followed. All items will be issued on a DA Form 3161, Request for Issue or Turn-in, or locally generated form that identifies the requestor's name, mission, and date. The quantity and nomenclature will be listed, and the requestors will sign/initial the form upon receiving the supplies. This form will be maintained on file for audit purposes. Common use items have been identified with the minimum stockage. At the beginning of the event items may be procured locally. The General Services Administration (GSA) will be used as soon as conditions warrant. Items requested but not stocked must be put on a Tasker and approved before procurement.

e. The PBO is responsible for designating receivers of all expendable items, and will ensure that appropriate training is provided to personnel so designated. IMPAC credit card training ensures proper emphasis on specific procedures and processes that must be applied for positive visibility and control of personal property purchases.

f. The PBO must be notified of all property received as soon as possible but no later than twenty-four hours after receipt. Before property is actually issued for use, the PBO should be notified.

g. NOTE: Under the CFR and FPMR rules, the PBO is the person authorized to approve purchases of property. The PBO either authorizes/approves purchases of property, or delegates approval to perform the task. The PBO will be responsible for delegating approval authority to sustain 24-hour operations. If this authority is abused or misused, the PBO should withdraw the authority until remedial action has been taken.

h. All receiving report information is required to be transferred to the spreadsheet to complete the audit trail for receipt of expendable property. This facilitates CFO compliance and reconciliation.

i. Closeout inventory. All property will be inventoried at closeout of the event by the PBO, who will conduct a thorough area search for any expendable personal property. Discrepancies (includes loss, damage, destruction adjustment via Report of Survey, Cash Collection, AR 15-6 investigation, etc.) will be researched to account for all property. Reports of survey will be initiated and properly adjudicated for any property losses that cannot be reconciled.

5. Remote warehouse locations. It might be necessary to maintain a small inventory of expendable supplies at remote locations. Procedures for issuing will be the same as described in paragraph three. Requests for restocking will be sent to the ERRO.

6. Clothing. The LMPRT will issue clothing during an event. Clothing includes, but is not limited to, red shirts, white shirts, caps, gloves, safety vests, and rain suits. These items will be issued on the DA Form 3161, or locally generated form, and require the customer's signature. Clothing will not be returned to the LMPRT, but is accountable.

7. Tollbooth tickets. An event may require purchase of tollbooth tickets. Control and sign out sheets for these tickets must be maintained. These are pilferable items and must be kept in a secure area. Follow the instruction provided in paragraph eight for disposition.

8. Mission closeout. All property (expendable and non-expendable) must be disposed in a manner based on the funding with which it was procured.

a. Federal Emergency Management Agency (FEMA). All property (expendable and non-expendable) purchased with FEMA monies must be presented to FEMA's event accountable property officer (APO) for disposal instructions. FEMA will direct one of three courses of action.

(1) FEMA wants the property returned to them. A transfer document will need to be generated listing the items. This form MUST be only signed by FEMA's APO. The signed transfer document allows removal of the items from the property spreadsheets/APPMS.

(2) FEMA will allow USACE to retain control of the items to be utilized for future events. A statement to the effect that FEMA is relinquishing these items to USACE needs to be generated with the APO's signature for audit purposes.

(3) FEMA will direct items be turned over to the local Defense Reutilization and Marketing Office (DRMO) for disposal. The APO's signature with a statement directing this disposition is needed for audit purposes.

b. USACE property. All property (expendable and non-expendable) purchased with the affected district's money will be returned to the district. A listing of this property must be presented to the affected district's PBO for entry on the property book. Any property with documentation that FEMA has allowed USACE to retain for re-utilization must be identified to the affected PBO.

c. Rental/Lease. The PBO must coordinate with the responsible organization for the return of all rental/lease property (i.e., computer equipment, copiers, cell phones). Documentation with signatures must be received showing the acceptance of the return to vendor and must be kept on file for audit purposes.

d. The property book, whether official spreadsheets or APPMS, must be zeroed out at the end of the mission. All documentation supporting property transactions for the event must be boxed and sent to the affected district's PBO. Any supplies returned to USACE for future usage must be correctly identified and boxed for shipping or storage per instructions by the affected district. All unused bar-code tags must be returned to the PBO.

ANNEX E TO ANCHORAGE EARTHQUAKE CDRP
PERSONNEL
(note: this was sent to POH for their assistance in completing.)
1. **SITUATION**

a. A catastrophic earthquake in the Anchorage area would create a major workload for USACE. In addition to the anticipated missions for FEMA, there would be a major workload increase for Alaska District due to the need to repair and/or replace damaged facilities for its regular customers. In addition, a large portion of the Alaska District's staff would be impacted by the earthquake, and many employees would need time off from work to handle urgent personal and family needs.

b. In this type of situation, the President normally signs a memorandum asking "the heads of executive departments and agencies who have Federal civilian employees in designated disaster areas resulting from . . . to use their discretion to excuse from duty, without charge to leave or loss of pay, any such employee who is prevented from reporting to work or faced with a personal emergency because of this disaster and who can be spared from his or her usual responsibilities." In addition, the memorandum normally directs "the Office of Personnel Management (OPM) to establish an emergency leave transfer program, which would permit employees in an executive agency to donate their unused annual leave for transfer to employees of the same or other agencies who were adversely affected by . . . and who need additional time off for recovery."

c. Federal personnel regulations also authorize employees to use 5 days a year of sick leave (or 13 days, if the employee has the specified minimum of accrued sick leave) to assist with medical care for family members.

d. POD does not have enough personnel available to respond to this event. The division headquarters and its four districts together have only about 5 percent of the total civilian employees of USACE, and Alaska is its largest district. In addition, the local national employees from Japan District are not available for the disaster response, due to the special conditions of their employment.

e. Augmentees will need to be prepared for Alaskan conditions, including cold weather and icy driving conditions.

f. The Pacific Region Civilian Personnel Operations Center (CPOC) is located at Fort Richardson, Alaska, within the area impacted by the earthquake. This center provides services to POD, POH, and POJ, as well as POA.

g. Due to non-availability of Alaska District members, POD's division-wide PRTs will not be functional. The Alaska District SSA PRT will not be available, although individual team members will perform ATC-20 inspections on shelters and operating facilities until personnel can arrive from CONUS and Hawaii. The POH Emergency Power PRT will not be available, because many of its members will be needed for other functions related to the earthquake response.

h. Initial personnel requirements would include:

(1) ERRO and DFO staff

(2) PRTs: Structural Safety Assessment, Emergency Power, Debris

(3) PRT augmentees: SSA inspectors; Debris QA

(4) Individual replacements for POA personnel

(5) Continuity of Operations personnel to Northern Area Office

i. Additional personnel augmentation will be requested after

APPENDIX 1 TO ANNEX E TO ANCHORAGE EARTHQUAKE CDRP MOBTDA

To be developed

Appendix 1 will be a mob TDA with time phased requirements for personnel by skill and grade level. To the extent possible, critical personnel will be identified by name and/or position for filling critical mob TDA positions.

APPENDIX 2 TO ANNEX E TO ANCHORAGE EARTHQUAKE CDRP
WORKING CONDITIONS

Work week: Initially 7x12 work week; 0700-1930; 1900-0730 (12 hours work, ½ hour unpaid lunch). No later than 2 weeks after the earthquake, this must be reduced to no more than 6 ½ days a week (preferably 6), 12 hour shifts. For longer than 30 days, the goal should be a 60 hour work week (5x12 or 6x10).

Day shift: Basic work week: Monday through Friday, 0700-1530, ½ hour lunch. Night differential of 1 ½ hours (1800-1930) applies to scheduled overtime.

Night shift: THIS IS TENTATIVE, DUE TO THE LACK OF GUIDANCE FROM OPM AS TO HOW TO HANDLE WORK DAYS THAT EXTEND PAST MIDNIGHT! Basic work week: Monday through Saturday (Sunday through Friday??). 1900-0330, ½ hour lunch. Night differential of 10 ½ hours (1900-0600) applies to scheduled regular time and overtime.

Working conditions:

Initial responders should anticipate problems with both housing and working facilities, due to extensive building damage and utilities outages. Housing may be space-available from the military. Even when hotels become available, elevators may not be operational. Heating and electrical power outages may occur. Winter operations will involve cold temperatures and limited daylight.

General:

Appendix 2 will address length of work day/week, rest, leave, and anticipated working conditions during response and recovery operations. This is a working environment assessment which should lead to development of a rest and rotation policy.

APPENDIX 3 TO ANNEX E TO ANCHORAGE EARTHQUAKE CDRP
MEDICAL STANDARDS

[Appendix 3 will address medical standards and preventive medicine requirements for deploying personnel.]

Alaska essentially has the same health concerns as other northern areas of the United States. Hepatitis may become a concern under conditions of poor sanitation; Alaska is rated as high incidence for Hepatitis A, but not for B.

Although mosquitoes are common in Alaska, they have not been involved in the spread of disease.

A major concern in Alaska is the potential for cold weather injuries. While most TDY personnel would be aware of the potential for frostbite in the winter, many will be unaware of the potential for hypothermia during much of the year. There will be special concerns for persons deployed to Northern Area Office in support of POA Continuity of Operations, as winter temperatures there may be minus 40 degrees or colder.

Health protection is, to a large extent, safety-related rather than preventative medicine. Incoming personnel will need to be briefed about the prevention and treatment of cold weather injuries, and about sanitation concerns.

Jet lag is a concern with persons arriving from other time zones. However, some studies have found that jet lag has less impact on persons traveling west (CONUS to Alaska) than on persons traveling east.

HEPATITIS INCIDENTS FOR ALASKA:

	1972*-1980	**1981-1990**	**1991-2000****	**TOTAL**
Hepatitis A	3,371	1,945	1,389	**6,705**
Hepatitis B	262	665	175	**1,102**

NOTES: * Records start in 1972
**Hepatitis A occurs in cycles; Alaska currently is in the low end of the cycle.

STATE OF ALASKA RECOMMENDED IMMUNIZATIONS:

Influenza vaccine
Annually to adults over age 65
Annually to persons in selected high risk groups (residents of chronic care facilities, persons with diabetes, heart disease,

immunosuppression, chronic lung diseases, hemoglobinopathies, and renal disease)

Measles

College students should have evidence of two doses of MMR at time of entry or evidence of immunity to measles

Tetanus Diphtheria (Td)

all adults should receive booster periodically; the standard recommendation is every 10 years

Pneumococcal vaccine

All individuals aged 55 and older

At earlier ages for persons with heart disease, chronic lung disease, diabetes, alcoholism, liver disease, immunosuppression, HIV infection

State of Alaska Immunization Program recommends a booster every 6 years

Hepatitis A1 should be offered to:

Travelers to areas of high endemicity

Military personnel

Certain ethnic and geographic populations, including Native people of Alaska and the Americas

Men having sex with men

Residents of communities experiencing an outbreak

Users of illicit injectible drugs

Hepatitis B2 should be offered to:

Those with occupational risk (health care and public safety workers)

Clients and staff of institutions for the developmentally disabled

Hemodialysis patients

Men having sex with men

Users of illicit injectible drugs

Persons with hemophilia

Household contacts of Hepatitis B carriers

Adoptees from countries with a high Hepatitis B prevalence

Populations with a high endemicity, including Alaska Natives and Pacific Islanders

Inmates of long-term correctional facilities

Persons with multiple sexual partners

Source: Section of Epidemiology, Alaska Division of Public Health, 1996

APPENDIX 4 TO ANNEX E TO ANCHORAGE EARTHQUAKE CDRP
PAY POLICY ISSUES

1. TDY:

a. Initial responders will probably receive lodging on military bases; meals could also be furnished by the bases. TDY employees and home district EOCs will be informed of the specific arrangements, to insure that the correct rates are used.

b. Persons assigned to Northern Area Office, to assist in Continuity of Operations, may use either on-base or commercial housing. This will be determined at the time of the event, and the information provided to deploying personnel and home district EOCs.

c. Anchorage and Fairbanks have seasonal variations in the per diem rate, with higher rates during the May to September tourist season. Actual cost allowance may be required, depending on conditions at the time of the event. Factors such as remaining availability of hotels, reduction of normal visitors, and increased travel for response personnel, cannot be accurately predicted.

d. Current TDY policy requires that an individual work at least 4 hours on each day in the basic work week to obtain TDY payments for that day. (Sick leave is the one exception.) This requires that time off be limited to only part of the day, or else scheduled for one of the remaining two days of the week.

2. FLSA: Federal personnel regulations require that USACE retroactively convert FLSA status if the person's temporary duties are in the opposite (exempt/non-exempt) category for 30 days or more. Because of the problems caused by this conversion, all personnel must be reassigned to appropriate duties, or returned to the home station, no later than 28 days after the original change of duties.

a. Exempt persons assigned to non-exempt duties become eligible for increased overtime pay. However, FEMA will not reimburse USACE for these costs, and FCCE funding can not be used. In effect, an unfunded obligation would be created for the home district.

b. Non-exempt persons assigned to exempt duties for 30 days would retroactively lose the extra overtime pay and other benefits.

3. Travel: During Phase II, Phase III, and for at least a week into Phase IV, speed of arrival will be a major concern for deploying personnel. During that time period, since this is an event that could not be scheduled administratively, exempt employees are eligible to be paid for travel to the disaster site during non-duty hours. Per Title 5, CFR, overtime pay for travel of exempt employees is authorized if the travel "results from an event which could not be scheduled or controlled administratively, including travel by an employee to such an event and the return of such employee from such event to his or her official-duty station." Travel of replacements for the initial personnel is not covered by

this exemption. Whenever possible, such travel will be scheduled during regular working hours.
[NOTE TO POD: USACE needs to issue guidance on this. My personal feeling is that the travel to the site is payable, but we should be able to schedule the return.]

4. Overtime is subject to two limitations:

a. Hourly limit: Exempt employees are subject to a limit of 1 ½ times the GS 10/Step 1 basic hourly rate. This does NOT include the cost of living allowance paid for regular labor of POD/POH/POA (OCONUS) employees; it does include locality pay rates for CONUS employees. In past disasters, USACE has temporarily converted exempt persons who were performing non-exempt work, citing an emergency exemption. However, current policy does not allow such a conversion, except possibly for short-term situations during the immediate response period.

b. Pay Period limit: All employees are subject to a bi-weekly maximum earnings limitation, set at the pay rate for GS-15 Step 10 (including locality pay, but excluding COLA from the calculations). During emergencies, an exemption may be granted to the bi-weekly limitation; the limitation is calculated instead on an annual basis. POD will request this exemption immediately upon a determination that a large-scale USACE response will be required.

[Appendix 4 will address pay policy issues including overtime and TDY and administrative support requirements.]

APPENDIX 5 TO ANNEX E TO ANCHORAGE EARTHQUAKE CDRP
IMA PROCEDURES

[Appendix 5 will address the use of IMAs and their requirements for support.]

POH prepare.

Considerations:

Volunteers only—no authority to activate for the disaster (possible use of 2-week annual duty if not already performed????)

Support from Fort Richardson/US Army Alaska (USARAK)

Housing—normally Elmendorf, possibly Fort Richardson. We can request through base support agreement, with possible assistance through DCO if there are problems.

NOTE: we need some IMAs early-on (MAJ, LTC) for liaison with ALCOM. Probably also a nighttime alternate to Division Forward Commander. May also need some to fill in at POD—with either the Commander or Deputy deployed, the division may need a backfill. (There could be a real problem if the division were in a gap between commanders, as with the period before BG Castro arrived.

APPENDIX 6 TO ANNEX E TO ANCHORAGE EARTHQUAKE CDRP
FAMILY SUPPORT ACTIVITIES

[Appendix 6 will address plans for keeping deployed employee families informed and providing other support as appropriate.]

POH needs to develop this as part of the ERRO staffing. We may have a secondary requirement for family support for personnel deployed to Fairbanks to support POA continuity of operations, but that area of Alaska will have reasonable communications.

APPENDIX 7 TO ANNEX E TO ANCHORAGE EARTHQUAKE CDRP
MEDICAL TREATMENT

1. Medical treatment for on-the-job injuries: Initial treatment is normally at Elmendorf Hospital, although local civilian doctors may be used if Elmendorf is busy or if the person is off base when the injury occurs.

2. Medical treatment for situations not related to official duties: Personnel would use the existing medical system in Anchorage. This includes two major civilian hospitals (Providence and Alaska Regional); two Federal hospitals serving military (Elmendorf) and Native American (Alaska Native Medical Center) residents, two minor emergency clinics (First Care in Spenard and South Anchorage), and several general care clinics. There are also small hospitals in Palmer, Seward, Soldotna, and Homer.

3. Procedures for severe injuries to TDY personnel: depends on capability of local medical system.

a. When medical system is functioning normally, local hospitals can provide most care until employees are capable of traveling. However, critical care facilities at the two civilian hospitals would be overwhelmed during the initial stages of the event.

b. During emergency conditions, the state and/or Federal evacuation system, established for civilian victims, would be used for injured employees.

c. Elmendorf AFB Hospital is a theater hospital, with the mission of receiving casualties, stabilizing them, and forwarding them to CONUS military facilities.

d. Air transport of seriously injured patients is a common situation in Alaska. Residents of outlying areas are brought in to Anchorage for major treatment, and persons requiring specialized treatment are transported to Seattle.

e. Transport of deceased personnel to the Lower 48 is also a standard procedure in Alaska.

4. Medical Benefits under the Federal Employees Compensation Act (FECA)/Worker's Compensation:

a. Payment may be made for any medical services needed for treatment or to counteract or minimize the effects of any condition, disease, or injury determined to be causally related to employment with the Federal Government. There is no limit on the extent of medical treatment payable nor is there a time limit for which they are payable if the need for medical treatment can be substantiated and connected to the employment-related injury or disease. Payment will be made for first aid, medical treatment, hospitalization, physician's fees, drugs, appliances, or other supplies directed for use by a qualified physician. Bills must be submitted within 1 year of the date of service, one year

beyond the calendar year in which the expense was incurred, or 1 year beyond the calendar year in which the claim was accepted, whichever is later, or they will not be paid. The employee may elect to be treated by a government physician (if available) or by a duly qualified physician of his or her choice who is not excluded. Although payment for preventative treatment is generally not provided, payment may be made for certain specified conditions even though such treatment is designed, in part, to prevent further injury. The specific conditions when payment may be made include: complications of preventative measures which are provided or sponsored by the agency, such as an adverse reaction to a prophylactic immunization; actual or probable exposure to a known contaminant due to an injury, thereby requiring disease specific measures against infection such as tetanus antitoxin injections for puncture wounds; conversion of tuberculin reaction from negative to positive following exposure to tuberculosis in the performance of duty; and where injury to one eye has resulted in loss of vision, periodic examination of the uninjured eye to detect possible sympathetic involvement of the uninjured eye at an early stage. There shall be no charge for occupational health or Office of Workers' Compensation Programs (OWCP) care for DoD employees treated at Federal government medical facilities.

b. Employees with job-related disabilities -- any disability (temporary or permanent, partial or total) incurred as a result of a job-related disease or condition, as well as an on-the-job traumatic injury -- may be entitled to continuation of pay; disability compensation; schedule awards (payment for loss of certain internal and external organs, members, or functions of the body); and/or vocational rehabilitation.

5. Federal employee death benefits for persons killed while in support of disaster operations will be as specified in OPM regulations.

a. If an employee dies away from home, the cost of transporting the body to the place of burial will be paid in full. Up to $800 is paid for a deceased employee's funeral expenses. Also, an additional sum of $200 is paid to the personal representative of the decedent for reimbursement of the expense of terminating the deceased employee’s Federal employment status.

b. Payments for accidental death will not be made if death is caused:

(1) wholly or partly, directly or indirectly, by disease or bodily or mental infirmity, or by medical or surgical treatment or diagnosis thereof, or

(2) wholly or partly, directly or indirectly, by ptomaine or by bacterial infection, except only septic infection of and through a visible wound sustained solely through violent, external and accidental means, or

(3) wholly or partly, directly or indirectly, by hernia, no matter how or when sustained, or

(4) directly or indirectly by war (declared or undeclared), any act of war, or any aggression by armed forces, against the United States, in which nuclear weapons actually are being used, or

(5) directly or indirectly by war (declared or undeclared), any act of war, armed aggression, or insurrection, in which the employee is, at the time the bodily injuries are sustained, in actual combat, or

(f) by or a result of intentional self-destruction or intentionally self-inflicted injury, while sane or insane, or

(g) by or a result of the self administration of illegal or illegally obtained drugs.

NOTE: need some research as to our exact authorities and responsibilities—particularly in regard to non-duty activities and transport of remains. What is funding source? How would personal misconduct impact? (We had one TDY fatality in-state which turned out to be a DWI incident)

[Appendix 7 will address plans for medical treatment for employees in the area of operations. In addition, plans will be developed for employees severely injured or killed while deployed in support of Corps operations.]

TAB A TO APPENDIX 7 TO ANNEX E TO ANCHORAGE EARTHQUAKE CDRP
BENEFITS UNDER FECA/WORKER'S COMPENSATION

Worker's Compensation (Federal Employees' Compensation Act) provides monetary compensation, medical care and assistance (attendant allowances), vocational rehabilitation, and reemployment rights to federal employees who sustain disabling injuries as a result of their federal employment. FECA also provides for a fixed payment for the deceased employee's funeral expenses and for compensation benefits to qualified survivors of the decedent in cases of employment-related death.
FECA Benefits. Employees may be eligible for six basic types of benefits under FECA: Medical benefits (including transportation expenses incurred); Continuation of pay; Disability compensation; Schedule awards; Vocational rehabilitation; and, Death benefits that include allowable funeral benefits and survivor compensation. The program applies to any disability (temporary or permanent, partial or total) incurred as a result of a job-related disease or condition, as well as an on-the-job traumatic injury.

Medical Benefits. Payment may be made for any medical services needed for treatment or to counteract or minimize the effects of any condition, disease, or injury determined to be causally related to employment with the Federal Government. There is no limit on the extent of medical treatment payable nor is there a time limit for which they are payable if the need for medical treatment can be substantiated and connected to the employment-related injury or disease. Payment will be made for first aid, medical treatment, hospitalization, physician's fees, drugs, appliances, or other supplies directed for use by a qualified physician. Bills must be submitted within 1 year of the date of service, one year beyond the calendar year in which the expense was incurred, or 1 year beyond the calendar year in which the claim was accepted, whichever is later, or they will not be paid. The employee may elect to be treated by a government physician (if available) or by a duly qualified physician of his or her choice who is not excluded. Although payment for preventative treatment is generally not provided, payment may be made for certain specified conditions even though such treatment is designed, in part, to prevent further injury. The specific conditions when payment may be made include: complications of preventative measures which are provided or sponsored by the agency, such as an adverse reaction to a prophylactic immunization; actual or probable exposure to a known contaminant due to an injury, thereby requiring disease specific measures against infection such as tetanus antitoxin injections for puncture wounds; conversion of tuberculin reaction from negative to positive following exposure to tuberculosis in the performance of duty; and where injury to one eye has resulted in loss of vision, periodic examination of the uninjured eye to detect possible sympathetic involvement of the uninjured eye at an early stage.

There shall be no charge for occupational health or Office of Workers' Compensation Programs (OWCP) care for DoD employees treated at Federal government medical facilities. However, DoD Components shall continue to bill, at the interagency rate, for OWCP care provided to non-DoD employees by a DoD medical treatment facility. The interagency rate charge shall be processed through the OWCP Revolving Fund.

Continuation of Pay (COP). An employee who sustains a disabling, job-related traumatic injury is entitled, under certain circumstances, to COP for a period not to exceed 45 calendar days pending OWCP's determination of the employee's claim for compensation under FECA. To qualify for COP, the traumatically injured employee or someone authorized to act on his or her behalf must file written notice of injury on a Form CA-1, "Federal Employees' Notice of Traumatic Injury and Claim for Continuation of Pay/Compensation," within 30 calendar days after the date of injury. COP is not compensation for FECA purposes and is subject to all applicable taxes and payroll deductions. The injured employee or someone authorized to act on his or her behalf must provide written medical evidence to support the disability within 10 calendar days of submitting the CA-1. COP is not applicable for occupational illnesses and diseases claims. The employee

must make a separate claim for monetary compensation on a Form CA-7, "Claim for Compensation on Account of Traumatic Injury or Occupational Disease," with Form CA-20, "Attending Physician's Report," if the disability exceeds 45 calendar days or results in any permanent disability.

Disability Compensation. Employees may be eligible for one or more of several types of wage loss compensation. Disability benefits are classified based on the nature and extent of disability incurred and are categorized as temporary total, temporary partial, permanent total, or permanent partial.

Compensation Rates. Generally, in cases of total disability, an employee is entitled to compensation equivalent to two-thirds of the weekly salary if there are no dependents, or three-fourths of the salary if there are one or more dependents (see glossary for definition of dependents). Compensation is tax free. In establishing a person's wage rate, the law recognizes certain additional amounts that may be included in salary, such as premium pay, night and Sunday differential, holiday pay, hazard pay, dirty work pay, quarters allowances and post differential for overseas employees. Overtime pay is not included except for administratively uncontrollable work covered under 5 U.S.C. 5545(c)(2) (reference (e)). Under 5 U.S.C. 5112 (reference (e)) the maximum compensation rate may not exceed more than 75 percent of the monthly pay of the maximum rate of basic pay for GS-15 (excluding locality pay).

Duration of Compensation. Compensation payments for total disability may continue as long as the disability continues and suitable modified work is not available; in some instances, for the lifetime of the employee. As with medical care, there is no total dollar maximum or time limitation.

Loss of Wage-Earning Capability (LWEC). When an injured person suffers a wage loss because of disability that is less than total, compensation may be paid for this partial loss of wages or wage-earning capacity. Provisions of 5 U.S.C. 8115 (reference (a)) govern the determination of wage-earning capacity. When a claimant has completed 60 days of employment in a suitably modified, formally classified position, the agency should complete a loss of wage-earning capacity (LWEC) worksheet and request that a formal LWEC rating be issued. If the position carries a pay rate less than that of the date of injury, compensation will be payable for a loss of wage earning capacity. Such a formal rating can be changed only under very limited circumstances.

Schedule Awards. 5 U.S.C. 8107 (reference (a)) also provides for payment of compensation for permanent loss or loss of use (either partial or total) of certain internal and external organs; members or functions of the body such as arms, legs, hands, feet, fingers, toes, eyes; or loss of hearing or loss of vision. Each extremity or function has been rated for a specific number of weeks of compensation that can be paid in addition to full salary. If a serious disfigurement of the head, face, or neck results from a job-related injury, an award may also be made for such disfigurement, not to exceed $3,500. Multiple schedule awards may be paid concurrently for different body parts or paid concurrently with the Office of Personnel Management (OPM) retirement benefits. Employees can receive schedule award payments concurrently while receiving severance pay for involuntary separation from their employment. Schedule awards can be paid even if the employee returns to work. However, employees cannot receive wage loss compensation and schedule award benefits concurrently for the same injury.

Vocational Rehabilitation. If the injured employee suffers a vocational handicap due to the injury and cannot resume usual employment, OWCP-directed vocational rehabilitation may be arranged to assist in training for work that the employee can do. The cost for rehabilitation is paid from the Employees' Compensation Fund and charged back to the DoD Component. Rehabilitation service is supervised by OWCP, but is usually provided in cooperation with state and private rehabilitation agencies. In addition to the cost of rehabilitation, an employee may qualify for a monthly allowance of up to $200 necessary for his or her personal maintenance. Employees are also entitled to collect total disability payments during their rehabilitation period.

When the rehabilitation program is completed, the claimant is expected to actively seek employment. Vocational rehabilitation is not confined to formal retraining. It includes the employment efforts of vocational rehabilitation counselors and compensation specialists. An offer of a position (employment or reemployment) for which an injured employee is medically qualified is usually the more expedient and less costly method of rehabilitation.

Survivor Compensation Benefits. If the employee's death was due to the job-related injury, dependents are entitled to the following benefits:

Widow or Widower and No Eligible Child. The widow or widower is eligible for 50 percent of the deceased employee's regular pay.

Widow or Widower with Eligible Children. The widow or widower is eligible for 45 percent of the deceased employee's regular pay, plus an additional 15 percent for each child -- to a maximum not to exceed 75 percent of the deceased employee's regular pay.

Eligible Children and No Widow or Widower. An orphaned child is eligible for 40 percent of the deceased employee's regular pay, plus 15 percent for each additional orphan - not to exceed 75 percent of the deceased employee's regular pay. Benefits are divided among the children, share and share alike.

Surviving Legal Dependents. If a deceased employee leaves no widow, widower, or child, benefits are paid to the surviving legal dependents of this employee as specified in FECA (5 U.S.C. 8133, 8134 (reference (a)).

Remarriage or Death. Widows and widowers receive benefits until death, or remarriage, if they are under age 55. If a widow or widower under age 55 remarries, a lump-sum payment equal to 24 times the monthly compensation he or she is receiving at the time of remarriage is made. If the widow or widower is age 55 or older, compensation continues as long as he or she lives, regardless of remarriage.

Orphaned Children. Orphaned children receive benefits until they die, marry, or reach the age of 18. If a surviving child pursues higher education on a full-time basis (generally 12 semester hours) payments will continue until he or she has completed four years of study beyond the high school level or until he or she is 23 years of age. Payment will not extend beyond the semester or enrollment period in which the surviving child reaches 23 or completes his or her fourth year of higher education, whichever occurs first.

Funeral Expenses. Up to $800 is paid for a deceased employee's funeral expenses. If the employee dies away from home, the cost of transporting the body to the place of burial will be paid in full. Also, an additional sum of $200 is paid to the personal representative of the decedent for reimbursement of the expense of terminating the deceased employee’s Federal employment status.

TAB B TO APPENDIX 7 TO ANNEX E TO ANCHORAGE EARTHQUAKE CDRP
FEDERAL EMPLOYEE DEATH BENEFITS

Federal Employees Group Life Insurance (FEGLI)
· Benefits are payable if death occurs while employee is insured and if beneficiary presents proper notice and proof (death certificate, claim form, etc.).
· Amount of life insurance in force is paid no matter how death is caused. (Benefits will not be paid to any person who wrongfully caused the death even though the person would otherwise be entitled.)
· Accidental death benefit is payable unless cause of death falls under one of the exceptions.*
· Unless the employee designates a specific beneficiary, FEGLI benefit is paid according to the order of precedence mandated by law (e.g., to employee's widow(er); if none, to employee's child or children in equal shares; if none, to employee's parents, etc.).

Retirement - Civil Service Retirement System (CSRS)
· A monthly survivor annuity is payable to an eligible spouse if an employee had completed at least 18 months of creditable civilian service and died while subject to CSRS deductions. The surviving spouse must have been married to the employee for at least 9 months at time of death, or have a child born of the marriage. If the death was accidental, the length of marriage requirement is deemed satisfied.
· The guaranteed minimum amount (typically, less than 21 years 11 months service) of survivor annuity is 55% of the lesser of 40% of employee's high-3 average salary at date of death; or the amount of annuity that would have been paid had employee worked until 60 years old at the same high-3.
· When the widow's or widower's annuity based on the employee's actual service (typically, at least 21 years 11 months service) would be more than the amount under the guaranteed minimum provision, the spouse receives 55% of the annuity that would have been earned by the employee at date of death.
· Children receive monthly annuity until the children marry or become age 18, whichever occurs first. Unmarried dependent children 18 to 22 if attending an accredited educational institution full time are also eligible. Unmarried disabled children are also covered if the disability occurred before age 18.

Retirement - Federal Employees' Retirement System (FERS)
. The basic employee death benefit is payable if the employee had completed at least 18 months of creditable civilian service and died while subject to FERS deductions. The surviving spouse must have been married to the employee for at least 9 months at time of death or have a child born of the marriage. If the death was accidental, the length of marriage requirement is deemed satisfied.
· If the deceased employee had at least 18 months of creditable civilian service, the basic employee death benefit amount is a lump sum payment (currently $23,386.98) plus a lump sum equal to the higher of half of the final salary at the time of death or half of the high-3 average salary.
· If the deceased employee had 10 or more years of creditable service the basic employee death benefit amount is payable plus a survivor annuity equal to 50% of the employee's basic FERS annuity at time of death.
· Social Security benefits are payable if the deceased employee had earned sufficient credit (normally one and a half to ten years) covered by Social Security.
· Children receive a monthly survivor annuity reduced by the amount of any Social Security survivor benefit payable (also applicable to CSRS-Offset) until the children marry or become age 18, which ever occurs first. Unmarried dependent children 18 to 22 if attending an accredited educational institution full time are also eligible. Unmarried disabled children are also covered if the disability occurred before age 18.

Leave, Final Pay & Thrift Savings Plan
· Employee's beneficiary receives lump sum payment for unused annual leave accrued.
· Sick leave balance is applied in the calculation of a survivor annuity if employee was under CSRS.
· Unpaid compensation is paid to employee's beneficiary.
· Designated beneficiary receives amount in TSP account (with options, for example, surviving spouses may transfer balance to IRA).

Federal Employees' Compensation Act (FECA)
· FECA benefits are not available if the survivor elects to receive annuity under CSRS/FERS.
· If death occurs from injury sustained in performance of duty, survivors are entitled to tax-exempt compensation payments.
· Surviving spouse is compensated at rate of 50% of the deceased employee's salary. If children are eligible in addition to the spouse, compensation is 45% plus additional 15% for each child, to maximum of 75% of employee's regular pay.
· Government pays up to $800 funeral and burial expenses. If employee dies away from area of residence, cost of transporting body to place of burial is also paid. In addition, a $200 allowance is paid in consideration of terminating the deceased's status as Federal employee.
· FECA prohibits payment of compensation and certain other Federal benefits at the same time. For example, military payments in the "Black Hawk" incident had to be deducted from FECA payments to avoid dual benefits.

Death Gratuity Payment
· Personal representative of employee in entitled to $10,000 payment minus the amount payable under the Federal Employees' Compensation Act (normally equates to $1,000).
· Payment applies to cases in which a civilian employee dies from an injury sustained in the line of duty on or after August 2, 1990.
. The personal representative is determined by state law.

Federal Employees Health Benefits Program (FEHBP)
· Survivor may continue enrollment in the FEHBP if the deceased employee was enrolled for self and family at the time of death and at least one family member is entitled to a monthly annuity as the survivor of the deceased employee.
· If the surviving spouse of a deceased FERS employee is not eligible for monthly survivor annuity benefits (because the employee had less than 10 years of creditable service), he or she may, nonetheless, elect to continue coverage provided the surviving spouse is eligible for the basic employee death benefit.

Tax Benefits
· Proceeds of FEGLI policies that are paid as a death benefit to a designated beneficiary are not taxable as income to the beneficiary.
· Survivor benefit payments under CSRS and FERS are taxable as income.
· FECA benefits are non-taxable.

Counseling
· The DoD Field Advisory Services Office Benefits and Entitlements will provide a counselor to assist the family with information and completion of claims.
· The counseling session provides opportunity to describe types of benefits payable; provide and assist in completing required benefit forms; answer questions regarding entitlements; discuss claim processing time, including questions about child/children's annuity; advise survivor of need to contact the Social Security Administration to determine present or future entitlement to Social Security benefit; explain the effects of deposits and redeposits for civilian and/or military service and assist in preparing related election forms.
· A step-by-step reference guide (Personnel Processing Guide for Death in Service) is available to all DoD operating personnel offices; developed and published by the Civilian Personnel

Management Service, Field Advisory Services Division, Benefits and Entitlements Branch (available on web).
· Reference guide provides detailed guidance on retirement, life insurance, health insurance, thrift savings, unpaid compensation, death resulting from work injuries, social security, veterans affairs, tax information, sample letters, and order of precedence rules.
· The Office of Personnel Management and the Social Security Administration provide easy to read death benefit pamphlets covering their respective systems.
· Catastrophic events such as the Oklahoma bombing produce extraordinary support efforts from all levels of the organization (e.g., established contact with local counseling activities to provide initial and follow-up counseling sessions to employees and family members; raised contributions from fellow employees to provide emergency relief to families; arranged for free legal advise).
· Professional grief counseling is not provided to survivors.

*Payments for accidental death will not be made if death is caused:
(a) wholly or partly, directly or indirectly, by disease or bodily or mental infirmity, or by medical or surgical treatment or diagnosis thereof, or
(b) wholly or partly, directly or indirectly, by ptomaine or by bacterial infection, except only septic infection of and through a visible wound sustained solely through violent, external and accidental means, or
(c) wholly or partly, directly or indirectly, by hernia, no matter how or when sustained, or
(d) directly or indirectly by war (declared or undeclared), any act of war, or any aggression by armed forces, against the United States, in which nuclear weapons actually are being used, or
(e) directly or indirectly by war (declared or undeclared), any act of war, armed aggression, or insurrection, in which the employee is, at the time the bodily injuries are sustained, in actual combat, or
(f) by or a result of intentional self-destruction or intentionally self-inflicted injury, while sane or insane, or
(g) by or a result of the self administration of illegal or illegally obtained drugs.

ANNEX F TO ANCHORAGE EARTHQUAKE CDRP
PUBLIC AFFAIRS

1. **MISSION** The Public Affairs mission is to serve as communication strategist, making the internal and external public aware of Corps of Engineers activities and services available through all communication outlets. This includes:

a. Disseminating accurate, consistent, timely, and easy-to-understand information;

b. Instilling confidence that government will conduct response and recovery operations fast, effectively, and efficiently;

c. Providing critical information about how to apply for assistance and the location and status of life-sustaining shelters and resources; and

d. Providing authoritative information to deal with unsubstantiated rumors.

e. Providing advice to personnel who might be contacted by media representatives, to prevent the release of incorrect or misleading information and to enable such personnel to direct requests for information to the proper sources.

2. **RESPONSIBILITIES** include:

a. Coordinate with the Joint Information Center at the Disaster Field Office and with other public affairs personnel working in the emergency.

b. Act as a proponent for public involvement and partnering with residents, contractors, other federal agencies and interest groups.

c. Serve as the primary spokesperson informing the public about activities as they relate to the overall recovery effort.

d. Maintain a comprehensive command information program, which includes an "in-house" information vehicle to keep Corps employees informed about issues which affect them.

e. Provide slides and material to be used for briefings by other Corps offices.

f. Obtain photographic support and provide guidance on the photojournalism, historical documentation photography and video activities needed to ensure comprehensive coverage of the event.

g. Contact the HQUSACE Historical Office to assess whether historical information-gathering activities are being addressed. Retain as much documentary material (SITREPs, news articles, video, internal communications, and the like) for historical purposes.

3. **GENERAL PROCEDURES:**

a. Public affairs operations need to follow the "speak with one voice" principle.

b. The early stages of a catastrophic disaster are a time of great confusion. Immediate action is required to correctly determine the actual situation, and to get correct information to both the victims and the outside world.

c. Residents of the disaster area, and their friends and relatives elsewhere, need to know the progress of disaster relief efforts.

4. **SPECIAL CONSIDERATIONS** include:

a. POD and its districts have very limited Public Affairs staffing.

b. POA personnel may not be available due to disaster impacts.

c. The primary site of PAO activity will be Anchorage, with Seattle (Bothell), WA also being a primary site during the early stages of the response. Honolulu (POD) will not be a major site for PAO activity.

d. Federal and State PAO activities will initially be coordinated at the Department of Military and Veterans Affairs Public Affairs facility, at the DMVA headquarters at Camp Denali.

e. PAO activities during the early stages of the response will be on a 24-hour basis. An event of this magnitude will involve worldwide interest. In addition, eastern U.S. media activities and HQUSACE PAO will be operating in a time zone 4 hours ahead of the disaster site.

f. Certain aspects of PAO are simplified because the impacted area involves only one state, with a single Congressional district.

g. Anchorage has a very high proportion of residents who have moved to the area, rather than growing up there. It also has a large military population and receives a large number of business and recreational travelers. As a result, there will be a large number of friends and relatives outside the disaster area who will want to know about conditions following the earthquake.

5. **PAO ACTIVITIES** include:

a. Phase I, Preparedness: provide one copy of the Alaska Media Guide each to POD-PA and NWS-PA.

b. Phase IIa, Activation:

(1) POA: Available employees will report to district headquarters; be prepared for possible redeployment to Camp Denali.

(2) POD/POH: Coordinate operations to allow deployment of one or more persons to Anchorage.

(3) NWS: Provide initial representation at Region X level. This requires extensive coordination with POD-PA.

(4) UOC: Activate HQUSACE PAO; alert PA augmentees for potential deployment to Anchorage.

c. Phase IIb, Initial Deployment:

(1) POA supports PAO activities at the Initial Operating Facility at Camp Denali.

(2) UOC, POD, and possibly NWD coordinate immediate deployment of one PAO repressentative to Anchorage.

d. Phase III, Deployment

(1) Deploy a full PAO contingent to Anchorage. This is designated as:

(a) PA Chief, GS-13

(b) PA Specialist, GS 12/11

(c) PA Specialist, night shift, GS 12/11

(d) Photojournalist, GS 11 (or contract)

(2) NWS: provide its copy of the Alaska Media Guide to deploying personnel.

(3) Assign a representative to the JIC.

(4) Establish a briefing/information center at the Division Forward Element (ERRO once activated)

(5) Coordinate the photographing, including videotaping, of disaster areas and USACE response activities.

(6) Gather information and input from other CMT, CAT, and ERRO operations.

(7) Develop and issue information bulletins.

(8) Coordinate requests for inspections of field operations sites with the FEMA JIC duty officer.

(9) Videotape TV news coverage of USACE press conferences and interviews.

(10) Provide personnel to escort VIPs and members of the news media to USACE field operations sites.

(11) Maintain documentation of response and recovery activities for historical purposes.

(12) Assist in developing a Point of Contact (POC) list for USACE field personnel, so that they can direct public and media inquiries to the appropriate source of information.

e. Phase IV

(1) Continue activities from Phase III.

(2) Coordinate with HQUSACE on requirements for historical documentation.

(3) At 30 days for general PAO employees, or 45 days for the chief, arrange for a transition to replacement personnel.

f. Phase V

(1) Transition activities to POA-PA, possibly with TDY augmentation.

(2) POA-PA would obtain data, including photos and video, for historical records.

5**. PAO DUTIES**

a. Establish a relationship with the Commander and his staff. Provide an overview of Public Affairs' role in strategic planning, understanding the pulse of different publics -- both external and internal, and the range of capabilities in public information, command information and community relations.

b. Establish a daily meeting with the Commander or senior leadership to brief on current Public Affairs activities. Determine specific focus/direction for upcoming activities.

c. Attend senior-level strategic planning meetings held by other emergency management agencies. Attend Joint Information Center briefings.

d. Immediately contact all media in the area, telling them who you are, where you're located, and inviting them to drop by. Develop a media list for the emergency.

e. Develop operational Public Affairs plans, if appropriate, and Q&As for major activities/sensitive issues/recurring themes.

f. Immediately set up an internal command information vehicle(s) (newsletter, bulletins, fact sheets, briefings). Use these to focus team members on critical issues and messages which concern the public.

g. Begin a transition notebook for the next Public Affairs team. This should include who's who (points of contract), pending actions, media interests, command interests, problems you've experienced and how they have been resolved.

6. **PHOTOGRAPHIC SUPPORT**

a. Emergency Response requires photographic support of a human aspect as well as of a technical/documentary nature. The photography requirements for Public Affairs - still or video - must meet the needs and standards of the commercial media for use in telling the Corps story. Photographs typically taken for damage survey are not the same as those needed to tell a compelling story, grab a reader's attention or highlight the human suffering, sacrifice and devastation that require humanitarian relief efforts provided by the Corps of Engineers.

b. Currently there are no dedicated photographers in POA, POH, or POD. Support will be provided through the UOC, and/or by use of contract photographers.

c. On-scene contracted photographic support will be limited in the early stages of the emergency. Many of the available photographers will be working for print and broadcast media.

APPENDIX 1 TO ANNEX F TO ANCHORAGE EARTHQUAKE CDRP
SUPPORT TO FEMA

1. The Federal Emergency Management Agency (FEMA) is responsible for implementing Federal public affairs activities after a major disaster or emergency.

2. In the event of a catastrophic earthquake, a Joint Information Center (JIC) will be established as a central point for coordination of emergency public information, public affairs activities, and media access to information about the latest developments. The JIC is a physical location where Public Affairs Officers (PAOs) from involved agencies come together to ensure the coordination and release of accurate and consistent information that is disseminated quickly to the media and the public.

3. In Anchorage, the JIC would initially be established as a combined operation with the State of Alaska's information center at the National Guard Headquarters (located adjacent to the Alaska Division of Emergency Services office). Until that JIC is fully operational, there would probably be an interim JIC at the FEMA Region X Regional Operations Centar at Bothell, WA. An additional JIC may be established at FEMA Headquarters. When multiple JICs are operationg, release of information will be coordinated among those activities to the maximum extent possible.

4. The headquarters JIC will operate as long as necessary as a satellite of the on-scene JIC, and will provide information services to media in the Washington, DC, area. These services include production of the Recovery Times newsletter and daily updates for the media, FEMA Radio Network, national media monitoring and analysis, JIC reports, Internet services, and nationwide broadcast fax.

5. Once a full Disaster Field Office (DFO) has been established, the JIC will probably be collocated with that organization, either in the same structure or an adjacent structure. (However, ready access for media representatives is also a major factor in determining the exact location.) The close proximity is designed to facilitate the JIC's access to sources of information about the disaster operation and enable leadership access to the JIC.

6. Before its release, Federal, State, and local disaster information will be coordinated to the maximum extent possible to ensure consistency and accuracy.

7. All Federal agencies may use their own mechanisms for releasing information. No editorial or policy control is exercised by the coordinating PAO over other agencies' release of information about their own policies, procedures, or programs.

8. State and local governments, as well as voluntary and private responding organizations, are encouraged to participate in and share the resources of the JIC. If collocating at the JIC is not feasible, all organizations are encouraged to conduct their information activities in cooperation with the JIC.

9. The period immediately following a major disaster is critical in setting up the large and complex mechanism that will be needed to respond to the emergency public information and

news requirements generated by the disaster. This will require a significant mobilization of personnel and equipment during the early stages of the response.

10. The chief spokesperson for FEMA in a headquarters JIC is the FEMA Director of Media Affairs, or a designee, who fields inquiries from national news media. The chief spokesperson in an on-scene JIC is the lead PAO, who may be operating from a Regional Operations Center (ROC) until a JIC is set up in the disaster area. The lead PAO will consult with the FEMA Director of Media Affairs to ensure a smooth transition to field operations.

a. Media Relations serves as the primary point of contact for the media for information regarding all disaster response, recovery, and mitigation programs provided by FEMA, the State, and other Federal, State, local, and voluntary agencies. This includes providing the media with accurate and timely information on disaster operations, working with members of the media to encourage accurate and constructive news coverage, monitoring media coverage to ensure that critical messages are being reported, and identifying potential issues or problems that could have an impact on public confidence in the response and recovery effort.

b. Creative Services gathers information about response, recovery, and mitigation operations and develops and produces information for dissemination by the JIC to the print and broadcast media.

c. Multilingual Operations ensures that non-English-speaking populations receive accurate and timely information about disaster response, recovery, and mitigation programs through appropriate media and in their languages to the extent possible.

d. Special Projects plans and executes projects such as print and broadcast media public service campaigns, video documentation, surveys, special productions, and logistical support of public meetings and presentations.

11. The on-scene lead PAO serves as the primary point of contact in the field, handling public information responsibilities in support of the Federal Coordinating Officer (FCO). The lead PAO will be either a deputy or a special assistant on the FCO's staff, and will have supervisory responsibility for the JIC. The lead PAO will epresent the FCO (or FCO's deputy) with the media, public, and other agencies; serve as an advisor to the FCO, and implement public affairs policies and procedures as established by the Director of Media Affairs.

12. For an event of this magnitude, a JIC Coordinator will be appointed to handle the hour-to-hour operations of the JIC. The primary functions of the on-scene JIC are to:

a. Provide response and recovery information to individuals, families, and business and industry directly or indirectly affected by the disaster;

b. Monitor news coverage to ensure that accurate information is being disseminated;

c. Take action to correct misunderstandings, misinformation, and incorrect information concerning the disaster response, recovery, and mitigation operations that appear in the news media;

d. Ensure that non-English-speaking populations receive accurate and timely information about disaster response, recovery, and mitigation operations through appropriate news media and, to the extent possible, in their languages;

e. Use a broad range of resources to disseminate information to disaster victims and the general public, including the Recovery Times newsletter, FEMA Radio Network, FEMA Recovery Radio, Recovery Channel, broadcast fax, and the Internet, as well as traditional print and broadcast news media;

f. Maintain contact with and gather information from Federal, State, local, and voluntary organizations taking part in disaster response operations;

g. Handle appropriate special projects such as news conferences and press operations for disaster area tours by FEMA officials and others;

h. Provide public affairs support and advice to the FCO and FCO staff; and

i. Coordinate with the Logistics Section to provide basic facilities, such as communications, office space, and supplies, to assist the news media in disseminating information to the public. (These facilities are provided as long as the FCO determines their provision to be in the public interest.)

13. Each person representing a JIC member organization will function in two capacities:

a. Represent the agency in carrying out its public affairs mission; and

b. Provide public affairs services in support of the various JIC missions.

APPENDIX 2 TO ANNEX F TO ANCHORAGE EARTHQUAKE CDRP
USACE PUBLIC AFFAIRS POLICIES

1. Effective media relations are an important part of District's public information program. Accurate, consistent information provided in short, easily-understood messages helps the public understand the importance of our missions, programs and projects. The Public Affairs Office must be the focal point of all media contacts with the District. PAO involvement helps ensure we are all "speaking with one voice" and providing accurate and consistent information to the media and, ultimately, the public.

2. Department of Defense (and Army and Corps of Engineers) policy in dealing with the media is maximum disclosure, with minimum delay subject to SAPP or -- Security, Accuracy, Policy, Propriety. However, as a general rule, employees who are contacted by reporters should not initially attempt to answer questions. Instead, they should refer the member of the press to the Public Affairs Office. The PAO staff is experienced in dealing with reporters and meeting their requirements. In most situations the PAO will contact the reporters, then research and answer his/her questions.

3. There will be instances -- particularly in emergencies, in the field or at public meetings -- when employees must "meet the press" without PAO assistance. In such instances, it is permissible for an employee to speak to the press, using the guidelines noted above and the following of "Do" and "Don't" lists:

Do
- Assume everything you say to a reporter will end up in print or on radio or television
- Tell the truth
- Stay in your lane (only discuss what is in your area of knowledge and authority)
- Be brief, positive and as non-technical as possible
- Offer additional assistance from PAO prior to publication of or airing the story

Don't
- Don't lie
- Don't speculate on things that are above your level of knowledge or authority
- Don't ask to see a "draft" of the story; most reporters consider this an insult (offering assistance in explaining complex scientific or engineering details is OK)
- Don't give the reporter your phone number unless you are willing to be a personal news source from then on; instead give the reporter the PAO's phone number (808-438-9862 in Hawaii, 907-753-2520 in Alaska).

After an employee does talk to the media, he/she should advise PAO of the contact, questions asked, etc. as soon as possible. This will enable PAO to take a leadership role in any follow-up contacts with the reporter that need to be made.

4. Following these basic guidelines will help ensure the media and the public get a clear, consistent, effective message about the District's missions, programs and projects.

APPENDIX 3 TO ANNEX F TO ANCHORAGE EARTHQUAKE CDRP
PAO EQUIPMENT LISTS

1. **Fly-Away Kit.** Items each Public Affairs professional should bring when responding to the emergency.
• Name tag
• USACE visibility items (white shirt, etc.)
• PAO Emergency Response Reference Book
• Cellular phone, with handout cards listing phone numbers. Note: whenever possible, these should be a model where an auxiliary battery pack is available, and both auxiliary pack and regular batteries would be taken to the disaster site. (At a minimum, the phone must be equipped for use with 12 volt DC power.)
• Hard hat
• Safety shoes
• AM/FM Radio with batteries
• Laptop computer equipped with internal modem and fax, USACE-standard software, download capability for digital photographs, and both 12 v DC and 120 v AC power capability.
• 2 boxes blank disks, software, backup disks, battery packs
• Portable printer with paper
• Fax machine with paper
• Postage-paid envelopes (various sizes)
• Current media list (Alaska Media Guide, available from NWS and POD)
• Camera, flash, film, batteries
• Several note pads
• Pens, highlighters, pencils, etc.
• Flashlight with batteries
• Tape recorder with batteries and tape
• Telephone list from affected district/division
• Cold weather clothing
• Government-sponsored travel credit card
• Appropriate personal supplies

2. **Office Equipment and Supplies.**
• Cellular phones (two at a minimum; see comments above on power supplies)
• Fax machine dedicated to Public Affairs
• Dictionary
• Projector for computer and video
• Slide projector with carousels
• Slide sheets
• TV
• VCR with blank tapes
• Immediate access to cable or satellite dish
• 1 or 2 automatic cameras; ample supply of slide and print film
• Government VISA (IMPACT) Card
• Forms or form software program (time sheets, vouchers)
• General office supplies

3. Recommended References
• A copy of this plan (downloaded from ENGLink)
• AP Style Guide
• World Almanac
• Congressional Directory (NOTE: the disaster only affects one Congressional district)
• Public Affairs Planning for Natural Disasters guidance
• ER 500-1-1
• ER 360-1-1
• Federal Response Plan
• PAO phone and address list
• PAO home phone list to include appropriate division and district
• Emergency Operations Centers phone and address list
• List of PA Emergency response volunteers (should include office and hotel phone numbers and hone office designation)
• Significant Public Affairs Issues/Activities form
• Engineer FAR Supplement, Part 19, Small Business and Small Disadvantages Business Concerns, subpart 19.2
• Policies
• Glossary of terms
• Equation formulas, if they exist, to convert, for example, collected debris or plastic sheeting to land area mass
• Maps of state, recovery office area, and disaster area(s)
• Copy of driving laws that are specific to Alaska (note: available before the disaster at: http://www.state.ak.us/local/akpages/ADMIN/dmv/dlmanual/dlman.pdf)
• NOTE: Corps and FEMA boundary maps are not needed; the entire disaster area is in FEMA Region X, and Alaska District has both military and civil works responsibility for the area.

ANNEX G TO ANCHORAGE EARTHQUAKE CDRP
CIVIL AFFAIRS (COMMUNITY RELATIONS)

1. **GENERAL.** USACE field personnel will have extensive contact with disaster victims. In some cases, such as Structural Safety Assessment, such contact is an integral part of the mission. In other cases, disaster victims will simply seek out the first person that they can identify as being a Federal or state employee. In either case, employees need to provide appropriate information to ensure that the victims are aware of available assistance programs and understand how to access those programs.

a. Department of Defense refers to this activity as Civil Affairs, and includes it in its operational planning.

b. FEMA refers to this activity as Community Relations (CR). They include a CR office on the staff of the Federal Coordinating Officer (FCO), and have a CR Support Annex in the Federal Response Plan.

c. Employees must remember that the victims of the disaster have been through a very traumatic experience. Many will be showing the effects of extreme stress. Since much of the needed assistance will be outside of USACE authorities, employees need to quickly direct the victims to the proper sources for such assistance.

2. **GENERAL PROCEDURES.**

a. After a major disaster, FEMA deploys field officers into affected communities to gather and disseminate information about the disaster response and recovery process. The CR function is responsible for assessing and documenting the social, political, and cultural aspects of a disaster area which might affect the disaster response and recovery effort. The goal is to insure that all citizens in the affected area are aware of available Federal disaster assistance programs and how to access them. This includes the development of programs to reach special-needs disaster victims (e.g., the elderly, physically or mentally disabled, and those who do not use English as their primary language).

b. The American Red Cross is the lead agency for meeting the immediate needs of disaster victims (shelter, food, etc.).

c. FEMA recovery programs for individuals use a combination of on-scene representatives and toll-free telephone numbers. Immediately after the declaration, disaster workers arrive and set up a central field office to coordinate the recovery effort. A toll-free telephone number is published for use by affected residents and business owners in registering for assistance. A toll-free Helpline is also provided to allow victims to obtain status reports on their applications. Disaster Recovery Centers also are opened where disaster victims can meet with program representatives and obtain information about available aid and the recovery process.

d. Special procedures may be utilized when necessary. For example, in-person registration has been used when language, communications problems, or other factors interfered with use of the toll-free registration.

e. The State of Alaska has its own assistance programs, which may extend the Federal assistance or cover additional persons. The State and FEMA are both represented at the Disaster Recovery Center, so victims are able to identify the available assistance at one time.

f. Alaska District, Regulatory Branch is often a participant in the Disaster Recovery Center, to insure that the victims are not delayed and do not violate wetland protection restrictions. Details and included in Annex L, Appendix 3.

3. **USACE OPERATIONS.**

a. The ESF Cell in the DFO and the USACE PAO staff will obtain, or create, a summary listing of points of contact for the various types of assistance that individual disaster victims may require. For example, this would include food, emergency shelter, counseling, housing reoccupancy inspections, etc.

b. Each deployed USACE employee will be briefed on the disaster situation, including the status of the victims, prior to beginning field work.

c. Each USACE employee working in the field will be provided with the list of points of contact for assistance.

d. Employees will be reminded of the need for care in dealing with disaster victims. They need to be careful that they do not promise-or appear to promise-assistance that is not covered by a USACE authority or mission.

e. Employees need to use care in relating to the victims. For example, employees who boast of "red tagging" a building should not be chosen for response operations.

f. Supervisors need to monitor response personnel, and watch for signs of excessive stress. In certain cases,

[This appendix will address plans for contacting and working with the local population. Guidance for Corps employees in dealing with local victims should be addressed here.]

Annex J (Command Relationships)

This annex describes the response organizations and their relationships within the FRP. Command, coordination, and communications relationships are identified.

Appendix 1 will address the Crops deployed organization(s), their respective functions, and their interrelationships.

Appendix 1A will depict the relationship between the executing MSC, HQ USACE, and the supporting Corps divisions and districts.

Appendix 1B will depict the organization established in the impacted area to respond to the disaster. Included will be a description of the responsibilities, location, and manpower.

Appendix 2 will address coordination with Federal agencies participating in the FRP. Response organization charts will depict overall response plans and Corps support requirements. Included is a detailed description of the response planned by other Federal agencies and an assessment of any shortfalls in the response which may have implications for the Corps.

Appendix 2A will address Federal agency contacts, contacts, and responsibilities derived from the FRP.

Appendix 2B will address CONUSA/CINCPAC contacts and responsibilities derived from MSCA and the FRP. A detailed description of the appropriate FORSCOM CONUSA's plan for response in terms of the Corps' ESF #3 responsibilities is provided here. Provide an assessment of the planned JTF's engineer unit capabilities, missions in support of the JTF, and availability to support ESF#3 missions.

Appendix 3 will address the coordination and relationships with state agencies, including the state national guard. A detailed description of the response planned by each state and an assessment of that state's system for orchestrating a coordinated state and local effort relative to the Corps mission should be provided here.

Appendix 3A will address the relationship with the state office of emergency preparedness regarding its plans for response.

Appendix 3B will address the relationship with the state national guard.

Appendix 3C will address any regional or quasi-government agencies which may be a consideration in Corps response efforts.

Appendix 4 will address coordination with local governments and quasi-government agencies. A detailed description of the response planned by local agencies who plan to respond to the disaster and a general assessment of their capabilities to provide support in a catastrophic disaster is provided here.

Appendix 4A will address coordination and relationships with county governments.

Appendix 4B will address coordination and relationships with major city governments.

Appendix 4C will address coordination and relationships with public utilities. A detailed description of the response planned by each public utility, and any other entities that provide critical support to community health and welfare which have implications for ESF #3 missions.

ANNEX J TO ANCHORAGE EARTHQUAKE CDRP
COMMAND RELATIONSHIPS

1. Commander, POD will supervise the USACE response operation.

2. Commander, ERRO will manage the response operations in Alaska. For the planning event, this is anticipated to be the Division Commander or Deputy Division Commander. For lesser events, the Commander, Alaska District could serve as the ERRO Commander.

3. Commander, POA will support ERRO. For moderately severe events, or in the later stages of a catastrophic event, the Commander, POA will also serve as the ERRO Commander.

4. Commander, NWD will provide initial support to response operations, and will support the CONUS logistics staging area.

5. Commander, SPD will provide initial assistance as determined during the plan development.

Alaska ESF 01

U.S. Dept of Transportation
Federal Aviation Administration-Alaskan Region
222 W 7th Ave #14
Anchorage, AK 99513-7587
24-Hr Phone: (907) 271-5936

Primary rep: *FAA RETREP*
Phone: (907) 271-5936
Fax: (907) 276-7261

Alternate: Phone: (907) 271-5177
Fax: (907) 271-3261

Alaska ESF 02

Primary

U.S. General Services Administration
Northwest/Arctic Region
400 15th St SW
Auburn, WA 98001-6599
Phone: (253) 931-7501
Fax: (253) 931-7507

Alternate

U.S. General Services Administration
Federal Technology Service-Alaska
222 W 7th Ave, Box 5
Anchorage, AK 99513-7587
Phone: (907) 271-3626
Fax: (907) 271-3630

Alaska ESF 03

Primary

U.S. Dept of Defense

U.S. Army Corps of Engineers-Pacific Ocean Division (CEPOD)
Attn: CEPOD-EM
Ft. Shafter, HI 96858-5440
Phone: (808) 438-1673
Fax: (808) 845-8575
Email: cepod-eoc@pod.usace.army.mil

Alternate

U.S. Dept of Defense
U.S. Army Corps of Engineers-Alaska District
PO Box 898
Attn: CEPOA-CO-OR
Anchorage, AK 99506-0898
Phone: (907) 753-2513
Fax: (907) 753-2748
Email: cepoa-eoc@poa02.usace.army.mil

Alaska ESF 04

Primary

U.S. Dept of the Interior
Bureau of Land Management-Alaska Fire Service
PO Box 35005
Fort Wainwright, AK 99703
Phone: (907) 356-5500
Fax: (907) 356-5290

Alternate

U.S. Dept of the Interior
Bureau of Land Management-Anchorage Field Office
6881 Abbott Loop Rd
Anchorage, AK 99507-2599
Phone: (907) 267-1246
Fax: (907) 267-1267

Alaska ESF 5

FEMA Region X
Federal Regional Center
130 228th St SW
Bothell, WA 98021-9796
Phone: (206) 487-4600
Fax: (425) 487-4622

Alaska ESF 06

Primary

American Red Cross, Fort Richardson
PO Box 5505
Fort Richardson, AK 99505-0505
Phone: (907) 428-7053
Fax: (907) 428-7009

Alternate

American Red Cross, Southeastern Alaska Chapter
PO Box 32784
Juneau, AK 99801
Phone: (907) 789-2808
Fax: (907) 789-5037

Alternate

FEMA Region X
Federal Regional Center
130 228th St SW
Bothell, WA 98021-9796
Phone: (206) 487-4600
Fax: (425) 487-4622

Alaska ESF 07

Primary

U.S. General Services Administration
Federal Supply Service-Customer Service Center-Anchorage
Federal Supply Service
222 W 7th Ave, Box 5 Room 151
Anchorage, AK 99513-7547
Phone: (907) 271-4298
Fax: (907) 271-4297

Alternate

U.S. General Services Administration
Northwest/Arctic Region
400 15th St SW
Auburn, WA 98001-6599
Phone: (206) 931-7000
Alt. Phone: (206) 931-7007
Fax: (206) 931-7195

Alaska ESF 08

Primary

U.S. Dept of Health & Human Services
Indian Health Service-Alaska Native Hospital
4141 Ambassador Drive
Anchorage, AK 99508
Phone: (907) 729-3662
Fax: (907) 729-3659

U.S. Dept of Health & Human Services
Indian Health Service-Alaska Area Env Health & Engineering
3925 Tudor Center Dr
Anchorage, AK 99508-5997
Phone: (907) 729-3600
Fax: (907) 271-7134

Alternate

U.S. Dept of Health & Human Services Region 10
Blanchard Plaza
2201 6th Ave
Seattle, WA 98121
Phone: (206) 615-2010
Fax: (206) 615-2087

Alternate

U.S. Dept of Veterans Affairs
Portland Regional Office
1601 E. Fourth Plain
Vancouver, WA 98661
Phone: (503) 326-2515
Alt. Phone: (800) 827-1000
Fax: (503) 326-7122

Alaska ESF 9

FEMA Region X
Federal Regional Center
130 228th St SW
Bothell, WA 98021-9796
Phone: (206) 487-4600
Fax: (425) 487-4622

Alaska ESF 10

U.S. Environmental Protection Agency
Region 10-Alaska Operations Office
Federal Bldg, Rm 537
222 W 7th Ave #19
Anchorage, AK 99513-7588
Phone: (907) 271-5083
Fax: (907) 271-3424

Alaska ESF 11

U.S. Dept of Agriculture
Farm Service Agency-Alaska
800 W Evergreen St, Ste 216
Palmer, AK 99645
Phone: (907) 761-7750
Alt. Phone: (907) 745-7983
Fax: (907) 761-7789

Alaska ESF 12

U.S. Dept of Energy Headquarters
Forrestal Bldg
1000 Independence SW
Washington, DC 20585
Phone: (202) 586-9892
Fax: (202) 586-3904

Annex K (Command and Control)

This annex will describe all requirements for communications necessary to support command and control of USACE elements and contractors. Requirements for equipment will be described in terms of type, quantity, locations, and limitation. Communications nodes within the impacted area will be addressed as well as communications with higher HQs. Assumptions will include anticipated surviving systems and communications provided by the JFT and within the ESF#2.

Appendix 1 addresses all communications equipment, licensing, frequency, satellite, and phone installation requirements required by USACE and its contractors to operate in the impacted area. Included are assessments of the surviving networks, local capabilities, anticipated restoration of damaged communications systems. Requirements will be timed phased in accordance with the basic plan.

Appendix 2 addresses database requirements for response and recovery operations. Databases will support task scoping, cost estimating, reporting, units of measurement, etc. ADP support requirements and interfaces will be described.

Appendix 3 addresses requirements for reports as required for operations and HQ USACE command and control.

Appendix 3A identifies operational reporting requirements to support execution and allocation of resource.

Appendix 3B identifies HQ USACE reporting requirements.

Appendix 3C identifies FEMA reporting requirements.

Appendix 3D identifies reporting requirements for contractors.

Appendix 4 addresses ADP hardware and software requirements to support operations.

Appendix 4A addresses requirements and sources for information and command software.

Appendix 4B addresses requirements and sources for supporting hardware.

ANNEX L TO ANCHORAGE EARTHQUAKE CDRP
ENVIRONMENTAL CONSIDERATIONS

1. **GENERAL**.

a. There are two major environmental concerns during the execution of this plan:

(1) Mitigating the environmental impacts of the disaster itself, to protect lives, alleviate human suffering, and reduce property damage.

(2) Accomplishing response and recovery activities in a manner that avoids unnecessary delays in the accomplishment of required activities and also avoids unnecessary adverse environmental impacts.

b. During the initial response period, resources will not be available to respond to all environmental problems. The first priority for responders will be those situations that are likely to cause deaths or serious injuries to local residents. (Examples: spills involving extremely hazardous chemicals.) Other situations will be prioritized based on the long-term environmental effects.

2. **ENVIRONMENTAL SITUATION.**

a. Urban portions of Southcentral Alaska have relatively high environmental quality. Moose and mallard ducks have been observed within 100 yards of the Alaska District headquarters; bald eagles, Canada geese, foxes, and black bear have been observed within a mile; and king salmon fishing is available within two miles. The region has extensive wetlands, including over 7,000 acres in the Anchorage bowl. A few pairs of loons nest within the Anchorage Bowl, and beluga whales are often seen in Turnagain Arm.

b. While there are some hazardous materials in the region, the threat is less than in most urban areas in the Lower 48. The area of greatest concern is the Kenai Peninsula Borough, which contains oilfields and petrochemical plants.

c. A few industrial sites have environmental contamination problems, and many older facilities have problems such as asbestos, lead-based paints, and PCBs.

3. **USACE CONCERNS.**

a. Much of the undeveloped land in Anchorage is wetlands. In addition, many transportation and utility systems cross wetlands. Due to the subsurface conditions, wetlands are where roads and railroads are most likely to be damaged.

b. Generally, the regulatory agencies have a good record of supporting disaster response activities, with the goal of minimizing the impact of the work while still allowing timely

accomplishment. There have been a few problems, and at least once the Corps received some criticism for a delay caused by a State agency.

Appendices

1 ESF #3/USACE
2 ESF #10
3 General Support to Response and Recovery Efforts

PER JCS: Mission Support. Identify those environmental planning factors which, although not mandated as a matter of law or regulation, will support successful execution of the OPLAN, CONPLAN, or FUNCPLAN in all phases and protect the health and safety of US, allied forces, and noncombatants. As a minimum, address certification of local water sources by medical field units, solid and liquid waste management, hazardous material management, flora and fauna protection, archeological and historical preservation, and spill response.

1. Most environmental concerns are addressed under the appropriate missions in Annex C.

2. Archeological and historical preservation concerns: There are known archeological sites in the region; the Beluga Point Site contains relics from Eskimo occupation of the area around 3,000 BC. Annex M of the Unified Plan contains a list of potential contractors who can provide guidance for activities involving archeological and historical sites. Additional assistance can be obtained from the Alaska Office of History and Archaeology, 3601 C Street, Suite 1278, Anchorage, AK 99503-5921; Phone: (907) 269-8721.

3. Other contacts are:

AGENCY	**PHONE**	**FAX**	**(Area Code is 907)**
Alaska Department of Environmental Conservation (ADEC)			
Anchorage	269-7500	FAX 269-7652	
Juneau	465-5000	FAX 465-5097	
Alaska Department of Fish and Game (ADFG)			
Habitat Division			
Anchorage	267-2284	FAX 267-2464	
Alaska Division of Governmental Coordination (ADGC)			
Anchorage	269-7470	FAX 561-6134	
Alaska Department Of Natural Resources (ADNR)			
SHPO	269-8715	FAX 269-8908	
Environmental Protection Agency (EPA)			
Anchorage	271-5083	FAX 271-3424	
National Marine Fisheries Service (NMFS)			
Anchorage	271-5006	FAX 271-3030	
U.S. Fish And Wildlife Service (USFWS)			
Anchorage	271-2888	FAX 271-2786	

TAB A TO APPENDIX 1 TO ANNEX L TO ANCHORAGE EARTHQUAKE CDRP
NATIONAL REGISTER OF HISTORIC PROPERTIES

AREA	RESOURCE NAME	ADDRESS	CITY	MULTIPLE
Anchorage	A. E. C. Cottage No. 23	618 Christensen Dr.	Anchorage	
Anchorage	Alaska Engineering Commission Cottage No. 25	645 W. Third Ave.	Anchorage	
Anchorage	"Alex, Mike, Cabin"	Off Glenn Hwy	Eklutna	
Anchorage	Anchorage Cemetery	535 E. 9th Ave.	Anchorage	
Anchorage	Anchorage City Hall	524 W. 4th Ave.	Anchorage	
Anchorage	Anchorage Depot	411 W. First Ave.	Anchorage	
Anchorage	Anchorage Hotel Annex	330 E St.	Anchorage	
Anchorage	"Anderson, Oscar, House"	4th Ave. extended	Anchorage	
Anchorage	Beluga Point Site	Address Restricted	Anchorage	
Anchorage	Campus Center	University Drive	Anchorage	
Anchorage	Crow Creek Consolidated Gold Mining Company	NE of Girdwood	Girdwood	
Anchorage	"David, Leopold, House"	605 W. Second Ave.	Anchorage	
Anchorage	Eklutna Power Plant	NE of Anchorage	Anchorage	
Anchorage	Federal Building-U.S. Courthouse	601 W. 4th Ave.	Anchorage	
Anchorage	Fourth Avenue Theatre (AHRS Site No. ANC-284)	630 W. 4th Ave.	Anchorage	
Anchorage	"Gill, Oscar, House"	1344 W. 10th Ave.	Anchorage	
Anchorage	Indian Valley Mine	Address Restricted	Indian	
Anchorage	KENI Radio Building	1777 Forest Park Dr.	Anchorage	
Anchorage	Kimball's Store	500 and 504 W. Fifth Ave.	Anchorage	
Anchorage	Loussac-Sogn Building	425 D St.	Anchorage	
Anchorage	Old St. Nicholas Russian Orthodox Church	Eklutna Village Rd.	Eklutna	Russian Orthodox Church Buildings and Sites TR (AD)
Anchorage	Pioneer School House	3rd Ave. and Eagle St.	Anchorage	
Anchorage	Potter Section House	Off Seward Hwy	Anchorage	
Anchorage	Site Summit	"Off Arctic Valley Rd.", 12.5 mi. E of Anchorage	Anchorage	
Anchorage	Wendler Building	400 D. St.	Anchorage	

AREA	RESOURCE NAME	ADDRESS	CITY	MULTIPLE
Kenai Peninsula	Alaska Central Railroad: Tunnel No. 1	N of Seward	Seward	
Kenai Peninsula	Alaska Nellie's Homestead	"Mile 23, Seward Hwy."	Lawing	
Kenai Peninsula	Ballaine House	437 3rd Ave.	Seward	
Kenai Peninsula	"Berg, Andrew, Cabin"	30 mi. SE of Soldotna	Soldotna	
Kenai Peninsula	Brown & Hawkins Store	"205, 207, 209 Fourth Ave."	Seward	
Kenai Peninsula	Chugachik Island Site	Address Restricted	Homer	
Kenai Peninsula	Church of the Assumption of the Virgin Mary	Mission and Overland Sts.	Kenai	Russian Orthodox Church Buildings and Sites TR (AD)
Kenai Peninsula	Coal Village Site	N of Port Graham	Port Graham	
Kenai Peninsula	Cooper Landing Historic District	Sterling Hwy	Cooper Landing	
Kenai Peninsula	Cooper Landing Post Office	Sterling Hwy.	Cooper Landing	
Kenai Peninsula	Diversion Tunnel	At Lowell Creek	Seward	
Kenai Peninsula	Government Cable Office	218 6th Ave.	Seward	
Kenai Peninsula	Hirshey Mine	SE of Hope on Palmer Creek Rd.	Hope	
Kenai Peninsula	"Holm, Victor, Cabin"	SW of Kenai on Cohoe Rd. at Kasilof River	Kenai	
Kenai Peninsula	Holy Transfiguration of Our Lord Chapel	Sterling Hwy.	Ninilchik	Russian Orthodox Church Buildings and Sites TR (AD)
Kenai Peninsula	Hope Historic District	"Mile 17, Hope Rd."	Hope	
Kenai Peninsula	"Johnson, Harry A., Trapline Cabin"	20 mi. S of Hope	Hope	
Kenai Peninsula	Lauritsen Cabin	N of Moose Pass off Seward Highway	Moose Pass	
Kenai Peninsula	"Lee, Jesse, Home for Children"	Swetmann Ave.	Seward	
Kenai Peninsula	Moose River Site	Address Restricted	Sterling	

AREA	RESOURCE NAME	ADDRESS	CITY	MULTIPLE
Kenai Peninsula	Selenie Lagoon Archeological Site	Address Restricted	Port Graham	
Kenai Peninsula	Seward Depot	501 Railway Ave.	Seward	
Kenai Peninsula	St. Nicholas Chapel	In Seldovia	Seldovia	Russian Orthodox Church Buildings and Sites TR
Kenai Peninsula	St. Peter's Episcopal Church	2nd Ave. and Adams St.	Seward	
Kenai Peninsula	Sts. Sergius and Herman of Valaam Church	In English Bay	English Bay	Russian Orthodox Church Buildings and Sites TR
Kenai Peninsula	Sunrise City Historic District	Address Restricted	Hope	
Kenai Peninsula	Swetman House	325 5th Ave.	Seward	
Kenai Peninsula	Thorn--Stingley House	1660 E. End Rd.	Homer	
Kenai Peninsula	Van Gilder Hotel	307 Adams St.	Seward	
Kenai Peninsula	Yukon Island Main Site	Address Restricted (Kachemak Bay)	Yukon Island	
Matanuska-Susitna	Bailey Colony Farm	3150 N. Glenn Hwy.	Palmer	Settlement and Economic Development of Alaska's Matanuska-Susitna Valley MPS
Matanuska-Susitna	Berry House	5805 N. Farm Loop Rd.	Palmer	Settlement and Economic Development of Alaska's Matanuska-Susitna Valley MPS
Matanuska-Susitna	"Cunningham-Hall Pt-6,Nc-692W"	"S of Palmer at Mile 40, Glen Hwy."	Palmer	
Matanuska-Susitna	Herried House	4400 N. Palmer-Fishook Hwy.	Palmer	Settlement and Economic Development of Alaska's Matanuska-Susitna Valley MPS
Matanuska-Susitna	Hyland Hotel	333 W. Evergreen	Palmer	Settlement and Economic Development of Alaska's Matanuska-Susitna Valley MPS
Matanuska-Susitna	Independence Mines	W of Palmer	Palmer	
Matanuska-Susitna	Knik Site	"About 15 mi. SW of Wasilla, Knik Rd."	Wasilla	
Matanuska-Susitna	Matanuska Colony Community Center	"Roughly bounded by S. Colony, E. Firewood, S. Eklutua, E. Elmwood, S. Denali and a line N of properties on E. Dahlia"	Palmer	Settlement and Economic Development of Alaska's Matanuska-Susitna Valley MPS

AREA	RESOURCE NAME	ADDRESS	CITY	MULTIPLE
Matanuska-Susitna	Palmer Depot	Glenn Hwy	Palmer	
Matanuska-Susitna	Patten Colony Farm	"Mi. 39.9 Glenn Hwy., across from State Fairground"	Palmer	Settlement and Economic Development of Alaska's Matanuska-Susitna Valley MPS
Matanuska-Susitna	Puhl House	13151 E. Scott Rd.	Palmer	Settlement and Economic Development of Alaska's Matanuska-Susitna Valley MPS
Matanuska-Susitna	"Rebarchek, Raymond, Colony Farm"	S of Palmer off Glenn Hwy.	Palmer	
Matanuska-Susitna	Teeland's Country Store	Mile 42 George Parks Hwy. and Knik Rd.	Wasilla	
Matanuska-Susitna	United Protestant Church	S. Denali and Elmwood Sts.	Palmer	
Matanuska-Susitna	Wasilla Community Hall	215 Main St.	Wasilla	
Matanuska-Susitna	Wasilla Depot	Parks Highway and Knik Rd.	Wasilla	
Matanuska-Susitna	Wasilla Elementary School	Off Parks Hwy	Wasilla	

APPENDIX 2 TO ANNEX L TO ANCHORAGE EARTHQUAKE CDRP
SUPPORT TO ESF #10

1. **General.** Oil and hazardous materials response activities are managed under the Unified Plan (The Alaska Federal and State Preparedness Plan for Response to Oil and Hazardous Substance Discharges and Releases) and its local subplan, the Cook Inlet Subarea Contingency Plan. This plan combines the activities of the U.S. Coast Guard, the Environmental Protection Agency, and the State of Alaska Department of Environmental Conservation.

2. **Levels of Operations.** Federal and State responses to oil and hazardous materials spills are handled under the Incident Command System, at one of three levels:

a. Oversight: the responsible party accomplishes the cleanup, with state and Federal agencies monitoring the operations.

b. Augmentation: selected Federal and State assets are used to assist in the cleanup, with reimbursement anticipated from the responsible party. This procedure would be used following a catastrophic earthquake, to mobilize Federal resources.

c. Assumption: the cleanup is conducted by State and/or Federal agencies, using government and/or contractor resources. This level is used for “mystery spills” as well as cases where the responsible party does not provide effective cleanup. It would probably be used for some spills following a catastrophic earthquake, in cases where the responsible party was seriously impacted and unable to respond.

3. **On-Scene Coordinators.**

a. The Federal Government has jurisdiction for oil spills which impact the “Waters of the US” which includes surface waters, wetlands, and frozen wetlands such as tundra. Jurisdiction for hazardous substances is broader in nature, covering the “environment” which includes soils, groundwaters, surface waters, and air. The State On-Scene Coordinator has primary responsibility for spills that are outside of the above areas.

b. Federal On-Scene Coordinators for the impacted area are:

(1) Coastal Zone ("all United States waters subject to the tide and all land surface or land substrata, and ground waters, 1000 yards inland."): Captain of the Port (COTP) Western Alaska (Commanding Officer, Marine Safety Office, Anchorage, Alaska)

(2) Inland Zone ("the environment inland of the coastal zone"): Environmental Protection Agency (EPA), Alaska Operations Office

(3) DoD Facilities: As an exception to the above, DoD provides a Federal On-Scene Coordinator who is responsible for taking all response actions to releases of hazardous substances, pollutants, or contaminants when the release is on, or the sole source of the

release is from, any facility or vessel (including bareboat-chartered and operated vessels) under their jurisdiction, custody or control.

(4) Oil and gas exploration/production: while normal FOSC assignments apply, the Minerals Management Service (MMS) of the Department of Interior (DOI) has primary spill prevention and control responsibility for the oil production platforms in Cook Inlet.

4. **Regional Response Team (RRT).** The Alaska RRT would probably be activated to provide advice and coordinate assistance to the On-Scene Coordinators. This would include establishing priorities for the limited resources that would be available to handle spills that did not pose an immediate threat to human life or health. The Alaska District is a member of the Alaska RRT.

a. Alaska District RRT participation is normally provided by the Emergency Management element. However, an alternate representative could be provided, based on the primary support required by ESF #10.

b. Regulatory support has been most common. Example: immediate authorization of temporary berming to contain a spill.

c. Technical assistance may be required. Example: the Alaska District provide hydrologic advice to the FOSC and the RRT when a lahar (volcanic mudflow) entered the Drift River Crude Oil Terminal, following an eruption of Mt. Redoubt in 1990.

d. Contracting assistance. Example: the Alaska District provided soil remediation for the Coast Guard, in response to the Kuroshima grounding/oil spill at Dutch Harbor in 1997. (The remediation plant was already fully permitted for such activities, for use in cleanup of former military sites in the community.)

e. While USACE dredges were used to collect weathered oil from the ocean following the 1989 EXXON VALDEZ oil spill, they may not be needed for this event. The Cook Inlet crude oil is lighter than the North Slope crude oil carried by the EXXON VALDEZ. (The weathered North Slope crude oil was about the consistency of peanut butter; the easiest way to remove it from the water was to invert the dredge suction heads and use them as vacuum cleaners to pull in the oil.)

5. **Refined petroleum.** Major oil spills occurred during the 1964 earthquake. While modern storage tank standards are stricter than those used in 1964, some spills will probably occur. During a disaster response, these spills will probably be of low priority unless they pose a health hazard (for example, about to enter a drinking water supply) or a fire hazard.

6. **Hazardous substances**. While hazardous substance releases are a concern in an earthquake, the threat is less than in many other parts of the United States. The biggest threat is a subduction zone earthquake that extends into the Kenai area, where there are refinery and chemical production facilities. The major concerns are described below.

a. Extremely Hazardous Substances (EHS): only 5 are present in amounts that exceed the threshold planning quantities:

(1) Ammonia: present in large quantities at the ammonia and urea fertilizer production facility in the Kenai area; small quantity present in Anchorage, as refrigerant.

(2) Hydrogen Sulfide: primarily found at the North Slope oil fields, but a small amount is present at the petroleum refinery at Kenai.

(3) Sulfuric Acid: widely distributed industrial chemical; of the 1.9 million pounds reported statewide, 35% is in the Municipality of Anchorage and 20% in the Kenai Peninsula Borough (plus about ½ percent in the Matanuska-Susitna Borough).

(4) Ureaformaldehyde: about 1.18 million pounds, reported at two facilities in Alaska: the Kenai fertilizer company and a transshipment facility in Anchorage.

(5) Chlorine: primarily used as a water and wastewater disinfectant; of the 160,000 pounds reported, 75% was in the Municipality of Anchorage and 7% in the Kenai Peninsula Borough. (Many public water and wastewater treatment plants failed to report this chemical, so the actual quantity is probably greater.)

b. Hazardous substances. Those listed below are of moderate or high level of hazard and are found in significant quantities within Alaska. About 33% of the hazardous substances in the state are in the Kenai Peninsula Borough (usually related to oil refining and/or fertilizer production) and another 12% are in Anchorage. (However, 75% of Kenai's share, or 25% of the state total, is represented by sulfur at the refinery at Kenai).

(1) Compressed gases, particularly acetylene and ethylene, are found throughout the area. Ethylene is also a process material at a Kenai natural gas plant.

(2) Sulfur, at a refinery at Kenai (this represents over 25% of the total hazardous material in Alaska, and 75% of the hazardous material within the Kenai Peninsula Borough)

(3) Glycols—widely used in heating and cooling systems

(4) Alcohols—used as fuel additives and in the oil industry. (Ethyl alcohol is added to gasoline in Anchorage during the winter months, because it reduces the pollution caused by automobile exhausts.)

(5) Metal Compounds—sodium hypochlorite (can explode in a fire or react with petroleum products to start a fire), plus certain barium compounds (chloride and sulfate, which are class 6 poisons) are of special concern.

(6) Corrosives, particularly hydrochloric acid, sodium hydroxide, and potassium hydroxide

(7) Xylenes—at Kenai oil facilities

(8) Methyldiethanolamine-at Kenai Fertilizer Company and the Kenai Refinery

APPENDIX 3 TO ANNEX L TO ANCHORAGE EARTHQUAKE CDRP
GENERAL SUPPORT TO RESPONSE AND RECOVERY EFFORTS

1. Alaska District's Regulatory Branch supports disaster recovery efforts by providing on-scene representatives to assist the victims with authorizations for recovery efforts.

2. While many immediate response efforts must be undertaken immediately to protect lives and prevent further property damage, recovery efforts require at least a summary review to prevent avoidable environmental damage. (Example: an emergency fill during a flood should use an available upland source, not a salmon spawning bed, for the gravel source.)

3. Tab A contains the Alaska District's emergency Permit procedures.

4. Regulatory operations during a disaster are funded through the branch's regular budget, except that field office space should be provided by FEMA or the State as part of a consolidated assistance center.

REGULATORY BRANCH
CEPOA-CO-R
EMERGENCY PERMIT PROCEDURES

1. DEFINITIONS

EMERGENCY: is defined as a situation which would result in an unacceptable hazard to life, a significant loss of property, or an immediate, unforeseen, and significant economic hardship if corrective action requiring a permit is not undertaken within a time period less than the normal time needed to process the application under standard procedures.

II. AUTHORITY: 33 CFR 325.2[e][4]

III. EMERGENCY PERMIT [EP] REQUEST

A. Receive request for EP. See EXHIBIT A.

B. Familiarize yourself with the information needs below, and then check to see that the required information is provided:

◎ Location of activity site;
◎ Name of waterway;
◎ Description of situation;
◎ Reason applicant subscribes to the situation as an "EMERGENCY";
◎ Construction methods to correct the situation:

⊙ Where would fill material be disposed of?
⊙ Would there be any dredging? How?
⊙ Would stream be diverted or channelized?
⊙ Would streambank be altered?
⊙ List the equipment which would be used in the stream, etc.
⊙ Would material be removed from the flood plain or streambed, and where to?
⊙ Would material be deposited in wetlands, flood plain, stream or other water body? Where?
⊙ Would a detour road crossing a [stream, etc.] be required?
⊙ Would culverts be installed?

◎ Quantities of material[s];
◎ Type[s] of material[s];
◎ Source of material[s];
◎ Preliminary drawings:

⊙ Vicinity Map;
⊙ Sketch showing X-section view;

◎ Time frame for proposed corrective activity; and
◎ Photographs - Before and After the Emergency work.

III. IN-HOUSE DETERMINATION

Determine possibility of prominent or temporary alternatives:

✓ General Permit
✓ Alternative Design
✓ Alternative Location
✓ Nationwide Permit
✓ Alternative Method

Consult with other Regulatory members in order to arrive at a determination; if the determination is not to recommend issuance of the EP, contact the applicant verbally and with a follow up letter. Document phone conversation. Provide sufficient time [15 days] for the applicant's rebuttal.

IV. RESOURCE AGENCY CONTACT

Contact the Federal and State resource agencies that are appropriate to the applicant's region. Agency contact names and telephone numbers are in Section xxx.

♦ State the emergency situation providing all applicable data, to include applicant's name and/or company;
♦ Request the agency's opinion as to objection or no objection to issuance of an EP;
♦ Record all special conditions requested by the agency official; and
♦ Make a telephone conversation record for all contacts

Finalize recommendation, based on Federal and State agency comments, that the proposed activity qualifies or does not qualify for emergency procedures. Brief the District Engineer [DE] on the situation, and if the DE agrees with the recommendation, prepare a written notice to POD.

If it is determined that the activity does not qualify, contact the applicant verbally and with a follow up written letter stating the recommendation and reason[s]. Document the phone conversation. Allow 15 days for the applicant's rebuttal.

V. NOTIFICATION TO PACIFIC OCEAN DIVISION POD

A. Contact the appropriate individual in POD by telephone: Provide all applicable data, to include Federal and State agency recommendations and conditions, and request approval or denial, plus any special conditions. The response from POD may be immediate or up to several hours later: a second telephone call to POD may be necessary. Document the phone conversation.

B. FAX a follow up EP request to POD within 24 hours.

C. If POD recommends denial, contact applicant verbally and with a follow up letter, stating that the EP is denied and providing reasons. Document the phone conversation. Allow 15 days for the applicant's rebuttal.

D. POD should respond to FAX request with a written affirmation or denial, both FAX'ed and mailed.

E. For emergencies which occur after normal working hours, during weekends, or on holidays, the District lead for an emergency action will attempt to contact one of the incumbents of the positions listed below. The order of the attempts to make contact will be as follows:

[1] Chief, Regulatory [CEPOD-CO-R]
[2] Director, Construction-Operations Division [CEPOD-CO]
[3] Deputy Division engineer [CEPOD-DE-D]
[4] Division Engineer [CEPOD-DE]

VI. AUTHORIZATION

A. Once POD gives approval, contact the applicant and verbally relate the authorization for the corrective action, quoting the 'FAX notice to POD'. Document the phone conversation.

B. Request applicant provide the following, if not already provided:

- A completed permit application;
- All pertinent maps and drawings, to include changes to the EP; and
- A completed Coastal Zone management Program Questionnaire [if applicable].

C. Draft and transmit to the applicant a Letter of Authorization, with attachments.

VII. PUBLIC NOTICE

A. Prepare a public notice [PN]. Follow normal PN procedures. Note that there will be no expiration date, not is the ACOE requesting comments to the PN.

B. Close out the file.

VIII. POD PHONE LIST

The order of the attempts to make contact will be as follows (names and home numbers are available in the SOP as maintained in Regulatory):

1. Division O&M CEPOD-ET-C
   Office: 808-438-3063

2. Chief of Construction-Operations Division, CEPOD-ET-C
   Office: 808-438-7020

3. Chief of Engineering-Planning Division, CEPOD-ET-E
   Office: 808-438-8505

4. Director of Engineering and Technical Services, CEPOD-ET
   Office: 808-438-8560

5. Deputy Division Engineer and Chief of Staff, CEPOD-CS
   Office: 808-438-1514

6. Division Engneer, CEPOD-DE
   Office: 808-438-1500

7. Executive Assistant, CEPOD-DX
   Office: 808-438-1514

IX. ALASKA AGENCY PHONE LIST

(NOTE: many of these agencies would have representatives at the Disaster Assistance Center, Disaster Field Office, or State Emergency Coordination Center.)

AGENCY		**PHONE FAX**	**AREA CODE (907)xxx-xxxx**
Alaska Department of Environmental Conservation (ADEC)			
Anchorage		269-7500	
	FAX	269-7652	
Juneau		465-5000	
	FAX	465-5097	

Alaska Department of Fish and Game (ADFG)

Habitat Division

Anchorage		267-2284
	FAX	267-2464

Alaska Division of Governmental Coordination (ADGC)

Anchorage		269-7470
	FAX	561-6134

ALASKA DEPARTMENT OF NATURAL RESOURCES (ADNR)

SHPO		269-8715
	FAX	269-8908

CORPS OF ENGINEERS (US ARMY)

Anchorage		753-2712
	FAX	753-5567
Fairbanks		474-2166
	FAX	474-2164

ENVIRONMENTAL PROTECTION AGENCY (EPA)

Anchorage		271-5083
	FAX	271-3424

NATIONAL MARINE FISHERIES SERVICE (NMFS)

Anchorage		271-5006
	FAX	271-3030

U.S. FISH AND WILDLIFE SERVICE (USFWS)

Anchorage		271-2888
	FAX	271-2786

X. EXHIBITS

1. Telephone Log – Agency Contacts
2. Telephone Log – to CEPOD-CO-R – Verbal Permit Request/Approval
3. FAXed Confirmation of Telephone Request to CEPOD-CO-R
4. FAXed Confirmation of Telephone Approval from CEPOD-CO-R
5. Telephone Log – Authorization Notice to Applicant
6. Letter of Authorization w/Conditions, Confirming Emergency Authorization
7. Emergency Public Notice.

CONVERSATION LOG

[] VISIT [] CONFERENCE [X] TELEPHONE [] IN [X] OUT

Persons in contact with you: Various
Organization:
Telephone No:

Subject: Emergency Permit – Applicant / Location

Summary: Contacted the following and verbally explained the situation, and received verbal no objection and no special conditions other than before and after photos.

NMFS:
ADFG:
ADEC:
ADGC:
SHPO:

Action Required:

Persons Making the Call:
Date: 00/00/00 Project Manager

CONVERSATION LOG

[] VISIT [] CONFERENCE [X] TELEPHONE [] IN [X] OUT

Persons in contact with you: AGENCY
Organization: CEPOD-CO-R
Telephone No: [000] 000-0000

Subject: Project / Applicant / Location

Summary: I gave xxxxxxx the facts contained in our *date* letter to the Commander USACE Pacific Ocean Division and requested approval to give the xxxxxxxxx verbal authorization of their requested work in accordance with emergency Permit evaluation procedures.

xxxxxxxx call back in about 10 minutes and stated that we had the necessary approval.

Action Required:

Persons Making the Call:
Date: 00/00/00 Project Manager

EXHIBIT 3 TO TAB A TO APPENDIX 3 TO ANNEX L TO ANCHORAGE EARTHQUAKE CDRP
FAXED CONFIRMATION OF TELEPHONE APPROVAL FROM CEPOD-CO-R

CEPOA-CO-R

SUBJECT: Emergency Permit – Project / Applicant / Location
Applicants Address

COMMANDER
U.S. Army Engineer Division, Pacific Ocean
Building 230
Fort Shafter, Hawaill 96858-5440

1. Per telephone conversation of *date*, requesting authorization under Section 10 and Section 404 to allow the *applicant* to perform emergency work in *location*. The proposed work consists of *work description*. The project would provide *effects of work*.

2 CEPOA-CO-R was notified of the request for and Emergency Permit on *date*, and that recent *event*. The *applicant* claims that if the requested work is not performed soon, the *describe emergency*.

3. Upon approval, work would commence and would require several days to complete.

4. Upon approval, the following condition would be applied:

a. That photos shall be provided, after completion of the project, depicting the permitted work.

5. The following agencies have been contacted and have no objections:

a. Alaska Department of Fish and Game
b. Alaska Department of Environmental Conservation
c. Alaska Division of Governmental Coordination
d. National Marine Fisheries Service
e. Alaska State Historical Preservation Officer
f. Alaska Department of Natural Resource
g. U.S. Fish and Wildlife Service
h. U.S. Environmental Protection Agency

6. As required by 33 CFR 325.2[e][4], a public notice of the Emergency Authorization and Special Condition[s] deemed necessary, would be published as soon as practicable.

7. Request formal authorization to issue an Emergency Permit to the *applicant* to perform the stated work activities.

BRANCH SIG BLOCK

DE SIG BLOCK

EXHIBIT 4 TO TAB A TO APPENDIX 3 TO ANNEX L TO ANCHORAGE EARTHQUAKE CDRP
TELEPHONE LOG – AUTHORIZATION NOTICE TO APPLICANT

CEPOA-CO-R [1145]

SUBJECT: Emergency Permit (PERMIT NUMBER) Location Applicant / Address

Commander, Alaska District

1. References:

a. Telephone conversation on *date* between *POA POC*, CEPOA-CO-R, and *POD POC*, CEPOD-CO-R, subject as above.

B. Your DIALCOM [FAX] message, dated xxxxx, subject as above.

2. This will confirm my verbal approval communicated to *POA POC* by *POD POC date* to perform emergency work in *location*, Alaska. The proposed work consists of constructing *describe*.

3. The Alaska Departments of Fish and Game, Environmental Conservation, and Natural Resources, the Alaska Division of Governmental Coordination; the Alaska State Historical Preservation Officer; the National Marine Fisheries Service; the U.S. Fish and Wildlife Service; and the Environmental Protection Agency were all contacted and offered no objections to the proposed work.

4. The authorization to the *applicant* should contain the special conditions discussed in reference 1.b., and other conditions you deem necessary. As required by 33 CFR 325.2[e][4], a public notice of the emergency authorization and special conditions deemed necessary and their rationale is to be published as soon as practicable.

Div Sig Block

CONVERSATION LOG

[] VISIT [] CONFERENCE [X] TELEPHONE [] IN [X] OUT

Persons in contact with you: Applicant
Organization:
Telephone No: xxx-xxxx

Subject: Emergency Permit – PERMIT NUMBER / LOCATION

Summary: I conveyed verbal authorization to perform the work as described in the emergency permit request as dial-commed [FAX] to POD this PM *date*. I also gave him the one special condition.

Action Required:

Persons Making the Call:
Date: 00/00/00 Project Manager

EXHIBIT 6 TO TAB A TO APPENDIX 3 TO ANNEX L TO ANCHORAGE EARTHQUAKE CDRP
LETTER OF AUTHORIZATION W/CONDITIONS, CONFIRMING EMERGENCY AUTHORIZATION

Regulatory Branch
Xxxxxx Section

PERMITTEE: Applicant

EFFECTIVE DATE: date

EXPIRATION DATE:

REFERENCE NO. Permit Number
[waterway]

DEPARTMENT OF THE ARMY
LETTER OF AUTHORIZATION

This confirms verbal authorization given to the *Applicant and Address, on date*, pursuant to emergency procedures found in 33 CFR 325.2[e][4] to:
"work"

This authorization is subject to the following conditions:

a. That the permittee shall provide photographs depicting the completed work.

This action is based upon the recommendation of the Chief of Engineers and under the provisions of Section 10 of the River and Harbor Act [33 U.S.C. 403] and of Section 404 of the Clean Water Act [33 U.S.C. 1344].

This authorization is subject to the general conditions / information from ENG Form 1721, dated November 1986, attached to the Letter of Authorization.

If you have further questions, please contact *Project Manager*, of my staff at [907] 753-2716.

BY AUTHORIZATION OF THE SECRETARY OF THE ARMY:

_____ _____.
Date Branch Chief

Attachments

EXHIBIT 7 TO TAB A TO APPENDIX 3 TO ANNEX L TO ANCHORAGE EARTHQUAKE CDRP
EMERGENCY PUBLIC NOTICE

DATE:
ID:

APPLICANT:

LOCATION:

The Alaska District, Corps of Engineers has issued a Department of the Army [DA] permit, file number xxx, under emergency procedures pursuant to 33 CFR 325.2[e][4], to xxx, for xxx, at/in/near xxx, Alaska.

Based on information supplied by the xxx, the proposed work would consist of xxx.

The U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, National Mariner Fisheries Service, Alaska Department of Fish and Game, Alaska Department of Environmental Conservation, State Historical Preservation Officer, and the Alaska Division of Governmental Coordination officials were contacted and made aware of the emergency situation. After discussions with these agencies. It was determined that it was in the public interest to issue an emergency permit / authorization for the proposed work. The permit / authorization was conditioned to require that photographs be taken before and after the emergency work was completed.

ADDITIONAL INFORMATION: The emergency permit is subject tot the general and special conditions from ENG Form 1721, dated November 1986.

The emergency authorization was granted for the proposal on xxx, pursuant to 33 CFR 325.2[e][4]. An "emergency" is a situation which would result in an unacceptable hazard to life, a significant loss of property, or an immediate, unforeseen and significant economic hardship if corrective action requiring a DA permit is not undertaken within a time period less than the normal time needed to process the application under standard procedures.

AUTHORITY: This permit was issued under the following authorities:

[] Perform work in or affecting navigable waters of the United States - Section 10 of the Rivers and Harbors Act of 1899 [33 U.S.C. 403].

[] Discharge dredged or fill material into waters of the United States - Section 404, Clean Water Act [33 U.S.C. 1344]. Therefore, our public notice review will consider the guidelines set forth under Section 404[b] of the Clean Water Act [40 CFR 230].

For additional information, please contact xxx, of my Regulatory Branch, telephone [907] 753-2716.

Plans are attached to this Public Notice.

District Engineer
U.S. Army, Corps of Engineers

Attachments

ANNEX M TO ANCHORAGE EARTHQUAKE CDRP
GEOSPATIAL INFORMATION AND SERVICES (GI&S)

REFERENCES: a. DMA Catalog of Maps, Charts, and Related Products
(1) Part 1 - Aerospace Products, Vol. I
(2) Part 2 - Hydrographic Products, Vol. I
(3) Part 3 - Topographic Products, Vol. I

b. DMA Instruction 8600.3, DMA Distribution of Maps, Charts, and Related Publications

c. DMA Instruction 5026.3, Index of DMA Publications

d. DMA Instruction 8050.4, Submission and Validation of Mapping, Charting, and Geodesy (MC&G) Standard Products and Services

e. DMA Instruction 8052.1, Validation of Requirement New or Modified Non-Crisis MC&G Products and Services

f. DMA Instruction 8052.6, Crisis Support Procedures

Situation Alaska District has five sources of support: ALCOM, USGS, NOAA (nautical charts), State of Alaska ECC, and commercial sources.

1. ALCOM SUPPORT

a. MC&G Requirements. Upon initial notification of the disaster area, ALCOM J2 will procure sufficient stocks of required MC&G materials for use by the HQ, if not currently held. The following products provide support to this CONPLAN:

(1) Aerospace Products

(a) Series Global Navigation and Planning Chart (GNC) 1:5,000,000 scale.

(b) Series Jet Navigation Chart (JNC) 1:2,000,000 scale.

(c) Series Operational Navigation Chart (ONC) 1:1,000,000 scale.

(d) Series Tactical Pilotage Chart (TPC) 1:500,000 scale.

(e) Series 1501A Joint Operations Graphic-Air (JOG-A) 1:250,000 scale.

(2) Topographic Products

(a) 1:25,000 scale.

(b) 1:50,000 scale.

(3) Hydrographic Products

(a) General Nautical Charts of various small scales.

(b) Coastal Charts of various scales.

(4) Other Products. Additional products required to support COMALCOM can be found by referring to the references. These products can include:

(a) Amphibious Assault Charts and Combat Charts.

(b) Flight Information Publications (FLIPs)

b. Available Products. The 611th AIF maintains a list of MC&G products available and in stock. Reference (a) contains procedures for obtaining nonstandard and substitute products in crisis situations.

c. Capabilities. There are no MC&G forces assigned or attached to COMALCOM. CJTF relies upon DMA for production and dissemination of MC&G products.

d. Supporting Capabilities

(1) Defense Mapping Agency Combat Support Center (DMACSC), Washington, D.C.

(2) Commanding Officer, 6th INF DIV (L), Fort Richardson, Alaska, DOL, Supply Division Storage Branch, Map Supply (APVR-DL-CSG)

(3) USCINCPAC/J317, Camp Smith, HI

(4) USARPAC/APIN-MC&G, Fort Shafter, HI

(5) HQ PACAF/INU, Hickam AFB, HI

(6) DMACSC/Pacific Office, Hickam AFB, HI

e. Assumptions

(1) Large-scale topographic maps will be adequate.

(2) Medium and small-scale products will vary from adequate to limited usefulness.

(3) DMA will be able to provide nonstandard and a limited number of quick response products when required.

2. Mission. To provide MC&G support to forces assigned in support of COMALCOM.

3. Execution

a. Concept of MC&G Operations. A stock of aeronautical charts required by supported CONPLANS is maintained by the 611th AIF. This stock is for use by HQ ALCOM staff during peacetime operations and for fulfilling urgent requirements of augmentation forces. MC&G materials required to support ground operations are maintained by Commander, USARAK at Fort Richardson, Alaska. These stocks are capable of supporting the immediate needs of forces stationed in Alaska, with limited support available to augmenting forces. Large-scale augmentation/reinforcement of ALCOM will require requisitioning of maps from DMA IAW supported CONPLANS.

b. Tasks. Component/Supporting Commanders will:

(a) Ensure that units have the necessary MC&G products to support approved CONPLANS.

(b) Ensure that MC&G activities are conducted IAW established DMA procedures.

c. Coordinating Instructions

(1) All map locations involving ground forces will be referenced by the Military Grid Reference System (MGRS).

(2) When air elements are providing close air support to ground forces, map references will be made in the Geographic Coordinates System (Lat/Long) and MGRS coordinates.

(3) Air Defense Operations will give map references in the Geographic Coordinates System.

(4) MGRS grids will be used for joint amphibious operations.

(5) The datum used to generate coordinates must be included in all correspondence. The datum of choice is WGS84.

4. Administration and Logistics

a. Supply and Storage. Augmentation forces will deploy with a 15-day supply of maps and charts required to conduct operations. Additional MC&G materials required after that period will be requisitioned through the Defense Mapping Agency IAW Appendix 1.

b. Transportation. Each component is responsible for product transportation from designated theater storage locations to units.

c. Support.

(1) MC&G products will be ordered IAW established DMA procedures as amplified by supplemental service instructions.

(2) Requests for tactical target materials and special photographic products will be submitted to ALCOM/J2.

d. Reports. Deficiencies in MC&G products are to be reported to ALCOM/J2. A message is appropriate where urgency of the situation so demands.

5. Command and Control

a. Priorities. Priorities for requisitioning MC&G products in support of this plan are to be determined IAW the urgency of need designator (UND) and force/activity designation (FAD) as described in Reference (a).

b. Command Relationships. See Annex J.

c. Command and Control. MC&G requirements will be handled through normal administrative channels.

LAWRENCE E. BOESE
Lieutenant General, USAF
Commander

Appendix:
1--Procedures for Obtaining MC&G Support

OFFICIAL

LEWIS H. THOMPSON
Lieutenant Colonel, USA
Director for Intelligence

Annex M (Mapping, Charting, and Geodesy)

This annex specifies requirements and plans for use of mapping and GIS. The purpose of this annex is to define the Corps plan for use of geographic information in the management of response.

Appendix 1 identifies GIS requirements and Corps GIS capabilities.

Appendix 2 identifies GIS and mapping sources from other Federal agencies, their utility in disaster response, and a means to interface with those systems.
Appendix 3 identifies GIS in use by state and regional agencies, their utility in disaster response, and a means to interface with those systems.

ANNEX M TO ANCHORAGE EARTHQUAKE CDRP
MAPPING, CHARTING, AND GEODESY (MC&G)

REFERENCES: a. DMA Catalog of Maps, Charts, and Related Products
(1) Part 1 - Aerospace Products, Vol. I
(2) Part 2 - Hydrographic Products, Vol. I
(3) Part 3 - Topographic Products, Vol. I

b. DMA Instruction 8600.3, DMA Distribution of Maps, Charts, and Related Publications

c. DMA Instruction 5026.3, Index of DMA Publications

d. DMA Instruction 8050.4, Submission and Validation of Mapping, Charting, and Geodesy (MC&G) Standard Products and Services

e. DMA Instruction 8052.1, Validation of Requirement New or Modified Non-Crisis MC&G Products and Services

f. DMA Instruction 8052.6, Crisis Support Procedures

Situation Alaska District has five sources of support: ALCOM, USGS, NOAA (nautical charts), State of Alaska ECC, and commercial sources.

1. ALCOM SUPPORT

a. MC&G Requirements. Upon initial notification of the disaster area, ALCOM J2 will procure sufficient stocks of required MC&G materials for use by the HQ, if not currently held. The following products provide support to this CONPLAN:

(1) Aerospace Products

(a) Series Global Navigation and Planning Chart (GNC) 1:5,000,000 scale.

(b) Series Jet Navigation Chart (JNC) 1:2,000,000 scale.

(c) Series Operational Navigation Chart (ONC) 1:1,000,000 scale.

(d) Series Tactical Pilotage Chart (TPC) 1:500,000 scale.

(e) Series 1501A Joint Operations Graphic-Air (JOG-A) 1:250,000 scale.

(2) Topographic Products

(a) 1:25,000 scale.

(b) 1:50,000 scale.

(3) Hydrographic Products

(a) General Nautical Charts of various small scales.

(b) Coastal Charts of various scales.

(4) Other Products. Additional products required to support COMALCOM can be found by referring to the references. These products can include:

(a) Amphibious Assault Charts and Combat Charts.

(b) Flight Information Publications (FLIPs)

b. Available Products. The 611th AIF maintains a list of MC&G products available and in stock. Reference (a) contains procedures for obtaining nonstandard and substitute products in crisis situations.

c. Capabilities. There are no MC&G forces assigned or attached to COMALCOM. CJTF relies upon DMA for production and dissemination of MC&G products.

d. Supporting Capabilities

(1) Defense Mapping Agency Combat Support Center (DMACSC), Washington, D.C.

(2) Commanding Officer, 6th INF DIV (L), Fort Richardson, Alaska, DOL, Supply Division Storage Branch, Map Supply (APVR-DL-CSG)

(3) USCINCPAC/J317, Camp Smith, HI

(4) USARPAC/APIN-MC&G, Fort Shafter, HI

(5) HQ PACAF/INU, Hickam AFB, HI

(6) DMACSC/Pacific Office, Hickam AFB, HI

e. Assumptions

(1) Large-scale topographic maps will be adequate.

(2) Medium and small-scale products will vary from adequate to limited usefulness.

(3) DMA will be able to provide nonstandard and a limited number of quick response products when required.

2. Mission. To provide MC&G support to forces assigned in support of COMALCOM.

3. Execution

a. Concept of MC&G Operations. A stock of aeronautical charts required by supported CONPLANS is maintained by the 611th AIF. This stock is for use by HQ ALCOM staff during peacetime operations and for fulfilling urgent requirements of augmentation forces. MC&G materials required to support ground operations are maintained by Commander, USARAK at Fort Richardson, Alaska. These stocks are capable of supporting the immediate needs of forces stationed in Alaska, with limited support available to augmenting forces. Large-scale augmentation/reinforcement of ALCOM will require requisitioning of maps from DMA IAW supported CONPLANS.

b. Tasks. Component/Supporting Commanders will:

(a) Ensure that units have the necessary MC&G products to support approved CONPLANS.

(b) Ensure that MC&G activities are conducted IAW established DMA procedures.

c. Coordinating Instructions

(1) All map locations involving ground forces will be referenced by the Military Grid Reference System (MGRS).

(2) When air elements are providing close air support to ground forces, map references will be made in the Geographic Coordinates System (Lat/Long) and MGRS coordinates.

(3) Air Defense Operations will give map references in the Geographic Coordinates System.

(4) MGRS grids will be used for joint amphibious operations.

(5) The datum used to generate coordinates must be included in all correspondence. The datum of choice is WGS84.

4. Administration and Logistics

a. Supply and Storage. Augmentation forces will deploy with a 15-day supply of maps and charts required to conduct operations. Additional MC&G materials required after that period will be requisitioned through the Defense Mapping Agency IAW Appendix 1.

b. Transportation. Each component is responsible for product transportation from designated theater storage locations to units.

c. Support.

(1) MC&G products will be ordered IAW established DMA procedures as amplified by supplemental service instructions.

(2) Requests for tactical target materials and special photographic products will be submitted to ALCOM/J2.

d. Reports. Deficiencies in MC&G products are to be reported to ALCOM/J2. A message is appropriate where urgency of the situation so demands.

5. Command and Control

a. Priorities. Priorities for requisitioning MC&G products in support of this plan are to be determined IAW the urgency of need designator (UND) and force/activity designation (FAD) as described in Reference (a).

b. Command Relationships. See Annex J.

c. Command and Control. MC&G requirements will be handled through normal administrative channels.

LAWRENCE E. BOESE
Lieutenant General, USAF
Commander

Appendix:
1--Procedures for Obtaining MC&G Support

OFFICIAL

LEWIS H. THOMPSON
Lieutenant Colonel, USA
Director for Intelligence

HEADQUARTERS, ALASKAN COMMAND
ELMENDORF AFB ALASKA 99506-5001

APPENDIX 1 TO ANNEX M TO COMALCOM CONPLAN 5210
PROCEDURES FOR OBTAINING MC&G SUPPORT

1. GENERAL. This appendix summarizes procedures for obtaining MC&G products. Questions concerning mapping and charting should be directed to the ALCOM/J2.

2. Procedures for Standard MC&G Products

a. General. Standard products are cataloged in the DMA Catalog of Maps, Charts, and Related Products, Parts 1-4.

b. Standard products may be obtained from DMA as follows:

(1) Standard Requisitions: Prepare DD Form 1348 or SF 344 IAW procedures contained in Reference (a) and mail to:

Director, DMA Combat Support Center
ATTN: CCOR Stop 17
6001 MacArthur Blvd
Bethesda, MD 20816-5001

(2) Message: Prepare DD Form 173 (Joint Message Form) IAW the example provided in Reference (a). Address line for Milstrip should read:

TO DAAS DAYTON OH
INFO HQ ALCOM ELMENDORF AFB AK//J2//

3. Procedures for Nonstandard Products

a. General. Nonstandard products are those produced from available source materials to support specific operations where no standard exists. They may include photo-based and enhanced foreign or commercial products. Samples are contained in Reference (a) Section 2 (Ordering Procedures and Crisis Support).

b. Procedures. Products listed in Reference (a), Section 2, may be requested through ALCOM/J2.

2. USGS.

The USGS has a map sales office at the University of Alaska Fairbanks. Alaska District representatives can obtain maps there and forward them to the District.

USGS also has representatives at the IDFO.

3. NOAA.

Nautical charts may be ordered from NOAA.

Some charts of Alaskan waters are available from the USGS map sales office at the University of Alaska, Fairbanks.

4. ECC/IDFO

Some maps may be obtained from other Federal and State agencies at the ECC/IDFO, particularly when such maps are needed for coordination.

5. Commercial

a. The Alaska District uses the DeLorme Street Atlas to generate local street maps, and also uses the DeLorme Alaska Atlas & Gazetteer as a general reference.

b. The Precision Mapping Streets software, furnished with the USACE fly away kits, is not usable for the Anchorage area. The software does NOT include Alaska in its data.

It is important to remember that any Shape file associated with a GIS plateform is accompanied
with a COORDINATE STSTEM DESCRIPTION explaining, what,
when,where,how.....

You can convert any Coordinate system to another, unless that SHAPE FILE is protected.

State of Alaska MOA GIS uses the following.

COORDINATE SYSTEM DESCRIPTION

Projection STATEPLANE
Zone 6176
Datum NAD27
Units FEET
Spheroid CLARKE1866

Annex X (Execution Checklist)

This checklist is a synopsis of the critical elements, identified in the plan, which must be executed or accomplished for mission success. These elements feed into the related mission folders for contingency execution.

NOTE THAT THESE INCLUDE ITEMS THAT MUST BE ACCOMPLISHED OUTSIDE OF POD.

NWD:
1. Provide ESF #3 representation at Region X ROC (1st shift)
2. Activate Portland HF-SSB radio.
3. Activate NWD LPRT. (if team is deployed, activate alternates to provide interim capability)

HQUSACE:
1. Activate ESF #3 representation for Region X ROC (replace NWD initial team)
2. Activate Prime Power for ROC and Alaska
3. Alert initial PRTs:

    Emergency Power
    Structural Safety Assessment

HEADQUARTERS, USAED PACIFIC OCEAN
FORT SHAFTER, HI 99506-0898

ANNEX Y TO ANCHORAGE EARTHQUAKE CDRP
ACRONYMS AND SPECIALIZED TERMS

This annex provides definitions for acronyms and specialized terms that may be encountered during disaster planning and response activities. Since it is intended as a general reference, it covers some acronyms and terms that are not used in this plan.

Appendixes:

1 - Acronyms and Abbreviations
2 - Specialized Terms

HEADQUARTERS, USAED PACIFIC OCEAN
FORT SHAFTER, HI 99506-0898

APPENDIX 1 TO ANNEX Y TO ANCHORAGE EARTHQUAKE CDRP
ACRONYMS AND ABBREVIATIONS

A/D	Analog/Digital
A/E	Architect/Engineer
A&E	Architect/Engineer
AA	Approval Authority
AA	Affirmative Action
AA	Applicant Assistance
AA	Allocation Advice
AAA	Agriculture Adjustment Administration
AAA	American Automobile Association
AAA	Army Audit Agency
AAC	Applicant Assistance Center
AACS	Automated Access Control System
AAD	Assistant Associate Director
AADN	Autodin Automatic Digital Network
AADPA	Assistant Associate Director for Public and Intergovernmental Affairs
AADR	Age-Adjusted Death Rate
AALOC	Active Army Location Code
AAO	Army Acquisition Objective
AAOC	Alternate Army Operations Center
AAP	Army Ammunition Point
AAR	After Action Report
AARP	American Association of Retired Persons
AASHTO	American Association of State Highway and Transportation Officials
ABA	American Bar Association
ABA	American Bankers Association
ABAG	Association of Bay Area Governments
ABC	Associated Builders and Contractors
ABC	American Baptist Churches
ABF	Automatic Broadcast Feed
ABFC	Advanced Base Functional Components
ABM	Anti-Ballistic Missile
ABNCP	Airborne Command Post
ABO	Army Budget Office
ABO	agents Of Biological Origin
AC	Active Component
AC	Area Committee
AC	Hydrogen cyanide (symbol for)
ACAP	Agency-wide Corrective Action Program
ACAS	Army Crisis Action System
ACC	Air Combat Command
ACCS	Accounting Classification code Structure
ACE	Allied Command Europe

ACE	Assistant Chief of Engineers
ACE	American Council on Education
ACE	Automated Construction Estimate
ACE	Army Corps of Engineers (FEMA usage; correct acronym is USACE)
ACF	Administration for Children and Families
ACGIH	American Council of Government Industrial Hygienists
AChE	Acetylcholinesterase
ACHP	Advisory Council on Historic Preservation
ACI	Advance Contracting Initiative
ACI	Approved Course of Instruction
ACIR	Advisory Commission on Intergovernmental Relations
ACO	Administrative Contracting Officer
ACO	Agency Claims Officer
ACOM	Atlantic Command
ACP	Area Contingency Plan
ACP	Alternate Command Post
ACP	Accelerated Conversion Process
ACP	Allied Communications Publication
ACP	Access Control Point
ACPSEM	Advisory Council on Professional Standards for Emergency Managers
ACR	Acreage Conservation Reserve
ACR	Agency Confirmation Report
ACR	Advance Confirmation Report
ACS	Alternate Command Staff
ACSM	American Congress on Surveying and Mapping
ACTD	Advanced Concepts technology Demonstration
ACT FAST	Agent Characteristics Toxicity-First Aid & Special Treatment
ACV	Actual Cash Value
AD	Active Duty
AD	Armored Division
AD	Associate Director
ADA	Americans with Disabilities Act
ADAMS	Automated Disaster Assistance management System
ADARS	Army Defense Acquisition Regulation Supplement
ADCED	Alaska Department of Commerce and Economic Development
ADCRA	Alaska Department of Community and Regional Affairs
ADD	Automated Deployment Database
ADDS	Automated Disaster Deployment system
ADEC	Alaska Department of Environmental Conservation
ADEM	Arkansas Department of Emergency Management
ADES	Alaska Division of Emergency Services (within ADMVA)
ADF&G	Alaska Department of Fish & Game
ADGGS	Alaska Division of Geological and Geophysical Surveys
ADHHS	Alaska Department of Health and Social Services
ADLAW	Alaska Department of Law
ADOL	Alaska Department of Labor
ADM	Acquisition Decision Memorandum
ADMIN	Administration

ADMSYS	Admissions System
ADMVA	Alaska Department of Military and Veterans Affairs
ADNR	Alaska Department of Natural Resources
ADOA	Alaska Department of Administration
ADOC	Alaska Department of Corrections
ADOE	Alaska Department of Education
ADOR	Alaska Department of Revenue
ADOS	Automated Document Ordering System
ADOTPF	Alaska Department of Transportation and Public Facilities
ADP	Automated Data Processing
ADPE	Automated Data Processing Equipment
ADRA	Adventist Development and Relief Agency
ADRS	Automated Disaster Reporting system
ADT	Active Duty for Training
ADVON	Advanced Echelon
AE	Aeromedical Evacuation
AE	Architect/Engineer
AEA	American Economic Association
AEC	Agency Emergency Coordinators
AECC	Aeromedical Evacuation Control Center
AECC	American Evangelical Christian Church
AECE	Aeromedical Evacuation Control Element
AECM	Aeromedical Evacuation Crew Member
AECR	Achieving Extraordinary Customer Relations
AED	Alaska Engineer District (unauthorized acronym; use POA)
AEIC	Alaska Earthquake Information Center
AELT	Aeromedical Evacuation Liaison Team
AERT	Alaska Emergency Response Team
AES	Aeromedical Evacuation System
AF	Air Force
AF	Acre Feet
AFB	Air Force Base
AFCS	Army Facilities Components System
AFD	Alternate Files Depository
AFEB	Award Fee Evaluation Board
AFEM	Alliance for Fire and Emergency Management
AFGE	American Federation of Government Employees
AFGWC	Air Force Global Weather Central
AFMS	Automated Forms System
AFNSEP	Air Force National Security Emergency Preparedness
AFOSC	Air Force Operations support Center
AFRB	Air Force Reserve Base
AFRCC	Air Force Rescue Coordination Center
AFRES	Air Force Reserve
AFRRI	Armed Force Radiobiology Research Institute
AFS	Alaska Fire Service
AFSOF	Air Force Special Operations Forces

AG	Army Guidance
AG	Agriculture
AG	Adjutant General
AG	Attorney General
AGC	Association of General Contractors
AGE	Aerospace Ground equipment
AGO	Agency Collections Officer
AGZ	Actual Ground Zero
AH	Alternate Headquarters
AHCC	Alternate Host Communications Center
AHG	Ad Hoc Group
AHJ	Agency Having Jurisdiction
AIA	American Insurance Association
AIC	Automated Inventory Control
AID	Agency for International Development
AIDEA	Alaska Industrial Development and Export Authority (within ADCED)
AIF	Army Industrial Fund
AIF	Assistance Information Form
AIFFC	Alaska Interagency Fire Coordination Center
AIG	Address Indicating Group
AIMS	Arson Information management System
AIMS	Automated Inventory Management System
AIP	Airport Improvement Program
AIR	Applied Insurance Research
AIREP	Aircraft Report
AIS	Automated Information Systems (obsolete; see AIC)
AIT	Aeromedical Isolation Team
AJCC	Alternate Joint Communications Center
AKNG	Alaska National Guard
AL	Applicant Liaison
ALARACT	All Army Activities
ALC	Agency Location Code
ALC	Agency Logistics Center
ALCC	Airlift Coordination Cell
ALCC	Airlift Control Center
ALCE	Airlift Control Element
ALCOM	Alaskan Command
ALD	Available to Load Date
ALDT	Aleutian Daylight Time (GMT –8)
ALE	Additional Living Expenses
ALE	Automatic Link Establishment (radio communications term)
ALERT	Automated Local Evaluation in Real Time
ALOHA	Aerial Locations of Hazardous Atmospheres
ALS	Advanced Life Support
ALSM	Airborne Laser Swath Mapping (also known as LIDAR)
ALST	Aleutians Standard time (GMT-10)
AM	Ante Meridiem
AM	Amplitude Modulation

AMAP	Army Mobilization Action Plan
AMBUS	Ambulance Bus
AMC	Air Mobility Command (U.S. Air Force)
AMC	Army Material Command
AMEDD	Army Medical Department
AMOPS	Army Mobilization and Operations Planning System
AMP	Army Material Plan/Army Mobilization Plan
AMPS	Automated Message Processing System
AMS	American Meterological Society
AMS	Aerial Measuring System
AMSC	American Satellite Communications
AMSLAN	American Sign Language
AMSS	Army Mobile Support System
AMT	Amount
AN	Above Normal
AN	Alert and Notification
ANECC	Alternate National Emergency Coordination Center (obsolete; See FAOC)
ANFO	Ammonium Nitrate and Fuel Oil (explosive)
ANG	Air National Guard
ANGB	Air National Guard Base
ANMCC	Alternate National Military Command Center
ANOC	Association of National Olympic Committees
ANPR	Advance Notice of Proposed rulemaking
ANPSC	Alternate National Processing Service Center (Mt. Weather)
ANRC	American National Red Cross
ANS	Alert and Notification System
AO	Area Office
AO	Action Officer
AO	Area of Operation(s)
AO	Action Officer
AO	Administrative Officer
AoA	Administration on Aging
AOC	Army Operations Center, Pentagon
AOC	Area of Concern
AOC	Aircraft Operating Center (NOAA)
AOIC	Acting Official in Charge
AOR	Area of Responsibility
AP	Assembly Point
AP	Alternate Power
AP	Associated Press
AP	Aerial Port
APA	Administrative Procedures Act
APC	Accounting Process Code
APC	Armored Personnel Carrier
APD	Anchorage Police Department
APE	Area of Potential Effect
APHIS	Animal and Plant Health Inspection Service

API	Application Programming Interface
APIS	Administrative and Program Information System
APO	Accountable Property Officer
APOD	Aerial Port of Debarkation
APOE	Aerial Port of Embarkation
APPS	Applications
APUC	Alaska Public Utilities Commission (within ADCED)
APP	Application or Applicant
APR	Agency Procurement Review
APSRS	Aerial Photography Summary Record Systems
APSS	Automated Personnel Security System
APWA	American Public Works Association
AR	Army Regulation
AR	Army Reserve
AR	Acknowledge Receipt
AR	Aerial Reconnaissance
ARAA	Advanced Radiological Accident Assessment
ARAC	Atmospheric Release Advisory Capability
ARC	American Red Cross
ARC QRT	American Red Cross Quick Response Team
ARCA	Area requiring Corrective Action
ARCHIE	Automated Resource for Chemical Hazard Incident Evaluation
ARCOM	Army Reserve Command
ARECAT	(Army) Residual Capability Assessment
ARES	Amateur Radio Emergency Services
ARF	Aviation Route Forecast
ARFI	Areas Recommended For Improvement
ARG	Accident Response Group
ARI	Acute Respiratory Infection(s)
ARISC	Alaska Regional Interagency Steering Committee
ARL	Airborne Reconnaissance Low
ARL	Activities result List
ARL	Anchorage Regional Landfill
ARL-M	Airborne Reconnaissance Low-Multifunction
ARLANT	Army Atlantic Command
ARMR	Army Readiness and Mobilization Region
ARNG	Army National Guard
ARNGUS	Army National Guard of the United States
A-ROC	Alternate Regional Operations Center
ARPANET	Advanced Research Projects Agency Network
ARRAS	Automated Residential Remote Alarm System
ARRC	Alaska Railroad Corporation (within ADCED)
ARRL	American Radio Relay League
ARS	Agriculture Research Service
ARSOF	Army Special Operatins Forces
ARSTAF	Headquarters Dept of the Army Staff
ART	Awards Review Team
ARTS	Audit Report Tracking System

ARWIN	Army WWMCCS Integrated Network
ARWO	Aerial Reconnaissance Weather Office
AS	Applicant Services
ASA	Assistant Secretary of the Army
ASA(CW)	ASA (Civil Works)
ASA(M&RA)	ASA (Manpower and Reserve Affairs)
ASA(RDA)	ASA (Research Development and Acuisition)
ASAP	As Soon As Possible
ASAP	All Hazards Situation Assessment Prototype
ASARC	Army Systems Acquisition Review Council
ASC	Advanced Systems Center
ASCE	American Society of Civil Engineers
ASCII	American Standard Code for Information Interchange
ASCS	Agriculture Stabilization and Conservation Service
ASD	Assistant Secretary of Defense
ASD(C)	ASD (Comptroller)
ASD(CCCI)	ASD (C3I)
ASD(HA)	ASD (Health Affairs)
ASD(ISA)	ASD (International Security Affairs)
ASD(MI&L)	ASD (Manpower, Installations
ASD(PA)	ASD (Public Affairs)
ASD(PAE)	ASD (Program Analysis &
ASD(RA)	ASD (Reserve Affairs)
ASDAR	Aircraft-to-Satellite Data Relay
ASDSO	Association of State Dam Safety Officials
ASFPM	Association of State Floodplain Managers
ASH	Assistant Secretary for Health, Department of Health and Human Services
ASIP	Army Stationing and Installation Plan
ASL	Above Sea level
ASL	American Sign Language
ASLB	Atomic Safety Licensing Board
ASMP	Army Survival Measures Plan
ASMRO	Armed Services Medical Regulation Office
ASOS	Automated Surface Observing System
ASPRS	American Society for Photogrammetry and Remote Sensing
ASR	Aquifer Storage Recovery
ASRRP	Army Survival, Recovery & Reconstitution Plan
ASRRS	Army Survival, Recovery & Reconstitution System
ASSET	Advanced Simulation and Software Engineering Technology
ASST	Assistant
AST	Aboveground Storage Tank
AST	Alaska State Troopers
ASTM	American Society for Testing and Materials
ASTS	Aeromedical Staging Squadron
ATA	Actual Time of Arrival
ATC	Air Traffic Control
ATC	Applied Technology Council
ATC-20	Applied Technology Council Report 20, Procedures for Postearthquake

	Safety Evaluation of Buildings
ATD	Actual Time of Departure
ATDP	Annual Training and Development Plan
ATDT	Atlantic Daylight time (GMT-3)
ATF	Bureau of Alcohol, Tobacco, and Firearms
ATH	Air-Transportable Hospital
ATM	Automated Teller Machine
ATM	Asynchronous Transfer Mode
ATMWU	Air Transportable Mobile Weather Unit
ATO	Air Tasking Order
ATR	Advanced Thermal Reactor
ATRAP	Air Transportable RADIAC Package
ATSDR	Agency for Toxic Substance and Disease Registry
ATST	Atlantic Standard Time (GMT-4)
ATTN	Attention
ATV	All-Terrain Vehicle
ATWC	Alaska Tsunami Warning Center (obsolete name; see WCATWC)
AUTODIN	Automatic Digital Network (being phased out; see DMS)
AUTOVON	Automatic voice Network (obsolete; see DSN)
AV	Audio-Visual
AV	Air Vehicle
AVHRR	Advanced Very High Resolution Radiometer
AVLIS	Atomic Vapor Laser Isotope Separation
AVO	Alaska Volcano Observatory
AWIPS	Advanced Weather Interactive Processing System
AWIS	Automated Weather Information System
AWOL	Absent Without Leave
AWRA	American Water Resources Association
AWS	Alternate Work Schedule
BAA	Broad Area Announcement
BALY	Best Available Lodging Value
BAREPP	Bay Area Regional Earthquake Preparedness Project
BATF	Bureau of Alcohol, Tobacco, and Firearms
BBRS	Board of Building Regulations and Standards
BBS	Bulletin Board System
BC	Branch Chief
BC	Base Camp
B/C	Benefit/Cost
BCF	Billion Cubic Feet
BCMC	Board for the Coordination of Model Codes
BCR	Benefit to Cost Ratio
BDA	Battle Damage Assessment
BDE	Brigade
BDRP	Biological Defense Research Program
BEEF	Big Explosive Experimental Facility
BENT SPEAR	Nuclear Incident
BEP	Budget Execution Plan

BFC	Bills For Collection
BFE	Base Flood Elevation
BG	Brigadier General
BI	Background Investigation
BIA	Bureau of Indian Affairs
BIDS	Biological Integrated Detection system
BIFC	Boise (ID) Interagency Fire Center (obsolete; see NIFC)
BIIDB	Badge Imaging Information Database
BIT	Built-In Test
BIT	Building Inventory Tool
BLEVE	Boiling Liquid Evaporating Vapor Explosion
BLM	Bureau of Land Management
BLS	Basic Life Support
BMC	Bomb Management Center
BMP	Best Management Practice(s)
BN	Battalion
B-NICE	Biological, Nuclear, Incendiary, Chemical, or Explosive
BOA	Base of Operations
BOCA	Building Officials and Code Administrators
BOM	Bill of Materials
BoO	Base of Operations
BOR	Bureau of Reclamation
BPA	Blanket Purchasing Agreements
BPAT	Building Performance Assessment Team
BPD	Blast Protective Design
BPM	Basic Property Management
BPO	Blanket Purchase Order
BPR	Business Process Reengineer
BPS	Bits Per Second
Bq	Becquerel (symbol for)
BRAC	Base Review and Closure (Program)
BRM	Bioregulator/Modulator
BROKEN ARROW	Nuclear Accident
BSA	Base Support Area
BSI	Base Installation
BSPP	Broadcast Station Protection Program
BSSC	Building Seismic Safety Council
BTS	Budget Tracking System
BTU	British Thermal Unit
BW	Biological Warfare
BWR	Boiling Water Reactor
BY	Budget Year
C	Base Camp
C&P	Cooperation and Participation Agreement
C2	Command and Control
C3	Command, Control, and Communications
C4	Command, Control, Communications, and Computers

C3I	Command, Control, Communications and Intelligence
CA	Congressional Affairs
CA	Cooperative Agreement
CA	Civil Affairs
CA	Bromobenzylcyanide (symbol for)
CAA	Clean Air Act
CAA	Concepts Analysis Agency
CAAP	Critical Asset Assurance Program
CABIN	Chemical and Biological Information Network
CAC	Civil Applications Committee
CAC	Climate Analysis Center (NWS)
CAC	Community Assistance Contact
CACTIS	Computer-Assisted CSEPP Training Information System
CAD	Computer-Assisted Design
CADET	Computer-Assisted Design for Exercise Training
CADW	Civil Air Defense Warning
CAER	Community Awareness and Emergency Response
CAG	Core Agency Group
CAI	Chemical Accident/Incident
CAI	Computer-Aided Instruction
CAIRA	Chemical Accident/Incident response and assistance
CALL	Center for Army Lessons Learned
CALM	Cognitive and Affective Learning Model
CAM	Chemical Agent Monitor
CAMEO	Computer-Aided Management of Emergency Operations
CANDU	Canadian-Deuterium Uranium (Reactor)
CAO	Caribbean Area Office
CAP	Civil Air Patrol
CAP	Community Assistance Program
CAP	Community Action Program
CAP	Corrective Action Program
CAP	Collection, Analysis and Planning
CAPC	Civil Aviation Plan Committee
CAP-FASSE	Corrective Action Program-Federal Agency Support Services Element
CAPRT	Center for Aquatic Plant Research & Technology (at WES)
CAP-SSSE	Corrective Action Program-State Support Services Element
CAPSS	Corrective Action Program Support System
CAQ	Caribbean Area Office (FEMA)
CAR	Congressional Affairs Representative
CAR	Capability Assessment for Readiness
CARCAH	Chief, Aerial Reconnaissance Coordination -All Hurricanes
CARD	Collaborative Agencies for Responding to Disasters
CARDA	Continental Airborne Reconnaissance for Damage Assessment
CARL	Computerized Activities Results List
CART	Computer Analysis and Response Team
CAS	Crisis Action System
CAS	Chemical Abstract Service
CASE	Computer-Aided Software Engineering

CAT	Crisis Action Team
CAT	Category
CAT	Catastrophic
CATEGORY A	Debris Removal (PA)
CATEGORY B	Emergency Protective Measures (PA)
CATEGORY C	Roads and Bridges (PA)
CATEGORY D	Water Control Facilities (PA)
CATEGORY E	Buildings and Contents (PA)
CATEGORY F	Utilities (PA)
CATEGORY G	Parks, Recreational, and Other (PA)
CATEX	Categorical Exclusion
CATL	Chronology and Time Line
CATS	Consequences Assessment Tool Set
CATV	Cable Television
CAV	Community Assistance Visit
CB	Chemical Biological
CB	Citizens' Band
CB	Cluster Bomb
CBA	Contractors and Builders Association
CBD	Commerce Business Daily
CBDCOM	Chemical Biological Defense Command
CBEK	Compendium of Basic Exercise Knowledge
CBI	Chandler Burning Index
CBI	Computer-Based Instruction
CBIA	Coastal Barrier Improvement Act
CBIRF	Chemical-Biological Incident (or Initial) Response Force
CBL	Computer-Based Learning
CBO	Congressional Budget Office
CBO	Community Based Organization
CBQRF	Chemical - Biological Quick Response Force
CBR	Chemical, Biological, and/or Radiological
CBRA	Coastal Barrier Resources Act (also see COBRA)
CBRD	Chemical, Biological and Radiological Defense
CBRN	Chemical, Biological, Radiological, or Nuclear
CBRNE	Chemical, Biological, Radiological, Nuclear, or High-Yield Explosive
CBRNE-CM	Chemical, Biological, Radiological, Nuclear, or High-Yield Explosive-Consequence Management
CBRS	Coastal Barrier Resources System
CBRT	Chemical-Biological Response Team
CBRRT	Chemical & Biological Rapid Response team
CBT	Computer-Based Training
CBT	Chemical Biological Toxin
CC	Crisis Counseling
CC	Courtesy Copy
CC	Coordination Center
C&C	Components and Cladding
CCA	Contract Construction Agency
CCA	Comprehensive Cooperative Agreement (obsolete; see CA)

CCB	Configuration Control Board
CCC	Commodity Credit Corporation
CCC	Crisis Coordination Center
CCF	Coded Cities Forecast
CCF	Central Clearance Facility (U.S. Army)
CCG	Crisis Coordination Group
CCGD [#]	Commander, Coast Guard District [district number—17 for Alaska]
CCL	Contamination Control Line
CCN	Canonical Correlation Analysis
CCND	Consultative Committee on Natural Disasters
CCP	Casualty Collection Point
CCP	Crisis Counseling Program
CCST	Chemical Casualty Site Team
CCTV	Closed-Circuit Television
CD	Construction Division
CD	Civil Defense
CD	Compact Disc
CDBG	Community Development Block Grant
CDC	Center for Disease Control, U.S. Public Health Service
CDCP	Center for Disease Control and Prevention
CDD	Cross-Disaster Database
CDERA	Caribbean Disaster Emergency Response Agency
CDEX	Civil Defense Exercise
CDL	Commercial Driver's License
CDO	Central Dense Overcast
CDR	Critical Design Review
CDR	Crude Death Rate
CDRDB	Conventional Disaster Resource Datbase
CDRG	Catastrophic Disaster Response Group
CDRG-PAC	Catastrophic Disaster Response Group-Primary Agency Committee
CDRALCOM	Commander, Alaskan Command
CD-ROM	Compact Disc - Read Only Memory
CDRP	Catastrophic Disaster Response Plan
CDRPACOM	Commander, Pacific Command
CDRS	Call Detail Reporting System
CDT	Central Daylight Time (GMT - 5)
CD-WORM	Compact Disc - Write Once, Read Many
CDX	Control and Direction Exercise
CE	Civil Engineer
CEB	Contractor Evaluation Board
CEC	Chief Exercise Controller
CECG	Commanding General, Corps of Engineers
CED	Committee for Economic Development
CEERD	Engineer Research and Development Center, Vicksburg, MS; Hanover, NH; Champaign, IL; Alexandria, VA
CEF	Critical Emergency File
CEFC	USACE Finance Center, Millington, TN
CEHEC	Humphreys Engineer Center Support Activity, Alexandria, VA

CEHNC	Huntsville, U.S. Army Engineering and Support Center
CEI	Continuing Eligibility Inspection
CEI	Critical Elements of Information
CELRB	Buffalo, NY District
CELRC	Chicago, IL District
CELRD	Great lakes and Ohio River Division, Cincinnati, OH
CELRD-GL	Great lakes and Ohio River Division, Great Lakes Center, Chicago, IL
CELRE	Detroit, MI District
CELRH	Huntington, WV District
CELRL	Louisville, KY District
CELRN	Nashville, TN District
CELRP	Pittsburgh, PA District
CEM	Comprehensive Emergency Management
CEMA	Consumer Electronics Manufacturers Association
CEMD	County Emergency Management Director
CEMDC	USACE Marine Design Center, Philadelphia, PA
CEMIS	Crisis and Emergency Management Information System
CEMO	Canada Emergency Measures Organization
CEMOPS	Corps of Engineers Mobilization and Operations Planning System
CEMS	Crisis and Emergency Management Information System
CEMVD	Mississippi Valley Division, Vicksburg, MS
CEMVK	Vicksburg, MS District
CEMVM	Memphis, TN District
CEMVN	New Orleans, LA District
CEMVP	St. Paul, MN District
CEMVR	Rock Island, IL District
CEMVS	Saint Louis, MO District
CENAB	Baltimore, MD District
CENAD	North Atlantic Division, New York, NY
CENAE	New England District (formerly New England Division), Waltham, MA
CANAN	New York, NY District
CENAO	Norfolk, VA District
CENAP	Philadelphia, PA District
CANAU	Europe District
CENR	Committee on Environment and Natural Resources
CENWD	Northwestern Division, Portland, OR
CENWD-MR	Northwestern Division, Missouri River Region, Omaha, Nebraska
CENWD-NP	Northwestern Division, North Pacific Region, Portland, OR
CENWK	Kansas City, MO District
CENWO	Omaha, NE District
CENWP	Portland, OR District
CENWS	Seattle, WA District
CENWW	Walla Walla, WA District
CEO	Chief Executive Officer
CEOS	Committee on Earth-Orbiting Satellites
CEP	Civil Emergency Preparedness
CEP	Circular Error Probable
CEPA	Canadian Emergency Preparedness Association

CEPOA	Alaska District
CEPOD	Pacific Ocean Division, Honolulu, HI
CEPOF	Far East District, Korea
CEPOH	Honolulu District, HI
CEPOJ	Japan District
CEPPO	Chemical Emergency Preparedness and Prevention Office
CEQ	Council on Environmental Quality
CERC	Coastal Engineering Research Center (USACE)
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (also known as "Superfund")
CERES	California Environmental Resources Evaluation
CERL	U.S. Army Construction Engineering Research Laboratory, Champaign, IL
CERT	Community Emergency Response Team
CESAC	Charleston, SC District
CESAD	South Atlantic Division, Atlanta, GA
CESAJ	Jacksonville, FL District
CESAM	Mobile, AL District
CESAS	Savannah, GA District
CESAW	Wilmington, NC District
CESPA	Albuquerque, NM District
CESPD	South Pacific Division, San Francisco, CA
CESPK	Sacramento, CA District
CESPL	Los Angeles, CA District
CESPN	San Francisco, CA District
CEST	Cyber Emergency Support Team
CESWD	South West Division, Dallas TX
CESWF	Fort Worth, TX District
CESWL	Little Rock, AR District
CESWG	Galveston, TX District
CESWT	Tulsa, OK District
CETAC	Transatlantic Center, Winchester, VA
CEXS	Cooperative Extension Service
CF	Californium (symbol for)
CFA	Cognizant Federal Agency
CFAO	Cognizant Federal Agency Official
CFC	Chlorofluorocarbon
CFC	Combined Federal Campaign
CFDA	Catalog of Federal Domestic Assistance
CFGDP	Crash Feed Grain Donation Program
CFO	Chief Financial Officer
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
CFSA	Consolidated Farm Service Agency
CFSI	Congressional Fire Services Institute
CG	Coast Guard
CG	Commanding General
CG	Phosgene (symbol for)

CGD	Coast Guard District
CGEOC	Canadian Government Emergency Operations Center
CGFAA	Cerro Grande Fire Assistance Act
CGISS	Center for Geophysical Investigation of the Shallow Subsurface
CGM	Computer Graphics Metafile
CHARM	Complex Hazardous Release Model
CHEMTREC	Chemical Transportation Emergency Center
CHER-CAP	Comprehensive HAZMAT Emergency Response-Capability Assessment Program
CHG	Change
CHIP	Capability and Hazard Identification Program
CHL	Coastal and Hydraulics Laboratory, Vicksburg, MS
CHRIS	Chemical Hazard Response Information System
CIA	Central Intelligence Agency
CIAO	Chief Infrastructure Assurance Officer
CICAD	Center for Intelligence Collections and Distribution
CICG	Critical Infrastructure Coordination Group
CID	Community Identification
CID	Criminal Investigation Department
CIDA	Canadian International Development Agency
CIDCON	Civil Defense Condition
CIDER	Computer Interactive Display, Entry, and Retrieval
CIF	Cost, Insurance, and Freight
CIF	Central Information File
CIMA	Channel Industry Mutual Aid
CIMS	Correspondence and Issues Management System
CINC	Commander-In-Chief
CINCAMC	Commander-in-Chief, Air Mobility Command
CINCFOR	Commander in Chief, U.S. Forces Command
CINCLANT	Commander in Chief, Atlantic
CINCNORAD	Commander-in-Chief, North American Aerospace Defense Command
CINCPAC	Commander in Chief, Pacific Command
CINCSOC	Commander, Special Operations Command
CINCTRANS	Commander-in-Chief, Transportation Command
CINDI	Center for Integration of Natural Disaster Information
CIO	Chief Information Officer
CIP	Critical Infrastructure Protection
CIPWG	Critical Infrastructure Protection Working Group
CIRG	Critical Incident Response Group
CIS	Community Information System
CIS	Commonwealth of Independent States
CIS	Critical Incident Stress (facility)
CISD	Critical Incident Stress Debriefing
CITAC	Computer Intrusion Threat Assessment Center
CITO	Central Imagery Tasking Office (NIMA)
CJCS	Chairman, Joint Chiefs of Staff
CJIS	Criminal Justice Information System
CJTF	Commander, Joint Task Force

CK	Cyanogen chloride (symbol for)
CLIN	Contract Line Item Number
CLO	Congressional Liaison Officer
CLOMA	Conditional Letter of Map Amendment
CLOMR-F	Conditional Letter of Map Revision Based on Fill
CLS	Central Locator System
Cm	Curium (symbol for)
CM	Countermeasure
CM	Chief of Mission
CM	Cadre Manager
CMA	Chemical Manufacturers Association
CMAT	Consequence Management Advisory Team
CMC	Center for Marine Conservation
CMC	Crisis Management Center
CMCAC	Crisis Management Center Augmentation Cadre
CMHS	Center for Mental Health Services
CML	Commercial
CMO	Civil Military Operations
CMOC	Civil Military Operations Center
CMT	Crisis Management Team
CMU	Crisis Management Unit
CMU	Concrete Masonry Unit
CMX	Crisis Management Exercise
CN	Chloracetophenone (symbol for)
CNC	Central Network Control
CNC	Computer Numerical Control
CNN	Cable News Network
CNS	Central Nervous System
CNS	Corporation for National Service
CNWDI	Critical Nuclear Weapons Design Information
CO	Commanding Officer
CO	Communications Officer
CO	Contracting Officer
CO	Custodial Officer
CO	Construction / Operations
COA	Course of Action
COAP	Center for Ocean Analysis and Prediction
COB	Close of Business
COBOL	Common Business-Oriented Language
COBRA	Coastal Barriers Resources Act
COC	Combat Operations Center
COCOM	Coordinating Committee
COD	Cash On Delivery
CODEL	Congressional Delegation
COE	(Corps of Engineers); USACE is proper acronym
COG	Continuity of Government
COG	Council of Governments
COL	Cost Of Living

COL	Colonel
COLA	Cost-of-Living Allowance
COLISEUM	Community On Line System for End Users and Managers
COMET	Cooperative Program for Operational Meteorology Education and Training
COMINT	Communications Intelligence
COMM	Communications
COMPUSEC	Computer Security
COMREL	Community Relations
COMSEC	Communications Security
COMMZ	Communications Zone
CONPLAN	Operations Plan in Concept Format
CONUS	Continental U.S. (Contiguous 48 States)
CONUSA	Continental U.S. Army
CONOPS	Concept of Operations
CON-OPS	Construction-Operations (USACE)
COO	Chief Operating Officer
COOP	Continuity of Operations
COOP	Continuity of Operations Plan
COR	Contracting Officer Representative
CORE	Cadre of On-call Response Employees
CORE	Citizens of Oakland Respond to Emergencies
CORS	Continuously Operating Reference Station
COS	Chief of Staff
COS	Cash On Shipment
COSIN	Control Staff Instruction
COTHEN	Customs Over-The-Horizon Enforcement Network
COTP	Captain of the Port
COTR	Contracting Officer's Technical Representative
COTS	Commercial Off-The-Shelf
COWS	Cell Sites on Wheels
CP	Command Post
CPAS	Cellular Priority Access System
CPC	Climate Prediction Center
CPD	Community Planning and Development
CPE	Contingency Planning Exchange
CPG	Civil Preparedness Guide
CPHC	Central Pacific Hurricane Center
CPI	Consumer Price Index
CPO	Central Processing Office
CPPA	Certified Professional Property Administrator
CPPM	Certified Professional Property Manager
CPPS	Certified Professional Property Specialist
CPR	Cardiopulmonary Resuscitation
CPS	Certified Public Secretary
CPSC	Consumer Product Safety Commission
CPU	Central Processing Unit
CPX	Command Post Exercise
CR	Community Relations

CR	Claims Representative
CR	County Road
CR	Congressional Relations
CRAF	Civil Reserve Air Fleet
CRAMP	Coral Reef Assessment and Monitoring Program
CRC	Contamination Reduction Corridor
CRC	Crisis Response Cell
CRCPD	Conference of Radiation Control Program Directors
CREST	Contingency Real Estate Support Team
CRM	Crisis Resource Manager
CRM	Communications Resource Manager
CRO	Congressional Relations Officer
CRP	Conservation Reserve Program
CRP	Critical Review Phase
CRREL	U.S. Army Cold Regions Research and Engineering Laboratory, Hanover, NH (has branch office at Fort Wainwright, AK)
CRS	Community Relations Service
CRS	Community Rating System
CRS	Congressional Research Service
CRS	Catholic Relief Services
CRT	Cathode Ray Tube
CRTF	Commander, Response Task Force
CRUD	Create, Retrieve, Update, Delete
CRWG	Crisis Response Working Group
CRYSYS	Cryospheric System
CRZ	Contamination Reduction Zone
Cs	Cesim (symbol for)
CS	Chief Scientist (NOAA)
CS	Chief of Staff
CS	Ortho-chlorobenzylidene-malononitrile (symbol for)
CSA	Community Services Administration
CSA	Chief of Staff, Army
CSAF	Chief of Staff, Air Force
CSBG	Community Services Block Grant
CSDGM	Content Standard for Digital Geospatial Metadata
CSDP	Chemical Stockpile Disposal Program
CSEM	Center for the Study of Emergency Management
CSEPP	Chemical Stockpile Emergency Preparedness Program
CSG	Counterterrorism Security group
CSH	Combat Support Hospital
CSHIB	Chemical Safety and Hazards Investigation Board
CSIL	Commercial Satellite Imagery Library
CSMIP	California Strong-Motion Instrumentation Program
CSREES	Cooperative State Research Education and Extension Service
CST	Civil Support Team
CSU	Clearing-Staging Unit
CT	Contracting Division
CTA	Combined Travel Authorization

CTBT	Comprehensive Nuclear Test Ban Treaty
CTC	Conference and Training Center
CTD	Cumulative Trauma Disorder
CTF	Combined Task Force
CTOS	Containerized Tactical Operations Center
CTP	Cooperating Technical Partner
CTS	Cooperating Technical State
CTS	Central Transfer Station (for solid waste in the MOA)
CUREE	Consortium of Universities for Research in Earthquake Engineering
CUSEC	Central United States Earthquake Consortium
CUSP	Central United States Partnership
CV	Combined Verification
CVO	Cascades Volcano Observatory
CVP	Citizenship Verification Procedures
CVS	Combined Verification Section
CW	Continuous Wave
CW	Civil Works
CW	Chemical Warfare
CWA	Clean Water Act
CWIS	Civil Works Information System (obsolete term)
CWC	Chemical Weapons Convention
CWS	Check Writing System
CWS	Compressed Work Schedule
CWU	Church World United
CX	Phosgene Oxime (symbol for)
CY	Calendar Year
CY	Cubic Yard
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Act

D/A	Departments and Agencies
DA	Damage Assessment
DA	District Attorney
DA	Declaration of Applicant
DA	Department of the Army
DA	Diphenylchlorooarsine (symbol for)
DAAC	Distributed Active Archive Center
DAC	Disaster Assistance Center (State)
DAC	Disaster Application Center (FEMA--obsolete; see DRC)
DAC	Department of Army Civilian (DoD)
DAD	Deputy Associate Director
DAE	Disaster Assistance Employee
DAEO	Designated Agency Ethics Officer
DALIS	Disaster Assistance Logistics Information System
DALO	Disaster Area Liaison Officer
DAMAGES	Disaster Accountability Management System
DAP	Disaster Assistance Program(s)

DAR	Designated Agency Representative
DARIS	Disaster Automated Reporting and Information System
DARO	Defense Airborne Reconnaissance Office
DARPA	Defense Advanced Research Project Agency
DART	Damage Assessment Reconnaissance Team
DART	Disaster Assistance Response Team
DASH	Deputy Assistant Secretary for Health, Department of Health and Human Services
DASHO	Designated Agency Safety and Health Official
DASP	Disaster Assistance Support Program
DAST	Disaster Assessment Survey Team
DAT	Digital Audio Tape
DBA	Database Administrator
DBMS	Database Management System
DC	Direct Current
DC	District of Columbia
DC	District Command
DC	Dislocated Civilians
DC	Diphenylcyanoarsine (symbol for)
DCA	Defense Communications Agency
DCAA	Defense Contrac Audit Agency
DCAP	Disaster Corrective Actions Program
DCAS	Document Control and Accountability System
DCC	Document Control Center
DCC	Donations Coordination Center
DCCC	Defense Collection Coordination Center
DCE	Defense Coordinating Element
DCI	Director of Central Intelligence
DCLO	Deputy Congressional Liaison Officer
DCM	Deputy Chief of Mission
DCO	Defense Coordinating Officer (DoD Rep)
DCP	Cevelopment Concept Plan
DCPS	Digital Cartographic Production System
DCS	Defense Communications System
DCS	Deputy Chief of Staff
DCSLOG	Deputy Chief of Staff for Logistics
DCT	Donations Coordinating Team
DCW	Director of Civil Works
DCWDB	Direction, Control, and Warning Database
DD	Damaged Dwelling
DD	Direct Dial
DD	Defense Directive
DDD	Direct Distance Dialing
DDE	Dynamic Data Exchange
DDoS	Distributed Denial of Service
DDP	Data-Derived Product
DDRM	Deputy Disaster Recovery Manager
DEA	Drug Enforcement Administration

DEA	Data Exchange Agreement
DEC	Director's Executive Council
DEC	DCI Environmental Center
DEC	Disasters Emrgency Committee
DECD	Department of Economic and Community Development
Decon	Decontamination
DED	Diesel Engine Driven
DED	Department of Education
DEFCON	Defense Condition
DEM	Digital Elevation Model
DEM	Department of Environmental Management
DEM	Division of Emergency Management
DEP	Domestic Emergency Preparedness
DEP	Department of Environmental Protection
DEPER	Deployed Personnel Report
DEPS	Domestic Emergency Planning System
DEPSECDEF	Deputy Secretary of Defense
DERC	Damage Estimates, Ranges, and Casualties
DERF	Defense Emergency Response Fund
DES	(Alaska) Division of Emergency Services/ADES
DES	Disaster Emergency Services
DES	Data Encryption Standard
DEST	Domestic Emergency Support Team
DEW	Distant Early Warning
DFA	Direct Federal Assistance
DFAS	Defense Accounting and Finance Service
DFC	Disaster Finance Center
DFCO	Deputy Federal Coordinating Officer
DFCO-M	Deputy Federal Coordinating Officer for Mitigation
DFIRM	Digital Flood Insurance Rate Map
DFLO	Deputy Federal Liaison Officer
DFO	Disaster Field Office
DFOM	Disaster Field Operations Management
DFSG	Disaster Financial Services Group
DFSR	Disaster Financial Status Report
DFTO	Disaster Field Training Office (or organization)
DGCO	Deputy Grant Coordinating Officer
DH	Disaster Housing
DHA	Disaster Housing Assistance
DHC	Disaster Housing Checkwriter
DHCD	Department of Housing and Community Development
DHF	Dengue Haemorrhagic Fever
DHHS	Department of Health and Human Services
DHO	Disaster Housing Officer
DHP	Disaster Housing Program
DHS	Department Human Services
DHUD	Department of Housing and Urban Development
DIA	Defense Intelligence Agency

DIAO	Deputy Individual Assistance Officer
DID	Direct Inward Dial
DIFAX	Digital Facsimile
DII	Defense Information Infrastructure
DIR	Domestic Imagery Requirement
DIR	Director
DIRC	Disaster Information Resource Center
DIRNSA	Director, National Security Agency
DIS	Defense Investigative Service (obsolete; see DSS)
DISA	Defense Information Systems Agency
DISC	Disaster Information Systems Clearinghouse
DISCO	Defense Industrial Security Clearance Office (now called the Operations Center Columbus, or OCC)
DISN	Defense Information System Network
DISUM	Disaster Summary
DISUM	Daily Intelligence Summary
DLA	Defense Logistics Agency
DLG	Digital Line Graph
DLL	Dynamic-Link Library(ies)
DLS	Disaster Legal Services
DM	Diphenylaminochloroarsine (symbol for)
DMA	Defense Mapping Agency
DMA	Designated Market Area
DMAC	Disaster Management Advisory Committee
DMAT	Disaster Medical Assistance Team
DMAY2K	Disaster Mitigation Act of 2000
DMH	Disaster Mental Health
DMHT	Disaster Mental health Team
DMIS	Disaster Management Information System
DMORT	Disaster Mortuary Team, National Disaster Medical System
DMRIS	Defense Medical Regulating Information System
DMV	Department of Motor Vehicles
DNA	Defense Nuclear Agency
DNF	Did Not Finish
DNR	Department of Natural Resources
DNS	Department of Nuclear Safety
DNS	Domain Name Server
DO	Digital Orthophoto
DO	Director of Operations
DOA	Dead On Arrival
DOB	Date of Birth
DOB	Duplication of Benefits
DOC	Department of Conservation
DOC	Department of Commerce
DOC	Department of Corrections
DOD	Department of Defense
DoD	Department of Defense (alternate form)

DODD	Department of Defense Directive
DODRDB	DoD Resources Data Base
DOE	Department of Energy (Federal)
DOE	Division of Energy (State of Alaska) (within ADCRA)
DOEd	Department of Education
DOI	Department of the Interior
DOJ	Department of Justice
DOL	Department of Labor
DOLP	Disaster Operations Leadership Program
DOM	Disaster Operations Manual
DOMS	Director of Military Support
DON	Donation(s)
DONAT	Donation(s)
DOQ	Digital Orthophoto Quadrangle
DOS	Department of State
DOS	Disk Operating System
DoS	Denial of Service
DOT	Department of Transportation
DP	Disaster Preparedness
DP	Diphosgene (symbol for)
DPA	Delegation of Procurement Authority
DPA	Defense Production Act
DPA	Deepwater Ports Act
DPAO	Deputy Public Affairs Officer
DPAS	Defense Priorities and Allocations System
DPC	Domestic Policy Council
DPIG	Disaster Preparedness Improvement Grant
DPMT	Disaster Pediatric Medical Team
DPOB	Date and Place Of Birth
DPOD	Disaster Personnel Operations Division
DPP	Domestic Preparedness Program
DPP	Disaster Preparedness Program
DPRE	Displaced Persons, Refugees, and Evacuees
DPS	Department of Public Safety
DPW	Department of Public Works
DQ ADP	Workcode for Supporting District (Appropriation 96X3125)
DR	Disaster Declaration Number
DR	Disaster Response
DR	Disaster Recovery
DRAT	District Response Advisory Team
DRC	Disaster Recovery Center
DRD	Deputy Regional Director
DRES	Disaster Response Evaluation System
DRF	Disaster Relief Fund
DRF	Disaster Response Force
DRG	District Response Group
DRG	Digital Raster Graphic

DRM	Disaster Recovery Manager
DRT	Disaster Response Team (NIMA)
DRTF	Disaster Relief Task Force
DRU	Disaster Resistant Universities
DRU	Direct Reporting Unit
DS	Direct Support
DSB	Defense Science Board
DSC	Disaster Service Center
DSCO	Deputy State Coordinating Officer
DSFO	Deputy Senior FEMA Official
DSHR	Department of Safety and Human Resources
DSN	Defense Switched Network
DSO	Director of Site Operation
DSO	Disaster Safety Officer
DSP	Disaster Support Package
DSR	Damage Survey Report
DSS	Department of Social Services
DSWA	Defense Special Weapons Agency
DTAPPS	Disposable Toxicological Agent Personal Protection System
DTE	Disaster Temporary Employee
DTED	Digital Terrain Elevation Data
DTG	Date-Time Group
DTMS	Disaster Transportation Management
DTOS	Deployable Tactical Operations System
DTS	Diplomatic Telecommunications Service
DTRA	Defense Threat Reduction Agency
DTRG	Defense (or DoD) Technical Response Group
DTSA	Defense Technical Security Agency
DU	Dobson Unit
DUA	Disaster Unemployment Assistance
DULL SWORD	Nuclear safety incident
DUS	Deputy Under Secretary
DUSD	Deputy Undersecretary of Defense
DUST OFF	Medical Evacuation via Helicopter (slang)
DV	Distinguished Visitor
DVA	Department of Veterans Affairs
DW	Data Window
DWI	Disaster Welfare Inquiry
DWI	Disaster Welfare Information
DWI	Driving While Intoxicated
DWR	Department of Water Resources
DWT	Dead Weight
DZ ADP	Workcode for Disaster District (Appropriation 96X3125)

E228	Course designator for the EMI version of the Information and Planning Section Overview training course.
E231	Course designator for the EMI version of the Information and Planning for

	Managers training course.
E233	Course designator for the EMI version of the Information and Planning Section - Planning Support Branch training course.
E298	Course designator for the EMI version of the Information and Planning Section - Technical Services Branch training course.
EA	Emergency Action(s)
EA	Environmental Assessment
EAC	Echelon Above Corps
EAD	Executive Associate Director
EAM	Emergency Action Message
EAO	Emergency Action Officer
EAP	Employee Assistance Program
EAP	Emergency Action Procedures
EAP	Emergency Action Plan
EAR	Emergency Alert Radio
EAS	Emergency Alert System
EBC	Emergency Broadcast Center
EBS	Emergency Broadcast System (obsolete; see EAS)
EBW	Exploding Bridge Wire
EBW	Electronic Bridge Wire
EC	Emergency Coordinator
EC	Engineering Circular (USACE)
ECA	Evaluation and Corrective Action
ECA	Earth-orbit Crossing Asteroid
ECCS	Emergency Command and Control Systems
ECCV	Emergency Command & Communications Vehicle
ECD	Estimated Completion Date
ECD	Emergency Contacts Director
ECFG	Emergency Coordination Functional Group
ECG	Emergency Coordination Group
ECG	Exercise Control Group
ECI	Export-Controlled Information
ECL	Emergency Classification Level
ECP	Emergency Conservation Program
ECP	Entry Control Point
ECS	Emergency Communications Staff
ECS	Emergency Coordinating Staff
ECS	Electronic Certification System
ECT	Exercise Control Team
ECT	Emergency Coordinating Team
ECWAG	Emergency Community Water Assistance Grant
ED	Engineering Division
EDA	Economic Development Administration
EDAC	Economic Defense Advisory Committee
EDC	Energy Disruption Committee
EDC	EROS Data Center
EDI	Electronic Data Interchange
EDIS	Emergency Disaster Information System

EDR	Economic Development Representative
EDT	Eastern Daylight Time (GMT - 4)
EEE	Essential Evaluation Elements
EEFI	Essential Elements of Friendly Information
EEI	Essential Elements of Information
EEI	Eastern Equine Encephalitis
EEO	Equal Employment Opportunity
EEOC	Equal Employment Opportunity Commission
EER	Eligible Existing Resources
EERI	Earthquake Engineering Research Institute
EEX	Employee Express
EFAP	Emergency Feed Assistance Program
EEM	Exercise Evaluation Methology
EFO	Emergency Field Office
EFP	Emergency Feed Program
EFSNB	Emergency Food and Shelter National Board
EFS	Emergency Food and Shelter
EFSP	Emergency Food and Shelter Program
EFT	Electronic Funds Transfer
EHM	Earthquake Hazard Mitigation
EHS	Extremely Hazardous Substance
EIAC	Environmental Information Analysis Center (at WES)
EICC	Emergency Information and Coordination Center
EIDA	Executive Information and Display Area
EIDL	Economic Injury Disaster Loan
EIMA	Emergency Information and Media Affairs
EIO	Emergency Information Officer
EIPA	Emergency Information and Public Affairs (obsolete; see EIMA)
EIPP	Emergency Information Infrastructure Partnership
EIRS	Emergency Information Retrieval System
EIS	Emergency Information System
EIS	Environmental Impact Statement
EJ	Environmental Justice
ELINT	Electronic Intelligence
ELB	Emergency Locator Beacon
ELO	Environmental Liaison Officer
ELR	Employee Labor Relations
ELT	Evacuation Liaison Team
EM	Emergency Management
EM	Emergency Manager
EM	Exercise manual
EMA	Emergency Management Agency
EMI	Environmental Information Analysis Center (at WES)
EMAC	Emergency Management Assistance Compact
E-mail	Electronic Mail
EMAP	Emergency Management Accreditation Program
EMAS	Emergency Management Assessment System
EMD	Emergency Management Division

EMD	Emergency Management Director
EMERGCON	Emergency Condition
EMERS	Emergency Management Exercise Reporting System
EMI	Emergency Management Institute
EMI	Electromagnetic Interference
EMNPP	Emergency Management and National Preparedness Program
EMOC	Emergency Management Operations Center
EMOC	Emergency Management Operations Course
EMP	Electromagnetic Pulse
EMPA	Emergency Management Planning and Assistance
EMPG	Emergency Management Performance Grant
EMPO	Emergency Medical Preparedness Office
EMPTY QUIVER	Theft, seizure, or loss of a nuclear weapon or component
EMR	Environmental Management Review
EMR	Electromagnetic Radiation
EMR	Emergency Minimal Repair
EMRT	Emergency Medical Response Team
EMS	Emergency Medical System
EMS	Emergency Medical Services
EMS	Emergency Management Specialist
EMSA	Emergency Medical System Authority
EMSAC	Environmental Modeling Simulation & Research Center (at WES)
EMSHG	Emergency Management Strategic Healthcare Group
EMSSA	Emergency Medical Services System Act
EMT	Emergency Medical Technician
EMT	Emergency Management Team
EMT-P	Emergency Medical Technician- Paramedic
EMWIN	Emergency Managers Weather Information
ENDEX	End of Exercise
ENET	Emergency Education Network
ENR	Environmental and Natural Resources
ENSO	El Nino/Southern Oscillation
EO	Electro-Optical
EO	Executive Order
EOC	Emergency Operations Center
EOC	European Olympic Committee(s)
EOD	Explosive Ordnance Disposal
EOD	Entered On Duty
EOE	Equal Opportunity Employer
EOEA	Executive Office of Environmental Affairs
EOF	Emergency Operating Facility
EOF	End-of-File
EOM	End of Month
EOP	Executive Office of the President
EOP	Emergency Operations Plan
EOS	Earth-Observing System
EOS	Emergency Operations Software
EOS	Equation Of State

EOT	Emergency Operations Team
EOV	Emergency Operations Vehicle
EOW	Envelope Of Water
EP	Electric Power
EP	Engineer Pamphlet
EPA	Environmental Protection Agency
EPC	Emergency Preparedness Canada
EPCRA	The Emergency Planning and Community Right to Know Act of 1986; also known as the Superfund Amendments and Reauthorization Act (SARA), Title III.
EPG	Emergency Planning Guide
EPI	Emergency Public Information
EPIC	Emergency Preparedness Information Coordinator
EPLO	Emergency Preparedness Liaison Officers
EPOC	Emergency Point(s) of Contact
EPP	Executive Potential Program
EPPM	Emergency Planning, Preparedness, and Mobilization
EPS	Encapsulated PostScript
EPZ	Emergency Planning Zone
EQPCE	Earthquake Preparedness Center of Expertise (obsolete; now the Readiness Support Center, or RSC; part of SPD)
EQUIP	Earthquake Impacts Projection (Model)
ER	Emergency Relief
ER	Emergency Room
ER	Equal Rights
ER	Engineer Regulation
ERA	Equal Rights Amendment
ERAMS	Environmental Radiation Ambient Monitoring System
ERB	Executive Readiness Board
ERC	Emergency Response Coordinator
ERCG	Emergency Response Coordination Group, Public Health/Centers for Disease Control and Agency for Toxic Substances and Disease Registry
ERCS	Emergency Response Communications System
ERD	Emergency Response Directorate
ERDC	Engineer Research and Development Center, Vicksburg, MS; Hanover, NH; Champaign, IL; Alexandria, VA
ERDEC	Edgewood Research, Development and Engineering Center
ERF	Emergency Response Facility
ERG	Emergency Relocation Group
ERIS	Emergency Response Information System
ERLink	Emergency Response Link
ERM	Elevation Reference Mark
ERMS	Emergency Resource Management System
ERO	Emergency Recovery Office
EROS	Earth Resources Observing Satellite
ERP	Emergency Response Plan
ERRO	Emergency Response and Recovery Office

ERRS	Emergency and Rapid Response Services
ERS	Executive Reporting System
ERS	Emergency Relocation Site
ERT	Environmental Response Team
ERT	Emergency Response Team
ERT	Evidence Response Team
ERT-A	Advance Element of the Emergency Response Team (for Alaska, See AERT)
ERT-N	National Emergency Response Team
ERT-S	Emergency Response Team Support Capability
ERV	Emergency Response Vehicle
ES	Emergency Support
ESA	Endangered Species Act
ESDRB	Emergency Services and Disaster Relief Branch
ESF	Emergency Support Function
ESF 01	Transportation Emergency Support Function
ESF 02	Communications Emergency Support Function
ESF 03	Public Works and Engineering Emergency Support Function
ESF 04	Firefighting Emergency Support Function
ESF 05	Information and Planning Emergency Support Function
ESF 06	Mass Care Emergency Support Function
ESF 07	Resource Support Emergency Support Function
ESF 08	Health and Medical Services Emergency Support Function
ESF 09	Urban Search and Rescue Emergency Support Function
ESF 10	Hazardous Materiel Emergency Support Function
ESF 11	Food Emergency Support Function
ESF 12	Energy Emergency Support function
ESF Team	Emergency Support Function Team
ESFLG	Emergency Support Function Leaders Group
ESIC	Earth Science Information Center
ESP	Electrical Service Priorities
ESP	Emergency Staffing Plans
ESSC	Engineer Strategic Studies Center
ESV	Emergency Support Service Vehicle
EST	Eastern Standard Time (GMT + 5)
EST	Emergency Support Team (FEMA definition)
EST	External Support Team (USACE definition)
ESTED	Estimated Safe Time before Evacuation Decisions
ETA	Estimated Time of Arrival
ETA	Employment and Training Administration
ETC	et cetera
ETC	Emergency Transportation Center
ETD	Estimated Time of Departure
ETE	Estimated time Enroute
ETE	Evacuation Time Estimate
ETIC	Estimated Time in Commission
ETO	Exercise and Training Officer
ETOC	Emergency Tactical Operations Center

ETRMS	Emergency Transportation Resource Management System
ETT	Eligible Travel Trailer
EWO	Emergency War Order
EWP	Emergency Water Program
EWP	Emergency Watershed Protection
EWRI	Environmental and Water Resources Institute
EXORD	Execution Order
EXPLAN	Exercise Plan
F&A	Finance and Accounting
FAA	Federal Aviation Administration
FAA	Foreign Assistance Act
FAAS	FEMA Automated Acquisition System
FAAT	FEMA Acronyms, Abbreviations, & Terms
FAB	FEMA Advisory Board
FAC	Facility
FAD	Funding Authorization Document
FADED GIANT	Nuclear reactor radiological incident/ accident
FAE	Fuel Air Explosives
FAEST	Forward Area Emergency Support Trailer
FAIR	Fair Access to Insurance Requirements
FAMA	Fire Apparatus Manufacturer's Association
FAMAS	Facility Accreditation Management and Administration
FANMAP	FEMA Automated Network Management
FAO	Federal Approving Officer (or Official)
FAO	Food & Agricultural Organization (UN)
FAOC	FEMA Alternate Operations Center
FAPRS	Federal Access Program Retrieval System
FAQ	Frequently Asked Questions
FAR	Federal Acquisition Regulations
FARS	Financial Accounting and Reporting System
FAS	Foreign Agricultural Service
FASSE	Federal Agency Support Service Element
FAsT	Field Assessment Team (obsolete; see RNA)
FAX	Facsimile
FBFM	Flood Boundary and Floodway Map
FBI	Federal Bureau of Investigation
FBR	Fast Breeder Reactor
FC	Fire Control
FCA	Farm Credit Administration
FCC	Federal Coordinating Center
FCC	Federal Communications Commission
FCCE	Flood Control and Coastal Emergencies (Appropriation 96X3125)
FCIC	Federal Crop Insurance Corporation
FCIP	Federal Crime Insurance Program
FCIS	Federal Crime Insurance System
FCO	Federal Coordinating Officer
FCP	Forward Command Post

FCP	Federal Center Plaza
FCS	Food and Consumer Service (obsolete, replaced by FNS)
FCS	Farm Credit Service
FCT	Forward Coordinating Team
FCW	Flood Control Works
FDA	Food and Drug Administration
FDIC	Federal Deposit Insurance Corporation
FD	Fire Department
FD	Foundation Data (NIMA)
FE	Functional Exercise
FEAT	Franchise Emergency Action Team
FEB	Federal Executive Branch
FEB	Federal Executive Board
FEC	Facility Emergency Coordinator
FECA	Federal Employees Compensation Act
FECC	Federal Emergency Communications Coordinator
FED	Far East Engineer District (unauthorized acronym; use POF)
FEDD	Flood Elevation Determination Docket
FED-STD	Federal Standard
FEFFLA	Federal Employees Family Friendly Leave Act
FEGLI	Federal Employees Group Life Insurance
FEHB	Federal Employees Health Benefit
FEI	Federal Executive Institute
FEMA	Federal Emergency Management Agency
FEMA REGION I	ME, MA, CT, NH, RI, VT
FEMA REGION II	NJ, NY, PR, USVI
FEMA REGION III	DC, DE, MD, PA, VA, WV
FEMA REGION IV	AL, FL, GA, KY, MS, NC, SC, TN
FEMA REGION V	IL, IN, MI, MN, OH, WI
FEMA REGION VI	AR, LA, NM, OK, TX
FEMA REGION VII	IA, KS, MO, NE
FEMA REGION VIII	C0, MT, ND, SD, UT, WY
FEMA REGION IX	AZ, CA, HI, NV, Pacific Islands
FEMA REGION X	AK, ID, OR, WA
FEMAAR	Federal Emergency Management Agency Acquisition Regulation
FEMIS	Federal Emergency Management Information System
FEMA/RT	Federal Emergency Management Agency Response Team
FEPA	Fair Employment Practices Act
FEPC	Federal Employment Practices Commission
FEPCA	Federal Employees Pay Comparability Act
FEPP	Federal Excess Personal Property
FERA	Federal Emergency Relief Administration
FERC	FEMA Emergency Response Capability
FERS	Federal Employees Retirement System
FESC	FEMA Emergency Support Capability
FESC	Federal Emergency Support Coordinator
FF	FEMA Form
FFARS	FEMA Facsimile and Record System

FFG	Flash Flood Guidance
FFI	Federal Flood Insurance
FFS	Flash Flood Statement
FFMS	FEMA Frequency Management System
FFY	Federal Fiscal Year
FGDC	Federal Geographic Data Committee
FH	Fleet Hospital
FHA	Federal Highway Administration (DOT)
FHA	Federal Housing Administration (HUD)
FHBM	Flood Hazard Boundary Map
FHLB	Federal Home Loan Bank Board
FHMC	Federal Hazard Mitigation Coordinator
FHMO	Federal Hazard Mitigation Officer
FHWA	Federal Highway Administration
FHWA ER	Federal Highway Administration, Emergency Response
FIA	Flood Insurance Administration
FICA	Federal Insurance Contributions Act
FICEMS	Federal Interagency Committee on Emergency Medical Services
FICO	Flood Insurance Claims Officer
FIDLER	Field Instrument for the Detection of Low Energy Radiation
FIOC	Federal Interagency Operations Center
FIP	Federal Information Processing
FIPNC	Flood Insurance Producers national Committee
FIPS	Federal Information Processing Standards
FIR	Flood Insurance Report
FIR	Final Inspection Report
FIR	Federal Inspection Report
FIRM	Flood Insurance Rate Map
FIRMPD	Federal Information Resources Management Procedural Directive
FIRMR	Federal Information Resources Management Regulation
FIS	Flood Insurance Study
FIT	Financial Information Tool
FIT	Failed Income Test
FLAG	FEMA Logistics Advisory Group
FLETC	Federal Law Enforcement Training Center
FLO	Federal Liaison Officer
FLRA	Federal Laboratory Relations Authority
FLS	Flood Statement
FLSA	Fair Labor Standards Act
FM	Financial Management
FM	Field Manual
FM	Frequency Modulation
FM	Titanium Tetrachloride (symbol for)
FMA	Flood Mitigation Assistance
FMA	Floodplain Management Association
FMAP	Flood Mitigation Assistance Program
FMANA	Fire Marshals Association of North America
FMC	Federal Management Circular

FMCIMS	Flood Map Center Inventory Management System
FMCS	Federal Mediation and Conciliation Service
FMCSA	Federal Motor Carrier Safety Administration
FMDC	Flood Map Distribution Center
FMH	Federal Meteorological Handbook
FmHA	Farmers Home Administration
FMHCSS	Federal Manufactured Home Construction and Safety Standards
FMLA	Family and Medical Leave Act
FMP	Fishery Management Plan
FMR	Fair Market Rental
FMS	Financial Management System
FMV	Fair Market Value
FNARS	FEMA National Radio System
FNS	Food and Nutrition Service (USDA)
FO	Field Office
FOA	Field Operating Activity
FOA	Field Operating Agency
FOB	Federal Office Building
FOB	Free On Board
FOC	Free Of Charge
FOC	FEMA Operations Center
FOC	Full Operating Capability
FOD	Foreign Object Damage
FOF	Field Operating Facility
FOG	Field Operating (or Operations) Guide
FOIA	Freedom of Information Act
FONSI	Finding of No Significant Impact
FORMDEPS	FORSCOM Mobilization and Deployment Planning System
FORSCOM	Forces Command
FOS	Family of Services
FOS	Federal Operations Support
FOSC	Federal On-Scene Coordinator
FOUO	For Official Use Only
FOV	Field Of View
FPA	Federal Preparedness Agency (obsolete)
FPC	Federal Preparedness Circular
FPC	Federal Power Commission
FPEIS	Federal Programmatic Environmental Impact System
FPG	Federal Preparedness Guide
FPMR	Federal Property Mangement Regulation
FPO	Flood Potential Outlook
FP	Field Personnel
FPF	Federal Policy Fee
FPS	Federal Protection Service
FRC	FEMA Regional Center
FR	Field Reference
FRA	Federal Railroad Administration
FRB	Federal Reserve Board

FRC	Federal Regional Center
FRCM	FEMA Regional Communications Manager
FRCO	Federal Resource Coordinating Officer
FRCM	FEMA Regional Communications Manager
FRD	Formerly Restricted Data
FRERP	Federal Radiological Emergency Response Plan
FRID	Flood Risk Directory
FRMAC	Federal Radiological Monitoring and Assessment Center
FRMAP	Federal Radiological Monitoring and Assessment Plan
FRO	Flood Response Office
FRP	Federal Response Plan
FHPCC	Federal Radiological Preparedness Coordinating Committee
FRPG	Federal Response Planning Guidance
FRP	Federal Response Plan
FRS	Federal Reserve System
FRSA	Federal Railroad Safety Act
FS	Forest Service
FS	Sulfur trioxide solution (symbol for)
FSA	Farm Service Agency
FSA	Fire Suppression Assistance
FSB	Forward Support Base
FSC	Federal Support Center
FSC	FEMA Storage Center
FSE	Full-Scale Exercise
FSG	Financial Services Group
FSIS	Food Safety and Inspection Service
FSLIC	Federal Savings and Loan Insurance Corporation
FSM	Federated States of Micronesia
FSN	Federal Stock Number
FSN	FEMA Switched Network
FSR	Financial Status Report
FSS	Family Support Services (NTSB)
FSS	Federal Supply Service
FSTS	Federal Secure Telephone System
FSVS	FEMA Secure Video System
FT	Full Time
Ft	Feet (or Foot)
FTA	Federal Transit Administration
FTC	Federal Trade Commission
FTD	Federal Travel Directory
FTE	Full Time Equivalent
FTS	Federal Telecommunications Systems
FTS	Federal Telephone System
FTS	Forms Tracking System
FTX	Field Training Exercise
FW	Fire Weather
FWAN	FEMA Wide Area Network
FWP	Federal Women's Program

FWPCA	Federal Water Pollution Control Act
FWS	U.S. Fish and Wildlife Service
FY	Fiscal Year
FYI	For Your Information
FZ	Flood Zone
FZDC	Flood Zone Determination Company
G&A	General & Administrative
GA	General Adjustor
GA	Tabun (symbol for)
GAAP	Generally Accepted Accounting Principles
GAAS	Generally Accepted Auditing Standards
GACC	Geographic Area Coordination Center
GAO	General Accounting Office
GAR	Governor's Authorized Representative
GB	Gigabyte
GB	Sarin (symbol for)
GBL	Government Bill of Lading
GC	General Counsel
GCCS	Global Command and Communications System
GCE	Government Cost Estimate
GCO	Grant Coordinating Officer
GCOS	Global Climate Observing System
GCS	Ground Control Station
GD	Soman/Viscous Soman (symbol for)
GDIN	Global Disaster Information Network
GDNP	Gross Domestic National Product
GDS	Geographic Display System
GDSS	Global Decision Support System
GDT	Ground Data Terminal
GE	General Expense (Appropriation 96X3124)
GE	General Emergency
GE	symbol for a type of nerve agent
GEMINI	Global Emergency Management Information Network Initiative
GEMS	Global Emergency Management System
GETS	Government Emergency Telecommunications Service
GF	Cyclosarin (symbol for)
GFE	Government Furnished Equipment
GFI	Government-Furnished Information
GFIP	Group Flood insurance Policy
GFM	Government-Furnished Material
GGI&S	Global Geospatial Information and Services
GHAD	Geologic Hazard Abatement District
GHz	Giga Hertz (1,000 million cycles per second)
GI	Geographic Information
GI	Ground Infantry
GIL	Grant-In-Lieu

GIS	Geographic Information System
GIWW	Gulf Intracoastal Waterway
GLOSS	Global Sea Level Observing System
GM	Guidance Memorandum
GMF	Government Master File
GMR	Graduated Mobilization Response
GMT	Greenwich Mean Time (a.k.a. ZULU Time)
GNIS	Geographic Names Information System
GOALS	Government On-Line Accounting Link System
GOCO	Government-Owned, Contractor Operated
GOES	Geostationary Operational Environmental Satellite
GOGO	Government-Owned, Government Operated
GOSC	Global Operations Security Center
GOTS	Government Off-The-Shelf
GOV	Government Owned Vehicle
GPL	General Population Level
GPLD	Government Property Lost or Damaged
GPM	Gallons Per Minute
GPMRC	Global Patient Movement Requirements Center
GPO	Government Printing Office
GPRA	Government Performance and Results Act
GPS	Global Positioning System
GS	General Schedule
GS	Geological Survey
GS	Geo-Stationary
GS	General Support
GSA	General Services Administration
GSAAR	General Services Administration Acquisition Regulation
GSACR	GSA Communications Representative
GSL	Geotechnical and Structures Laboratory, Vicksburg, MS
GST	Ground Support Team
GTA	Government Travel Authorization
GTA	Government Travel Account
GTM	Government Technical Monitor
GTR	Government Transportation Request
GTR	Government Technical Representative
GTS	Global Telecommunications System
GUI	Graphical User Interface

H	Mustard Agent (symbol for)
H&H	Hydraulics and Hydrology
HAI	Human Affairs International
HAST	Hawaiian Standard Time (GMT - 10) (see HST)
HAST	Humanitarian Assistance Survey Team
HAWAS	Hawaiian Warning System
HAZMAT	Hazardous Material(s)
HAZMIN	Hazard Minimization

HAZMIT	Hazard Mitigation
HAZUS	Hazards-United States
HAZWOPER	Hazardous WasteOperation and Emerency Response
HBX	High-Blast Explosive
HC	Health Canada
HC	Hexachlorethane (symbol for)
HCF	Height Correction Factor
HD	Hurricane Day
HD	Distilled mustard (symbol for)
HDD	Heating Degree Days
HDP	Hurricane Destructive Potential
HE	High Explosive
HECSA	U.S. Army Humphreys Engineering Center Support Activity, Ft. Belvoir, VA
HED	Honolulu Engineer District (unauthorized acronym; use POH)
HEICS	Hospital Emergency Incident Command System
HEAR	Hospital Emergency Area Network
HELP	Health Emergencies in Large Populations
HEMP	High Altitude Electromagnetic Pulse
HERN	Hospital Emergency Radio Network
HERT	Hospital Emergency Response Team
HES	Hurricane Evacuation Study
HET-ESF	DOT Emergency Transportation Emergency Support Function
HEU	Highly Enriched Uranium
HEW	Health, Education, and Welfare
HF	High Frequency (2-50 Mhz)
HF-SSB	High Frequency Single Side Band Radio
HHA	High Hazard Area
HHD	Headquarters and Headquarters Detachment
HHS	Department of Health and Human Services
HHSEOC	Health and Human Services Emergency Operations Center
HIC	Hydrologist- in-Charge
HIP	Housing Improvement Program
HL	Helpline
HL	Hotline
HL	Mustard-lewisite (symbol for)
HLS	Hurricane Local Statement
HLT	Hurricane Liaison Team
HLW	High-Level Waste
HM	Hazard Mitigation
HMAC	Haardous Materials Advisory Council
HMC	Hazard Mitigation Coordinator
HME	Health, Medical, and Environmental
HMGP	Hazard Mitigation Grant Program
HMIX	Hazardous Materials Information Exchange
HMMWV	Highly Mobile Multipurpose Wheeled Vehicle
HMRU	Hazardous Materials Response Unit
HMST	Hazard Mitigation Survey Team

HMT	Hazard Mitigation Team
HMTA	Hazardous Materials Transportation Act
HMTAP	Hazard Mitigation Technical Assistance Program (or Plan)
HMTUSA	Hazardous Materials Transportation Uniform Safety Act
HN	Nitrogen mustard (symbol for)
HNAT	Human Needs Assessment Team
HOB	Height of Burst
HOH	Head Of Household
HOPWA	Housing Opportunities for Persons With AIDS
HP	Hurricane Program
HP	Hewlitt-Packard
HPAC	Hazard Prediction and Assessment Capability
HPC	Hydrometerological Prediction Center
HPRP	Home Protection Roofing Program
HQ	Headquarters
HQDA	Headquarters, Department of the Army
HQUSACE	Headquarters, U.S. Army Corps of Engineers
HR	Human Resources
HR	House of Representatives
HR	Home Repair
HRCQ	Highway Route Controlled Quantity
HRDI	High Resolution Doppler Imager
HRPT	High Resolution Picture Transmission
HRT	Hostage Rescue Team
HS	Human Services
HSC	Health Services Command (Army)
HSEES	Hazardous Substances Emergency Event Surveillance System
HSO	Human Services Officer
HSS	Health Service Support
HSS	Hyperspectral Sensor System
HST	Hawaiian Standard Time (GMT - 10)
HT	Hand-held Transceiver (or Handi-Talky)
HT	Mustard-T (symbol for)
HTGR	High-Temperature Gas-Cooled Reactor
HTML	HyperText Markup Language
HWR	Heavy Water Reactor
HTW	Hazardous and Toxic Waste
HUD	Department of Housing and Urban Development
HUMINT	Human Intelligence
HURCON	Hurricane Condition
HUREVAC	Hurricane Evacuation
HVAC	Heating, Ventilating, and Air Conditioning
HWC	Health and Welfare Canada
HWM	High Water Mark
HWRC	Hazardous Waste Research Center (at WES)
Hz	Hertz

IA	Individual Assistance
IA	In and Around
IAA	Interagency Agreement
IACNDR	Inter-American Committee for Natural Disaster Reduction
IACP	International Association of Chiefs of Police
IAEA	International Atomic Energy Agency
IAEM	International Association of Emergency Managers
IAFC	International Association of Fire Chiefs
IAFF	International Association of Fire Fighters
IAG	Interagency Advisory Group
IAMS	Integrated Army Mobilization Study
IAO	Individual Assistance Officer
IAP	Incident Action Plan
IAW	In Accordance With
IBC	International Broadcast Center
IBHS	Institute for Business and Home Safety
IBS	Integrated Baseline system
IBWA	International Bottled Water Association
IC	Incident Commander
IC	Information Collection
IC	Information Collection
IC	Integrated Circuit
ICAF	Industrial College of the Armed Forces
ICAO	International Civil Aviation Organization
ICBM	Intercontinental Ballistic Missile
ICC	Interstate Commerce Commission (obsolete; replaced by STB)
ICC	Incident Command Center
ICC	Increased Cost of Compliance
ICC	International Code Council
ICCB	Intergovernmental Consultation and Coordination Board
ICCOH	Interagency Coordinating Committee On Hurricanes
ICF	Insulating Concrete Forms
ICIMPP	Integrated Civilian Industrial Mobilization Planning Process
ICMOP	Integrated CONS Medical Operations Plan
ICISF	International Critical Incident Stress foundation
ICMA	International City/County Managers' Association
ICODS	Interagency Committee on Dam Safety
ICP	Incident Command Post
ICP	Information Collection Plan
ICPAE	Interagency Committee on Public Affairs in Emergencies
ICRC	International Committee of the Red Cross
ICS	Incident Command System
ICSSC	Interagency Committee on Seismic Safety in Construction
ICU	Information Coordination Unit
ICU	Incident Crisis Unit
ICU	Intensive Care Unit
ICUMP	Integrated CONUS Medical Mobilization Plan
ICW	Inspection of Completed Works

ICWW	Intercoastal Waterway
ID	Identification
IDEX	Image Data Exploitation (System)
IDFO	Interim Disaster Field Office
IDIQ	Indefinite Delivery, Indefinite Quantity
IDLH	Immediate Danger to Life and health
IDNR	International Decade for Natural Disaster Reduction
IDP	Imagery Derived Product
IDPP	Infectious Disease Prevention Program
IDR	Institute for Disaster Research
IDS	Intrusion Detection System
IDS	Information Display System
IDT	Indefinite Delivery Type
IEA	International Energy Agency
IEC	InterExchange Carrier
IEC	Integrated Exploitation Capability
IED	Improvised Explosive Device
IEI	Initial Eligibility Inspection
IEMC	Integrated Emergency Management Course
IEMIS	Integrated Emergency Management Information System
IEMS	Integrated Emergency Management System
IEVS	Income Eligibility Verification System
IEWPG	Interagency Emergency Water Planning Group
IFB	Invitation for Bids
IFG	Individual and Family Grant
IFGP	Individual and Family Grant Program
IFLOWS	Integrated Flood Observing and Warning System
IFMIS	Integrated Financial Management Information System
IFR	Instrument Flight Rule
IFSAR	Interferometric Synthetic Aperture Radar
IFT	Intelligence Task Force
IG	Inspector General
IG	Instructor guide
IH	Intense Hurricane
IHC	International Hurricane Center
IHC	Interagency Hotshot Crew
IHD	Intense Hurricane Day
IHMT	Interagency Hazard Mitigation Team
IHS	Indian Health Service
IIC	Interagency Intelligence Cell
IIC	Investigator in Charge (NTSB)
IIOM	Install, Integrate, Operate, and Maintain
IIPLR	Insurance Institute for Property Loss Reduction
IIT	Incident Investigation Team
ILE	Installations, Logistics & Environment
IM	Information Management
IMA	Individual Mobilization Augmentee

IMACPP	Individual Mobilization Augmentee County Partnering Program
IMC	Interim Message Change
IMC	International Medical Corps
IMC	International Mechanical Code
IMINT	Imagery Intelligence
IMPAC	International Merchant Purchase Authorization Card
IMPLAN	Implementation Plan
IMS	Information Management System
IMSURT	International Medical Surgical Response Team
IMT	Incident Management Team
IND	Improvised Nuclear Device
IMU	Inertial Measurement Unit
INEA	International Atomic Energy Agency
INER	Interagency National Executive Reserve
INES	International Nuclear Event Scale
INF	Infrastructure
INF	Immediate Needs Funding
INFO	Information
INFOSEC	Information Security
INMARSAT	International Maritime Satellite
INS	Insurance
INS	Immigration and Naturalization Service
INSARAG	International Search and Rescue Advisory Group
INTERCOM	Internal Communications
Insp	Inspection
IOC	International Olympic Committee
IOC	Initial Operational Capability
IOR	Initial Operating Report
IP	Information and Planning
I&P	Information and Planning
I/P	Information and Planning
IPA	Intergovernmental Personnel Act
IPC	International Paralympic Committee
IPR	In-Progress Review
IPP	Imminent Peril to the Public
IPR	Initial Projections Report
IPS	Information and Planning Section
IPS	Information Processing System
IPSCOM	Imagery Policy and Security Committee
IPT	Integrated Process Team
IPZ	Ingestion Pathway Zone
IR	Infrared
IRB	Information Resources Board
IRBM	Intermediate Range Ballistic Missile
IRC	International Residential Code
IRF	Initial Response Force
IRIS	Incorporated Research Institutions for Seismology
IRM	Information Resources Management

IRMS	Information Resources Management Service
IRP	Initial Response Plan
IRPMR	Information Resources Procurement and Management Review
IRR	Individual Ready Reserves
IRR	Initial Response Resource(s)
IRS	Internal Revenue Service
IRT	Initial Response Team
IRT	Independent Review Team
IRZ	Immediate Response Zone
IS	Information System(s)
IS	Information Security
IS	Infrastructure Support
IS	Inspection Services
ISA	Incident Staging Area
ISAAG	Information Systems Architectural Advisory Group
ISABP	International South Atlantic Buoy Program
ISAR	Inspection Services Activity Report
ISB	Installation Support Book
ISC	Interstate Commerce
ISCS	International Satellite Communications Systems
ISC	Inspections Services Coordinator
ISDN	Integrated Services Digital Network
ISDR	International Strategy for Disaster Reduction
ISO	Insurance Services Office
ISOC	Information Security Oversight Committee
ISP	Information Systems Plan
ISP	Internet Service Provider
ISP	Immediate Services Program
ISPAG	Information Systems Policy Advisors Group
ISSP	Information Systems Security Program
IST	Incident Support Team
IST-A	Incident Support Team - Advance Element
ISTEA	Intermodal Surface Transportation Efficiency Act
ISVB	Imagery Science Validation Board
IT	Information Technology
ITAG	Integrated Threat Management Group
ITC	International Trade Commission
ITC	Information Technology Coordinator
I-Team	Incident Team
ITIC	International Tsunami Information Center
ITL	Information Technology Laboritory, Vicksburg, MS
ITED	IFSAR terrain Elevation
ITM	Inspection Transfer Manager
ITMRA	Information Technology Management Reform Act of 1996
I-TRAP	Interagency Terrorism Response Awareness Program
ITS	Information Technology Services
ITSH	Internal Transport, Storage, and Handling
ITV	In-Transit Visibility

IVD	Interactive Video Disk
IVR	Interactive Voice Response
I&W	Indications and Warning
IWP	Integrated Warning Program
J-3	Operations (Joint Staff)
J-4	Logistics (Joint Staff)
JAARS	Joint After-Action Reporting System
JAD	Joint Application Development
JAG	Judge Advocate General (DoD)
JAG	Joint Action Group
JANAP	Joint Army-Navy-Air Force Publication
JATS	Joint Air Transportation System
JAWAS	Joint Automated Weather Observing System
JCC	Joint Coordination Center
JCS	Joint Chiefs of Staff
JDISS	Joint deployable Intelligence Support System
JECG	Joint Exercise Control Group
JED	Japan Engineer District (unauthorized acronym; use POJ)
JEEP	Joint Emergency Evacuation Plan
JEMP	Joint Exercise Management Program
JEOC	Joint Emergency Operations Center
JFACC	Joint Force Air Component Commander
JFC	Joint Force Commander
JHAT	Joint Hazardous Assessment Team
JHEC	Joint Hazardous Evaluation Center
JIB	Joint Information Bureau
JIC	Joint Information Center
JIC	Joint Ice Center
JIC	Joint Intelligence Center
JICPAC	Joint Intelligence Center, Pacific
JIISE	Joint Interagency Intelligence Support Element
JIMPP	Joint Industrial Mobilization Planning Process
JIS	Joint Information System
JIT	Job Instruction Training
JIT	Just In Time
JMC	Joint Movement Center
JMMO	Joint Medical Mobilization Office
JMRO	Joint Medical Regulating Off ice
JNACC	Joint Nuclear Accident Coordinating Center
JOC	Joint Operations Center
JOPES	Joint Operations Planning and Execution System
JPEG	Joint Photographic Experts Group
JPIC	Joint Public Information Center
JPMRC	Joint Patient Movement Requirements Center
JPMT	Joint Patient Movement Team
JPO	Joint Program Office

JRMPO	Joint Regional Medical Planning Office
JRS	Joint Reporting System
JRT	Joint Response Team
JSAC	Joint State Area Command
JSCP	Joint Strategic Capabilities Plan
JSOTF	Joint Special Operations Task Force
JSTARS	Joint Surveillance Target Attack Radar System
JTF	Joint Task Force
JTF-CS	Joint Task Force-Civil Support
JTOT	Joint Tactical Operations Team
JTPA	Job Training Partnership Act
JTR	Joint Travel Regulations
JTRB	Joint Telecommunications Resources Board
JTTF	Joint Terrorism Task Force
JTWC	Joint Typhoon Warning Center
JWICS	Joint Worldwide Intelligence Communications system
KAPP	Key Assets Protection Program
kb	Kilobit
kB	Kilobyte
kBPS	Kilobits Per Seconds
KCCO	Kansas City Commodity Office
KD	Knocked Down
KHz	Kilo Hertz (thousand cycles per second)
KI	Potassium Iodide (symbol for)
Km	Kilometer
KN	Kilo-Newton
KSA	Knowledge, Skills, and Abilities
KT	Kiloton
kva	Kilovoltampere
KVERT	Kamchatkan Volcanic Eruptions Response Team
kW	Kilowatt
L	Lewisite (symbol for)
LAC	Local Assistance Center
LAN	Local Area Network
LAN/WAN	Local Area Network/Wide Area Network
LANDSAT	Land Satellite
LANTAREA	Atlantic Area
LAO	Lead Agency Official
LCCE	Life Cycle Cost Estimate
LCM	Life Cycle Management
LCO	Limiting Condition for Operation
LCT	Liaison Coordination Team
LD	Lethal Dose
LDS	Lightning Detection System

LDW	Last Day Worked
LEC	Local Exchange Carrier
LEP	Leadership Excellence Program
LEPC	Local Emergency Planning Committee
LEPD	Local Emergency Planning District
LERT	Logistics Emergency Response Team
LETS	Law Enforcement Telecommunications System
LEU	Low-Enriched Uranium
LEVEL 1 EST	Full EST activation level
LEVEL 2 EST	Intermediate EST activation level
LEVEL 3 EST	Minimal EST activation level
LF	Linear Foot
LF	Low Frequency
LFA	Lead Federal Agency
LFE	Lowest Floor Elevation
LFO	Lead Federal Official
LFP	Livestock Feed Programs
LH	Local Hire
LHA/LHD	Landing Helicopter - Assault/Landing Helicopter - Deck
LHMC	Local Hazard Mitigation Coordinator
LHR	Limited Home Repair
LHW	Last Hour Worked
Li	Lithium (symbol for)
LIBSYS	Library System
LIDAR	Light Detection and Ranging
LIHEAP	Low Income Household Energy Assistance Program
LIMFAC	Limiting Factor
LIMS	Logistics Information Management System
LISS	Linear Imaging and Self-Scanning
LL	Lessons Learned
LLW	Low-Level Waste
LLWS	Low-Level Wind Shear
LM	Logistics Management
LM	Logistics Manager
LMF	Logistics Management Facility
LMFBR	Liquid Metal Fast Breeder Reactor
LNG	Liquified Natural Gas
LNO	Liaison Officer
LOA	Letter of Agreement
LOC	Letter of Credit
LOC	Line of Communication
LOCA	Loss-Of-Coolant Accident
LOC-TFCS	Letter-of-Credit - Treasury Financial Communications System
LOEP	Louisiana Office of Emergency Preparedness
LOG	Logistics
LOGCAP	Logistics Civil Augmentation Program
LOI	Letter Of Intent
LOMA	Letter of Map Amendment

LOMC	Letter of Map Change
LOMR	Letter of Map Revision
LOMR-F	Letter of Map Revision Based on Fill
LOS	Line-of-Sight
LOSA	Logistical Operations Staging Area
LOSSEST	Loss Estimation
LPDP	Livestock Preservation Donation Program
LPG	Liquified Petroleum Gas
LR	Limited Response
LRB	Buffalo, NY District
LRC	Chicago, IL District
LRC	Learning Resource Center
LRC	Logistics Readiness Center
LRD	Great lakes and Ohio River Division, Cincinnati, OH
LRD-GL	Great lakes and Ohio River Division, Great Lakes Center, Chicago, IL
LRE	Detroit, MI District
LRFD	Load and Resistance Factor Design
LRH	Huntington, WV District
LRIP	Low Rate Initial Production
LRL	Louisville, KY District
LRMP	Long Range Management Plan
LRN	Nashville, TN District
LRP	Pittsburgh, PA District
LRU	Lowest Replaceable Unit
LS	Lump Sum
LSC	Life Support Center
LSCAD	Lightweight Standoff Chemical Agent Detector
LSS	Life Support System
LT	Lieutenant
LTC	Lieutenant Colonel
LTG	Lieutenant General
LTR	Long Term Recovery
LULC	Land Use and Land Cover
LWF	Lutheran World Federation
LWOP	Leave Without Pay
LWR	Light-Water Reactor

M	Marshalling Area
MA	Marshalling Area
MA	Mission Assignment
MAAD	Mobile Asset Activities Document
MAC	Mapping and Analysis Center
MAC	Mission Assignment Coordinator
MACA	Military Assistance to Civil Authorities
MACC	Multi-Agency Coordination Center
MACDIS	Military Assistance for Civil Disturbances

MACOM	Major Command (Army)
MAEC	Mid-America Earthquake Center
MAFFS	Modular Airborne Fire Fighting System
MAJCOM	Major Command (Air Force)
MapInfo	FEMA-standard GIS software program
MAR	Monthly Accomplishments Report
MARAC	Mutual Aid Regional Advisory Committee
MARAD	Maritime Administration
MAREP	Marine Report
MARR	Mission Assignment Reimbursement Request
MARS	U.S. Army Military Affiliate Radio System
MARS	Mobile Analytical Response System
MARS	Multifunction Acquisition and Reporting
MarshMALLOW	Marsh Management Activities for Learning the Lifestyles of Wildlife
MASF	Mobile Aeromedical Staging Facility
MASH	Mobile Army Surgical Hospital
MASINT	Measurement and Signature Intelligence
MAST	Military Assistance to Safety and Traffic
MAT	Mobilization Assistance Team (DoD)
MATES	Mobilization and Training Equipment Site
MATTS	Mobile Air Transportable Telecommunications System
mb	Millibar
MB	Megabyte
MBA	Master of Business Administration
MBA	Mortgage Bankers Association
MBO	Management By Objectives
MBPS	Megabytes Per Second
MBTA	Migratory Bird Treaty Act
MC	Mobilization Center
MC	Marine Corps
MC	Member of Congress
MCA	Military Construction, Army
MCA	Multichannel Analyzer
MCC	Movement Coordination Center
MCC	Mobility Control Center (DoD)
MCC	Mission Control Center
MCC	Message Control Center
MCD	Medical Crew Director
MCEER	Mulitidisciplinary Center for Earthquake Engineering Research
MCF	Mass Care and Feeding
MCF	Movement Control Function
MCMC	Mid-Continent Mapping Center
MCMT	Mobilization Center Management Team
MCO	MERS Coordination Office
MCOC	Marine Corps Operations Center
MCP	Mission Closeout Plan
MCR	Military Communications Representative
MCS	Movement Coordination System

MCU	Movement Coordination Unit
MCV	Mobile Coordinating Vehicle
MD	Mitigation Directorate (or Division)
MD	Medical Doctor
MD	Methyldichloroarsine (symbol for)
MDF	Medical, Dental, and Funeral
MDRO	Mission Disaster Relief Officer
MDS	Mennonite Disaster Service
MDST	Mountain Daylight Savings Time (see MDT)
MDT	Mountain Daylight Time (GMT - 6)
ME	Medical Examiner
MEA	Major Emergency Action
MEAG	Major Emergency Action Guide
MEAP	Mobile Environmental Analytical Platform
MEL	Mobile-Erector launcher
MEMA	Mississippi Emergency Management Agency
MEMA	Maine Emergency Management Agency
MEOW	Maximum Envelope of Water
MEP	Management Engineering Plan
MERRT	Medical Emergency Radiological Response Team
MERS	Mobile Emergency Response Support
MET	Meteorologist (or Meterological)
METAR	Meteorological Aviation Report
METL	Mission-Essential Task List
METSAT	Meteorological Satellite
meV	Millielectronvolt
MeV	Megaelectronvolt
MG	Major General
MH	Mental Health
MH	Mobile Home
MH	Manufactured Housing
MHC	Mobile Health Clinic
MHE	Material Handling Equipment
MHS	Message Handling System
MHHW	Mean Higher High Water
MHTGR	Modular High Temperature Gas Reactor
MHW	Mean High Water
MHz	MegaHertz (million cycles per second)
MIACC	Major Industrial Accidents Council of Canada
MIC	Meteorologist in Charge
MIC	Media Information Center
M&IE	Miscellaneous and Incidental Expenses
MIEP	Mass Immigration Emergency Plan
MILCON	Military Construction
MIPR	Military Interdepartmental Purchase Request
MIRV	Multiple Independent Re-Entry Vehicle
MIS	Management Information System
MIT	Mitigation

MKT	Mobile Kitchen Trailer
MLD	Median Lethal Dose
MLLW	Mean Lower Low Water
MLOS	Microwave Line-of-Sight
MLW	Mean Low Water
MMC	Main Media Center
MMCE	Medical Management of Chemical Exposure
MMI	Modified Mercalli Intensity
MMIS	Municipal Management Information System
MMP	Mobilization Master Plan
MMPA	Marine Mammal Protection Act
MMRS	Metropolitan Medical Response System
MMS	Minerals Management Service
MMST	Metropolitan Medical Strike Team
MO	Medical Officer
MOA	Memorandum of Agreement
MOA	Municipality of Anchorage
MOB	Main Operating Base
MOB	Mobilization
MOB Center	Mobilization Center
MOC	MERS Operations Center
MODEM	Modulator/Demodulator
MOM	Middle of Month
MOMA	Management of Mission Assignment
MOOTW	Military Operations Other Than War
MOPP	Mission-Oriented Protective Posture
MOU	Memorandum of Understanding
MOX	Mixed-Oxide Fuels
MP	Military Police
MP	Military Programs
MP	Management Profiler
MP	Management Profiler
MPC	Main Press Center
MPD	Maximum Potential Destruction
MPE	Maximum Permissible Exposure
MPEG	Motion Picture Expert Group
MPH	Miles Per Hour
MPPP	Mortgage Portfolio Protection Program
MPS	Mission Planning System
MPU	Mobile Power Unit
MPU	Microprocessor Unit
MRA	Mortgage and Rental Assistance
MRC	Major Regional Contingency
MRE	Meals, Ready to Eat
MRF	Medium Range Forecast
MR/hr	Milliroentgens per Hour
MRI	Mean Recurrence Interval
MRIC	Mobile Reconstruction Information Center

MRMC	Medical Research and Materiel Command
MRP	Minimal Repair Program
MRRS	MERS Response Reporting System
MRV	Mobile Response Van [or Vehicle]
MRV	Multi-Radio Van [or Vehicle]
MS	Mobilization Station
MS	MicroSoft
M/S	Meters per second
MSA	Mutual Support Agreement
MSA	Metropolitan Statistical Area
MSC	Major Subordinate Command (USACE Division)
MSCA	Military Support to Civil Authorities
MSCD	Military Support to Civil Defense
MSCLEA	Military Support to Civilian Law Enforcement Agencies
MSDS	Material Safety Data Sheet
MSE	MERS Support Element
MSEL	Master Scenario Events List
MSL	Mean Sea Level
MSLO	Military Support Liaison Office
MSO	Military Support Officer
MSO	Marine Safety Office
MSPB	Merit Systems Protection Board
MSR	Main Supply Route
MSRC	Marine Spill Response Corporation
MST	Mountain Standard Time (GMT -7)
MST	METRO Strike Team
MST	Management Support Team (formerly MSU)
MSU	Management Support Unit (see MST)
MSU	Medical Support Unit
MT	Mitigation
MT	Megaton
MTDA	Mobilization Table of Distribution and Allowances
MTF	Medical Treatment Facility
MTMC	Military Traffic Management Command
MTOE	Modified Table of Organization and Equipment
MUF	Materials Unaccounted For
MUSE	Mobile Utilities Support Equipment
MVD	Mississippi Valley Division, Vicksburg, MS
MVGP	Mission, Vision, and Guiding Principles
MVK	Vicksburg, MS District
MVM	Memphis, TN District
MVN	New Orleans, LA District
MVP	St. Paul, MN District
MVR	Rock Island, IL District
MVS	Saint Louis, MO District
MW	Microwave
MW	Mt Weather
MWEAC	Mt Weather Emergency Assistance Center

MWFRS	Mt Weather Emergency Assistance Center
MWS	Marine Weather Statement
M-ZONE	High Mudflow Hazard Area
N/A	Not Applicable
N/A	Not Affected
NAB	Baltimore, MD District
NAC	National Agency Check
NAC/AGEL	National Advisory Committee on Acute Exposure Guidelines Levels (for Chemical Substances)
NACI	National Agency Check with Inquiries
NACO	National Association of Counties
NACS	NEMIS Access Control System
NAD	North Atlantic Division, New York, NY
NAE	New England District (formerly New England Division), Waltham, MA
NAFAX	National Facsimile Network
NAHB	National Association of Home Builders
NAII	National Association of Independent Insurers
NAIIA	National Association of Independent Insurance Adjusters
NAMRI	Naval Medical Research Institute
NAN	New York, NY District
NAO	Norfolk, VA District
NAOC	National Airborne Operations Center
NAOS	North American Atmospheric Observing System
NAP	Philadelphia, PA District
NAP	Non-Insured Crop Disaster Assistance Program
NAPI	National Arson Prevention Initiative
NARA	National Archives and Records Administration
NARCL	Nuclear Accident Response Capabilities Listing
NARP	Nuclear Accident Response Plan (or Procedures)
NARSAP	National Advanced Remote Sensing Applications Program
NARTC	National Advanced Resource Technology Center
NAS	National Academy of Sciences
NASA	National Aeronautics and Space Administration
NASAR	National Association for Search and Rescue
NASCDD	National Association of State Civil Defense Directors
NASEMSD	National Association of State Emergency Medical Services Directors
NASFM	National Association of State Fire Marshals
NASNA	National Association of 9-1-1 Administrators
NATO	North Atlantic Treaty Organization
NAU	Europe District
NAVAID	Navigational Aid
NAVFAC	Naval Facilities Command
NAVFACENGCOM	Naval Facilities Engineering Command
NAWAS	National Warning System
NAWAS/BCC	National Warning System Bridge and Conference Controller
NBC	Nuclear, Biological, and Chemical

NCA	National Command Authorities
NCAR	National Center for Atmospheric Research
NCB	Buffalo, NY District
NC&B	Nuclear, Chemical and Biological
NCC	National Coordinating Center (for Telecommunications) (FEMA)
NCCC	National Council of the Churches of Christ
NCCEM	National Coordinating Council on Emergency Management (obsolete; replaced by IAEM)
NCCG	National Civilian Community Group
NCEP	National Centers for Environmental Prediction
NCGIA	National Center for Geographic Information and Analysis
NCIC	National Crime Information Center
NCO	Non Commissioned Officer
NCP	National Oil and Hazardous Substances Pollution Contingency Plan (aka National Contingency Plan)
NCPI	National Committee on Property Insurance
NCR	National Capital Region
NCRPM	National Council on Radiation Protection and Measurements
NCS	National Communications System (FEMA)
NCS	Net Control System
NCSA	National Center for Supercomputing Applications
NCS/DCA-OC	National Communications System/Defense Communications Agency-Operations Center
NCSP	National Communications Support Plan
NCSRM	National Communications System Regional Manager
NCUA	National Credit Union Administration
NDA	National Defense Area
NDA	Non-Disclosure Agreement
NDAA	National Disaster Assistance Ace
NDEA	National Defense Emergency Authorization
NDER	National Defense Executive Reserve
NDMC	National Drought Mitigation Center
NDMOC	National Disaster Medical Operations Center
NDMS	National Disaster Medical System
NDMSOSC	National Disaster Medical System Operations Support Center
NDPO	National Domestic Preparedness Office
NDS	National Defense Stockpile
NDS	Nuclear Detection System
NE	Northeast
NE	New England
NEC	National Earthquake Center
NECC	National Emergency Coordination Center (FEMA) (obsolete; see FOC)
NECN	National Emergency Communications Network
NEHRP	National Earthquake Hazards Reduction Program
NEEP	National Earthquake Education Program
NEET	National Exercise Evaluation Team
NEFSMA	New England Floodplain and Stormwater Managers Association
NEHA	National Environmental Health Association

NEI	Nuclear Energy Institute
NEIC	National Earthquake Information Center
NEIS	National Earthquake Information Service
NEMA	National Emergency Management Association
NEMIS	National Emergency Management Information System
NEMT	National Emergency Management team
NEO	Noncombatant Evacuation Operation
NEO	Near-Earth Orbit
NEOB	New Executive Office Building
NEPA	National Environmental Policy Act
NEPP	National Emergency Preparedness Program (Appropriation 96X3123)
NERC	North American Electric Reliability Council
NESN	Necessary Expenses and Serious Needs
NEST	Nuclear Emergency Search Team
NET	No Earlier Than
NETAC	National Environmental Technology Application Center
NETAP	National Earthquake Technical Assistance Program
NETC	National Emergency Training Center
NEXRAD	Next Generation Weather Radar
NEXUS	Next Generation Weather System
NFA	National Fire Academy
NFCD	National Finance Center Database
NFDA	National Funeral Directors Association
NFDC	National Fire Data Center
NFI	National Flood Insurance
NFIC	National Fire Information Council
NFIF	National Flood Insurance Fund
NFIP	National Flood Insurance Program
NFIRA	National Flood Insurance Reform Act
NFIRS	National Fire Incident Reporting System
NFMA	National Forest Management Act
NFP	Not-for-Profit
NFPA	National Fire Protection Association
NFPCA	National Fire Prevention and Control Administration
NFS	National Forest System
NFSLO	National Fire Suppression Liaison Officer
NG	National Guard
NGLO	National Guard Liaison Officer
NGB	National Guard Bureau
NGA	National Governor's Association
NGB	National Guard Bureau
NGB	National Governing Body
NGDC	National Geophysical Data Center
NGLO	National Guard Liaison Officer
NGM	Nested Grid Model
NGO	Non Governmental Organization
NGVD	National Geodetic Vertical Datum
NHC	National Hurricane Center

NHPA	National Historic Preservation Act
NHTSA	National Highway traffic Safety Administration
NHV	Natural Hazard Vulnerability
NI	No Insurance
NIBS	National Institute of Building Sciences
NIC	National Instrumentation Center
NICC	National Interagency Coordination Center
NICI	National Interagency Counterdrug Institute
NID	National Inventory of Dams
NIDF	National Insurance Development Fund
NIEHS	National Institute of Environmental Health Services
NIEOC	National Interagency Emergency Operations Center
NIER	National Industrial Equipment Reserve
NIF	Non-Industrial Facility
NIFCC	National Interagency Fire Coordination Center, U.S. Forest Service
NII	National Information Infrastructure
NIIMS	National Interagency Incident Management System
NIMA	National Imagery and Mapping Agency
NIMBY	Not In My Backyard
NIMG	National Interagency Mobilization Guide
NIMH	National Institutes of Mental Health
NIMS	National Interagency Management System
NIMTO	Not In My Term of Office
NIOSH	National Institute of Occupational Safety and Health
NIPC	National Infrastructure Protection Center
NISE	National Intelligence support Element
NIST	National Institute for Science and Technology
NIUSR	National Institute for Urban Search and Rescue
NLC	National Location Code
NLC	National League of Cities
NLD	Nunn-Lugar-Domenici
NLECC	National Law Enforcement Coordination Center
NLETS	National Law Enforcement Telecommunications System
NLRA	National Labor Relations Authority
NLS	National Language Standards
NLT	Not Later Than
NM	Nautical Mile
NMAB	National Materials Advisory Board
NMC	National Meterological Center
NMCC	National Military Command Center
NMFS	National Marine Fisheries Service
NMI	No Middle Initial
NMJIC	National Military Joint Intelligence Center
NMRI	Naval Medical Research Institute
NMRT	National Medical Readiness Team
NNEC	National Network Emergency Center
NNOC	National Network Operations Center
NNSA	National Nuclear Security Administration

NO	National Office
NOAA	National Oceanic and Atmospheric Administration
NOC	Network Operations Center
NOC	Navy Operations Center
NOC	National Operations Center
NOC	Negotiations Operations Center
NOC	National Olympic Committee
NOFA	Notice of Funds Availability
NOGA	Notice of Grant Award
NOI	Notice of Interest
NOK	Next-of-Kin
NOPR	Notice of Proposed Rulemaking
NORAD	North American Aerospace Defense Command
NOS	Not Otherwise Specified
NOTAM	Notice To Airmen
NOUE	Notice of Unusual Event
NP	National Preparedness
NPC	National Paralympic Committee
NPDP	National Performance of Dams Program
NPFC	National Pollution Funds Center
NPIC	National Photographic Interpretation Center (obsolete; see NIMA)
NPMA	National Property Management Association
NPMOC	Naval Pacific Meterology and Oceanography Center
NPOESS	National Polar-Orbiting Operational Environmental Satellite
NPP	Nuclear Power Plant
NPR	National Partnership for Reinventing Government (formerly National Performance Review)
NPRM	Notice of Proposed Rulemaking
NPS	National Park Service
NPSC	National Processing Service Center
NRAT	Nuclear Radiological Advisory Team
NRC	Nuclear Regulatory Commission
NRC	National Response Center
NRC	National Research Council
NRCC	Northern Regional Coordination Center
NRCOC	Nuclear Regulatory Commission Operations Center
NRCS	National Resources Conservation Service
NRCSDC	Natural Resources Conservation Service District Conservationist
NRCSSC	Natural Resources Conservation Service State Conservationist
NRIMC	National Resources Information and Mapping Center
NRIS	National Resource Information System
NRO	National Reconnaissance Office
NRRDC	Natural Resource Research & Development Center (at WES)
NRCS	National Resources Conservation Service
NRS	National Response System
NRT	National Response Team
NRT	Near Real Time
NSA	National Security Agency

NSC	National Security Council
NSD	National Security Directive
NSD	Named Storm Day
NSDD	National Security Decision Directive
NSDI	National Spatial Data Infrastructure
NSEC	National Security Emergency Coordination
NSEP	National Security Emergency Preparedness
NSF	National Strike Force
NSF	National Science Foundation
NSFCC	National Strike Force Coordination Center
NSGIC	National States Geographic Information Council
NSI	National Security Information
NSI	Nuclear Surety Inspection
NSLRSDA	National Satellite Land Remote Sensing Data Archive
NSSFC	National Severe Storms Forecast Center
NSMP	National Strong-Motion Program
NSN	National Stock Number
NSSDA	National Standard for Spatial Data Accuracy
NSSE	National Security special Event
NSSL	National Severe Storms Laboratory
NTC	National Telecommunications Center
NTC	National Teleregistration Center
NTC	Net Tropical Cyclone Activity
NTC-MW	National Teleregistration Center at Mount Weather
NTE	Not To Exceed
NTIA	National Telecommunications and Information Administration
NTIS	National Technical Information Service
NTM	National Technical Means
NTMR	National Technical Means of Reconnaissance
NTMS	National Telecommunications Management Sturcture
NTS	National Traffic System
NTSB	National Transportation Safety Board
NTSC	National Telecommunications Standards Committee
NTSP	National Telecommunications Support Plan
NU	Name Unknown
NUCFLASH	Accidental, unauthorized, or unexplained nuclear detonation
NUDET	Nuclear Detonation
NVOAD	National Voluntary Organizations Active in Disaster
NWC	National Warning Center
NWCG	National Wildfire Coordinating Group
NWD	Northwestern Division, Portland, OR
NWD-MR	Northwestern Division, Missouri River Region, Omaha, Nebraska
NWD-NP	Northwestern Division, North Pacific Region, Portland, OR
NWK	Kansas City, MO District
NWO	Omaha, NE District
NWP	Portland, OR District
NWR	National Weather Radio
NWS	National Weather Service (NOAA)

NWS	Seattle, WA District (USACE)
NWSFO	National Weather Service Forecast Office
NWW	Walla Walla, WA District
NWWS	National Weather Wire Service
O&M	Operations & Maintenance
O&M, Gen	Operations and Maintenance, General (Appropriation 96X3123)
OA	Office Automation
OA	Over and Above
OAA	Older Americans Act
OADR	Originating Agency Determination Required
OAFME	Office of the Armed Forces Medical Examiner
OAR	Office of Oceanic and Atmospheric Research
OAS	Office of Administrative Support
OAS	Organization of American States
OASH	Office of the Assistant Secretary for Health, Department of Health and Human Services
OASH/OEP	Office of the Assistant Secretary for Health/Office of Emergency Preparedness
OB	Official Business
OBE	Overcome (or Overtaken) By Events
OBS	Observation(s)
OC	Operations Center
OC	Office of Counsel
OCA	Original Classification Authority
OCC	Office of the Comptroller of the Currency
OCC	Olympic Coordination Center
OCD	Office of Community Development
OCHAMPUS	Office of Civilian Health and Medical Program of the Uniformed Services, Department of Defense
OCLUS	Outside the Continental Limits of the United States
OCN	Optimal Climate Normals
OCONUS	Outside the Continental U.S. (Contiguous 48 States)
OCOG	Organizing Committee for the Olympic Games
OCR	Office of Collateral Responsibility
OCR	Optical Character Reader
OCS	Outer Continental Shelf
OCZM	Office of Coastal Zone Management
ODBC	Open Database Connectivity
ODCEM	Oklahoma Department of Civil Emergency Management
OE	Operating Expenses
OEMP	Office of Emergency Medical Preparedness
OEP	Office of Emergency Preparedness, U.S. Public Health Service
OEP	Occupant Emergency Plan
OES	Office of Emergency Services
OET	Office of Emergency Transportation (DOT)
OFA	Other Federal Agency(ies)

OFA	Office of Family Assistance
OFDA	Office of U.S. Foreign Disaster Assistance
OFF	Offshore Forecast
OFM	Office of Financial Management
OFMA	Oklahoma Floodplain Management Association
OGAT	Official Government Acceptance Test
OGC	Office of the General Counsel
OGE	Office of Government Ethics
OHRM	Office of Human Resources Management
OIC	Officer in Charge
OIC	Olympic Intelligence Center
OIG	Office of the Inspector General
OJCS	Office of the Joint Chiefs of Staff, Department of Defense
OJT	On-the-Job Training
OLE	Object Linking and Embedding
O&M	Operations and Maintenance.
OMA	Operations and Maintenance, Army
OMB	Office of Management and Budget
OMNCS	Office of the Manager, National Communications System
OMTPE	Office of Mission to Planet Earth
OOTW	Operations Other Than War
OPA	Oil Pollution Act
OPAC	On-Line Payments and Collection
OPCOM	Operational Command
OPCON	Operational Control
OPERIOD	Operational Period
OPHS	Office of Public Health and Science
OPLAN	Operations Plan
OPM	Office of Personnel Management
OPR	Office of Primary Responsibility
OPREP	Operational Report
OPS	Operational Planning System
OPS	Operations
OPSEC	Operations Security
OPT	Operations and Planning Team
OPUS	Olympic Properties of the United States
OPW	Operational Planning Worksheet
ORCA	Operational Readiness Capability Assessment
ORD	Office of the Regional Director
ORM	Other Regulated materials
OS	Operations Support
OS	Operating System
Os	Osmium (symbol for)
OSC	Operations Support Center
OSC	On-Scene Coordinator (or Commander)
OSD	Operational Systems Document
OSD	Office of the Secretary of Defense
OSD	Operations Support Division

OSHA	Occupational Safety and Health Administration
OSINT	Open-source Intelligence
OSLTF	Oil Spill Liability Trust Fund
OST	Office of the Secretary for Transportation
OSTLF	Oil Spill Liability Trust Fund
OSTP	Office of Science and Technology Policy
OTAR	Over-The-Air Rekeying
OT&E	Operational Test and Evaluation
OTRS	Official Time Reporting System
OTS	Office of Thrift Supervision
OVC	Office for Victims of Crime
OVI	Office of Volunteerism Initiatives

P2	Prime Power (249th Engineer Battalion)
P&A	Price and Availability
PA	Public Assistance
PA	Public Affairs
PA	Public Address
PA	Principal Advisor
PA	Programmatic Agreement
PABX	Private Automatic Branch Exchange
PAC	Public Assistance Coordinator
PAC	Political Action Committee
PAC	Primary Agency Committee
PACAREA	Pacific Area
PACC	Patient Airlift Control Center
PACOM	Pacific Command
PAG	Protective-Action Guide
PAH	Polynuclear Aromatic Hydrocarbons
PAHO	Pan American Health Organization
PA-NST	Public Affairs-National Support Team
PAO	Public Affairs Office(r)
PAO	Public Assistance Officer
PA-PRT	Public Affairs-Planning Response Team
PAR	Protective Action Recommendation
PAR	Public Administration Review
PAR	Protective Action Recommendation
PASS	Partners Assuring Safer Schools
PAT	Process Action Team
PAX	Passengers
PAZ	Protective Action Zone
PB	Pyridostigmine bromide (symbol for)
PBA	Pine Bluff Arsenal
PBS	Public Building Service (GSA)
PBS	Public Broadcasting System
PBSIS	Public Building Service Information System
PBX	Phone(or Private)Bank Exchange

PC	Personal Computer
PCA	Project Cooperative Agreement
PCCIP	President's Commission on Critical Infrastructure Protection
PCF	Patient Care Form
PCS	Permanent Change of Station
PCS	Personal Communications Service
PCTARE	Personal Computer Time and Attendance Remote Entry
PD	Planning Division
PD	Policy Directive
PD	Position Description
PD	Presidential Decision (Directive)
PD	Paid
PD	Per Diem
PD	Police Department
PDA	Preliminary Damage Assessment
PDA	Predicted Drift Angle
PDASH	Principal Deputy Assistant Secretary for Health
PDC	Personnel Data Card
PDC	Pacific Disaster Center
PDD	Presidential Decision Directive
PDSI	Palmer Drought Severity Index
PDT	Pacific Daylight Time (GMT - 7)
PEAD	Presidential Emergency Action Document
PEDS	Portable Emergency Data System
PEER	Pacific Earthquake Engineering Research Center
PEL	Permissible Exposure Limit
PEMA	Pennsylvania Emergency Management Agency
PEOC	President's Emergency Operations Center
PEP	Primary Entry Point
PEP	Professional Excellence Program
PEPAC	Primary Entry Point Advisory Committee
PFA	Procurement Funding Authority
PFT	Permanent Full-Time
PH	Public Health
PHS	U.S. Public Health Service, Department of Health and Human Services
PI	Project Impact
PIAT	Public Information Assist Team
PIF	Policies In Force
PIN	Personal Identification Number
PINS	Personnel In Need of Supervision
PIO	Public Information Officer
PIR	Project Information Report
PIREP	Pilot Weather Report
Pkg	Package
PKI	Public Key Infrastructure
PL	Public Law (also abbreviated as P.L.)
PL 99 (PL 84-99)	Public Law 84-99 [Flood Control and Coastal Emergencies, (33 U.S.C. 701n) (69 STAT. 186)]

PL 288 (PL 93-288)	Public Law 93-288 [Obsolete term; current name is the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5121 et seq.)(88 STAT. 143)]
PLC	Pacific Logistics Center
PLSS	Public Land Survey System
PM	Project Monitor
PM	Post Meridiem
PM	Postmaster
PMCS	Preventive Maintenance Checks and Services
PMO	Preventive Management Officer
PMP	Performance Monitoring Plan
PMR	Patient Movement Request
PMS	Payments Management System
PMS	Program Management System
PN	Part Number
PN	Project Number
PNE	Peaceful Nuclear Explosion
PNP	Private Non-Profit
PNV	Present Net Value
PO	Project Officer
PO	Personnel Office
PO	Post Office
PO	Purchase Order
PO	Purchase Officer
Po	Polonium (symbol for)
POA	Alaska District (USACE)
POA	Point of Arrival
POA	Port of Anchorage (Alaska)
POC	Point of Contact
POD	Point of Departure (FEMA)
POD	Pacific Ocean Division, Honolulu, HI (USACE)
POE	Point of Entry
POES	Polar Orbiting Environmental Satellite
POF	Far East District, Korea
POH	Honolulu District, HI
POI	Plan of Instruction
POI	Program of Instruction
POJ	Japan District
POL	Petroleum, Oils, and Lubricants
POLREP	Pollution Report
POMCUS	Pre-positioned Oversead Material Configured to Sets
POTS	Plain Old Telephone Service
POTUS	President of the United States
POV	Privately Owned Vehicle
PP	Pay Period
PP	Personal Property
PPA	Performance Partnership Agreement
PPBS	Planning, Programming, and Budgeting System

PPCBP	Prickly Pear Cactus Burning Program
PPE	Personal Protective Equipment
PPE	Pay Period Ending
PPI	Preliminary Placement Interview
PPM	Parts Per Million
PPM	Printer/Plotter Module
PPM	Program Performance Monitoring
PPMD	Program and Project Management Division
PPP	Power Projection Platform
PPR	Prior Permission Required
PR	Public Relations
PRA	Paperwork Reduction Act
PRA	Patient Reporting Activity
PRB	Procurement Review Board
PRC	Presidential Reserve Call-up
PRER	Peacetime Radiological Emergency Response
PRIME POWER	USACE Engineer Battalion
PROJECT IMPACT	FEMA-state mitigation initiative to make communities disaster resistant
PRP	Personnel Reliability Program
PRP	Preferred risk Policy
PRS	Primary Receiving Site
PRT	Planning and Response Team
PS	Program Support
PS	Chloropicrin (symbol for)
PSA	Public Service Announcement
PSA	Patient Staging Area
PSB	Planning Support Branch
PSI	Pounds (of pressure) per Square Inch
PSMA	Pre-Scripted Mission Assignment
PSN	Public Switched Network
PSR	Personal Service Radio
PSR	Power Soft Report
PSRC	Presidential Selective Reserve Call-up
PST	Pacific Standard Time (GMT -8)
PSWN	Public-Safety Wireless Network
PT	Part-Time
PT&E	Preparedness, Training, and Exercises
PTSD	Post-Traumatic Stress Disorder
PTWC	Pacific Tsunami Warning Center
Pu	Plutonium (symbol for)
PUD	Planned Unit Development
PUP	Principal User Process
PUREX	Plutonium Uranium Extraction
PVCS	Polyton Version Configuration System
PVO	Private Voluntary Organization
PW	Project Worksheet
PW&E	Public Works and Engineering
PWR	Power

PWR	Pressurized Water Reactor
PZ	Precautionary Zone
Q	Sesqui-mustard (symbol for)
Q3	Quality Level 3; refers to a digital version of a Flood Insurance Rate Map (note: Q3 Data refers to the flood zone information represented on the map)
QA	Quality Assurance
QA	Question and Answer
QAPP	Quality Assurance Project Plan
QBC	Query By Example
QBO	Quasi-Biennial Oscillation
QC	Quality Control
QD	Quantity/Distance
QRC	Quick Reaction Checklist
QRS	Quick Response System
QRT	Quick Response Team
QSI	Quality Step Increase
QTF	Quantitative Temperature Forecast
QTY	Quantity
R&R	Response and Recovery
R&R	Rest and Recuperation
RA	Regional Administrator
RAA	Request for Allocation Advice
RAA	Radiological Accident Assessment
RAAW	Request for Allocation Advice Worksheet
RAC	Reception and Care
RAC	Regional Assistance Committee
RACES	Radio Amateur Civil Emergency Services
RAD	Radiation-Absorbed Dose
RADCON	Radiological Control (Team)
RADEF	Radiological Defense
RADID	Radar Information Display
RAID	Rapid Assessment and Initial Detection
RAID	Redundant Array of Independent Disks
RAM	Random-Access Memory
RAM	Radiological Material
RAMOS	Remote Automated Meteorological Observing System
RAMT	Radiological Assessment Medical Team
RAMTAR	Radiological Material Transportation Accident Response
RAP	Radiological Assistance Program
RAP	Regional Action Plan
RAP	Remedial Action Project
RAPID	Recovery Assistance Programs Information and Delivery
RAR	Regional Analysis and Recommendation

RARE	Roadless Area Review and Evaluation.
RART	Regional Assessment and Response Team
RASS	Radio Acoustic Sounding System
RAT	Radiological Assistance Team
RAWG	Rapid Assessment Work Group
RAWN	Radar Wind Sounding
RAWS	Remote Automated Weather Station
RBAC	Role-Based Access Control
RBCDS	Rural Business and Cooperative Service
RBCS	Rural Business Cooperative Service
RC	Reserve Component
RC	Red Cross (also ARC)
RC	Recovery Center
RCA	Radiological Control Area
RCA	Riparian Conservation Area
RCA	Rural Community Assistance
RCAC	Red Cross Assistance Center
RCBAP	Residential Condominium Building Association Policy
RCC	Rescue Coordination Center
RCC	Regional Climate Center
RCCM	Regional Contingency Construction Management
RCDCB	Regional Civil Defense
RCM	Radar-Coded Message
RCO	Resource Coordinating Officer
RCP	Regional Oil and Hazardous Substances Pollution Contingency Plan
RCRA	Resource Conservation and Recovery Act
RCS	Reports Control System
R&D	Research and Development
RD	Regional Director
RD	Restricted Data
RDB	Resource Database
RDBMS	Relational Database Management System
RDC	Regional Disaster Coordinator
RDD	Radiological Dispersion Device
RDERS	Rapid Deployment Emergency Response System
RDO	Regional Disaster Office
RDO	Radiological Defense Officer
RDO	Regular Day Off
RDOS	Real-Time Disk Operating System
RDT	Rapid Development Team
RE	Real Estate
REA	Rural Electrification Administration
REACT	Radio Emergency Associated Communication Team
REAC/TS	Radiological (or Radiation) Emergency Assistance Center – Training Site
REA	Rural Electrification Administration
REC	Regional Emergency Coordinator

RECA	Residual Capability Assessment
RECAT	Residual Capability Assessment
RECC	Regional Emergency Communications Coordinator
RECD	Rural Economic and Community Development
RECON	Reconnaissance
RECON	Reconsideration
RECP	Regional Emergency Communications Plan
REDI	Regional Emergency Disaster Inventory
REM	Regional Emergency Manager
REM	Roentgen Equivalent Mean
REMT	Regional Emergency Management Team
RENC	Regional Emergency Notification Center
REO	Regional Environmental Officer
REOC	Regional Emergency Operations Center
REP	Regional Evacuation Point
REP	Radiological Emergency Preparedness
REP	Regional Evacuation Point
REPLO	Regional Emergency Preparedness Liaison Officer
RERO	Radiological Emergency Response Operations
RERP	Radiological Emergency Response Plan
RERT	Radiological Emergency Response Team
RESDRO	Reservist in Support of Disaster Relief Operations
RET	Regional Emergency Transportation
RETCO	Regional Emergency Transportation Coordinator
RETREP	Regional Emergency Transportation Representative
REX	Readiness Exercise
RF	Radio Frequency
RFA	Request for Federal Assistance
RFA	Request for Federal Resource Assistance Form
RFC	River Forecast Center
RFI	Request For Information
RFI	Radio Frequency Interference
RFO	Regional Field Office
RFO	Ready For Occupancy
RFP	Request for Proposal
RFQ	Request for Quote
RFS	Request for Service
RHA	Regional Health Administrator (HHS)
RHA	Rural Housing Agency
RHS	Rural Housing Service
RI	Registration Intake
RIAT	Rapid Impact Assessment Team
RIC	Recovery Information Center
RICT	Regional Incident Coordination Team
RIF	Reduction-in-force
RIP	Rehabilitation and Inspection Program
RISC	Regional Interagency Steering Committee

RM	Resource Management
RM	Records Management
RMAC	Readiness Mission Analyses Conference
RMAP	Readiness Mission Analyses Program
RMEC	Regional Military Emergency Coordinators
RMI	Republic of the Marshall Islands
RMNCS	Regional Manager National Communications System
RMSE	Root Mean Square Error
RMTN	Regional Meteorological Telecommunications Network
RNA	Rapid Needs Assessment
RNMCB	Reserve Naval Mobile Construction Battalion
RO	Response Organization
RO	Regional
RO	Receive-Only
RO	Read Only
RO	Responsible Officer
RO	Reports Officer
RO	Radiological Officer
ROC	Regional Operations Center
ROD	Record of Decision
ROE	Right of Entry
ROM	Read-Only Memory
RON	Remain Overnight
ROPS	Radiological Operations
RORO	Roll On/Roll-Off
ROST	Regional Operations Support Team
ROW	Right of Way
ROWPU	Reverse Osmosis Water Purification Unit
RP	Real Property
RPA	Regional Planning Agent
RPA	Resources Planning Act
RPA	Request for Public Assistance
RPA	Request for Public Assistance
RPC	Regional Preparedness Committee
RPG	Response Planning Group
RPG	Response Planning Guide
RPM	Revolutions Per Minute
RPOC	Regional Point of Contact
RPS	Radiological Protection System
RR	Response & Recovery (also R&R)
RR	Railroad
RR	Rural Route
RRF	Regional Response Force
RRIS	Rapid Response Information System
RR-OP	Operations and Planning Division, Response and Recovery Directorate
RR-OP-AA	Assessment and Analysis Branch, Operations and Planning Division, Response and Recovery
RRP	Regional Response Plan

RRT	Regional Response Team
RRWG	Reward and Recognition Working Group
RS	Remote Sensing
RS	Response Support
RS	Regional Summary
RSC	Readiness Support Center
RSC	Remote Sensing Coordinator
RSD	Remote Sensing Data -
RS/GIS	Remote Sensing/Geographic Information System
RSI	Repetitive Stress Injury
RSP	Regular Services Program
RSPA	Research and Special Programs Administration
RSSC	Remote Sensing Support Coordinator
RST	Regional Support Team
RST	Reference Standard Time
RST	Remote Sensing Team
RSTA	Reconnaissance, Surveillance, and Target Acquisitions
RSVP	Retired Senior Volunteer Program
RT	Reconnaissance Team (obsolete; see RST)
RTF	Response Task Force
RTF	Rich Text Format
RTF-E	Response Task Force - East
RTM	Regional Training Manager
RUS	Rural Utilities Service(s)
RVT	Remote Video Terminal
RWA	Reimbursable Work Authorization
RWCM	Regional Wartime Construction Management
RWP	Regional Work Plan
RWS	Revised Work Schedule

S	Staging Area
SA	Salvation Army
SA	Special Agent
SA	Arsine (symbol for)
SAAM	Special Airlift Assignment Mission
SAC	Charleston, SC District
SAC	Special Agent in Charge
SAD	South Atlantic Division, Atlanta, GA
SAD	Southern Area District
SADBU	Small and Disadvantaged Business Utilization
SAE	Site Area Emergency
SAIC	Science Applications International Corporation
SAJ	Jacksonville, FL District
SALEMDUG	State and Local Emergency Managers Data Users Group
SAM	Mobile, AL District
SAMHSA	Substance Abuse and Mental Health Services Administration
SAMP	Special Area Management Plan

SAO	State Approving Official
SAP	State Administrative Plan
SAP	Special Access Program
SAR	Support Agency Representatives
SAR	Special Access Required
SAR	Search and Rescue
SAR	Synthetic Aperture Radar
SARA	Superfund Amendments and Reauthorization Act
SARDA	State Airborne Reconnaissance for Damage Assessment
SARSAT	Search and Rescue Satellite Aided Tracking
SAS	Savannah, GA District
SAS	Secondary Antenna System
SAST	Scientific Assessment and Strategy Team
SATCOM	Satellite Communications
SATO	Scheduled Airline Ticket Office
SAW	Wilmington, NC District
SBA	Small Business Administration
SBC	Southern Baptist Convention
SBCCOM	Soldier and Biological Chemical Command
SBCCI	Southern Building Code Congress International
SBI	Special Background Investigation
SBOL	Straight Bill-Of-Lading
SBU	Sensitive But Unclassified
SC	Section Chief
SCAT	Security Control of Air Traffic
SCATANA	Security Control of Air Traffic and Air Aids
SCBA	Self-Contained Breathing Apparatus
SCD	Service Computation Date
SCEC	Southern California Earthquake Center
SCG	Security Classification Guide
SCI	Sensitive Compartmented Information
SCIC	Software Control Integration Center
SCIF	Sensitive Compartmented Information Facility.
SCM	Survivable Crisis Management
SCO	State Coordinating Officer
SCR	Software (or System) Change Request
SCS	Soils Conservation Service
SCSN	Southern California Seismic Network
SCSEP	Senior Citizen Service Employment Program
SCUBA	Self-Contained Breathing Apparatus
SDA	Seventh Day Adventist
SDATE	Specific Disaster Assistance Temporary Employee
SDP	Secretarial Development Program
SDP	Service Delivery Point
SDTS	Spatial Data Transfer Standard(s)
SDWIS	Safe Drinking Water Information System
S&E	Salaries and Expenses
SEB	Staphylococcus Enterotoxin Type B

SEC	Securities and Exchange Commission
SECC	State Emergency Coordination Center
SECARMY	Secretary of the Army
SECDEF	Secretary of Defense
SECLAN	Secure Local Area Network
SEI	Software Engineering Institute
SELS	Severe Local Storms
SEMA	State Emergency Management Agency
SEMO	State Emergency Management Officer
SEMS	Standardized Emergency Management System
SEOC	State Emergency Operations Center
SEPLO	State Emergency Preparedness Liaison Officer
SERC	State Emergency Response Commission
SERF	Standard Exercise Report Form
SERL	Special Events Readiness Level (see below)
SERL I	Unique event requiring full support of US Government
SERL II	Primary event requiring local resource augmentation and limited predeployment of US Government Assets
SERL III	Secondary event requiring limited local resource augmentation and limited predeployment of US Government assets
SERL IV	Minor event generally requiring no US Government asset support
SERT	State Emergency Response Team
SES	Senior Executive Service
SEUS	Snow Estimation and Updating System
SF	Standard Form
SF	Special Facility
SFAR	Special Federal Aviation Regulation
SFHA	Special Flood Hazard Area
SFIP	Standard Flood Insurance Policy
SFO	Senior FEMA Official (for a radiological emergency)
SFO	State Field Office(r)
SFP	Supplementary Feeding Program
SFSO	Senior Financial Services Officer
SG	Surgeon General
SHF	Super High Frequency (700 MHz-4000 MHz (4.0 Ghz))
SHMO	State Hurricane Mitigation Office(r)
SHMO	State Hazard Mitigation Office(r)
SHMP	State Hazard Mitigation Program
SHPO	State Historic Preservation Office
SICG	Senior Interage Coordination Group
SID	Station Identifier
SIED	Special Improvised Explosive Device
SIES	(Office of) Strategic Industries and Economic Security (DOC)
SIGINT	Signals Intelligence.
SIGMET	Significant Meteorological Information
SIOC	Strategic Information and Operations Center
SIOP	Single Integrated Operations Plan
SIP	Shelter-In-Place

SITREP	Situation Report
SITROOM	Situation Room
SITSTAT	Situation Status
S&L	State and Local
S&L	Savings and Loan
SLA	State and Local Assistance
SLAR	Side-Looking Airborne Radar
SLBM	Submarine-Launched Ballistic Missile
SLC	Subscriber Line Carrier
SLC	Salt Lake City
SLE	State and Local Exercise
SLE	Security and Law Enforcement
Sleeping Dragon	Term used to identify a barrier of protesters who have linked themselves to one another
SLEP	State and Local Exercise Program
SLG	State and Local Guide
SLOC	Salt Lake Organizing Committee (for the Olympic and Paralympic Games of 2002)
SLOSH	Sea, Lake and Overland Surges from Hurricanes
SLPA	Sea Level Pressure Anomaly
SLPS	State and Local Programs and Support Directorate, FEMA (obsolete)
SLUDGEM	Salivation, Lacrimation, Urination, Defecation, Gastric Distress, Emesis and Miosis
SM	Student Manual
SM	Shelter Management
SMAC	State Mapping Advisory Committee
SMC	Specialty Management Center
SMCC	System Management Control Center
SME	Subject-Matter Expert
SMI	Safety Management Institute
SMG	Specialty Management Group
SMHA	State Mental Health Agency
SMMA	Standard Mitigation Measures Agreement
SMSA	Standard Metropolitan Statistical Area
SMSD	State-Managed Small Disaster
SN	Serial Number
SNM	Special Nuclear Material
SO	Sheriff's Office
SOB	Souls On Board
SOC	State Operations Center
SOC	Special Operations Center
SOC	Statement of Concern
SOE	Summary of Expenses
SOF	Special Operations Forces
SOFA	Status Of Forces Agreement
SOG	Seat of Government
SOI	Southern Oscillation Index
SOLRAD	Solar Radiation

SOMS	State-owned Mobilization Station
SON	Statement of Need
SONET	Synchronous Optical Network
SONS	Spill of National Significance
SOP	Standard Operating Procedure
SOR	Statement of Requirement
SOSC	State On-Scene Coordinator
SOW	Statement of Work
SPA	Albuquerque, NM District
SPC	Storm Prediction Center
SPCA	Society for the Prevention of Cruelty to Animals
SPD	South Pacific Division, San Francisco, CA
SPDC	Small Business Development Center
SPG	Strategic Planning Guide
SPK	Sacramento, CA District
SPL	Los Angeles, CA District
SPLASH	Special Program to List the Amplitude of Surge from Hurricanes
SPN	San Francisco, CA District
SPOD	Seaport of Debarkation
SPOE	Seaport of Embarkation
SPOTREP	Spot Report
SPOT	Systeme Probatoire d'Observation de la Terre (French satellite system)
SPOT	Satellite Positioning and Tracking
SPR	Special Problems Report
SPRB	Senior Performance Review Board
SPRO	Spill Prevention Response Office (within ADEC)
SQL	Structured Query Language
Sr	Strontium (symbol for)
SRA	Safe Refuge Area
SRA	Society for Risk Analysis
SRF	Service Response Force
SRP	Standardized Response Plan
SRSC	Strategic Review Steering Committee
SSA	Social Security Administration
SSAN	Social Security Account Number
SSB	Single Sideband
SSBA	Single-Scope Background Investigation
SSC	Strategic Storage Center
SSC	Scientific Support Coordinator
SSHS	Saffir-Simpson Hurricane Scale
SSI	Supplemental Security Income
SSL	Secure Socket Layer(s)
SSN	Social Security Number
SSP	Species Srvival Plan
SSS	Small Structure Survey
SSSE	State Support Service Element
SST	Shelter Survey Technician
SST	Supersonic Transport

SST	Sea-Surface Temperature
SST	Sea-Surface Temperature
SST	Safe Secure Transport
STA	Special Temporary Authority
STAR	Studies, Training, Analysis, and Research
STARC	State Area Command
START	Superfund Technical Assessment and Response Team
STARTEAM	Specialized Target Area Registration Team
STARTEX	Start of exercise
State	Department of State
STATEX	Statutory Exclusion
STATREP	Status Report
STB	Surface Transportation Board
STC	Satellite Teleregistration Center
STC	State Coordinator
STCC	Standard Transportation Commodity Code
STEP	State Tribal Education Program
STO	Special Technical Operations
STOLS	System to Locate Survivors
STU	Satellite Transmission Unit
STU	Secure Telephone Unit
STU-III	Secure Telephone Unit-Third Generation
SUI	Sensitive Unclassified Information
SUM	Software User's Manual
SUMA	Supply Management
SUPSALV	Support Salvage (DoD)
Svc	Service
SVIS	Secure Video System
SVOS	Secure Voice System
SVS	Severe Weather Statement
SW	Soil and Water
SWAT	Special Weapons and Tactics
SWC	Severe Weather Center
SWD	South West Division, Dallas TX
SWF	Fort Worth, TX District
SWG	Galveston, TX District
SWIS	Satellite Weather Information System
SWL	Little Rock, AR District
SWP	State Warning Point
SWP	State Weekends Program
SWR	Standing Wave Ratio (used in radio transmission)
SWS	Solid Waste Services (Municipality of Anchorage refuse collection and disposal)
SWT	Tulsa, OK District
T&A	Time and Attendance
TA	Technical Assistance

TA	Temporary Authority
TA	Table of Allowances
TA	Travel Authorization
TA	Time and Attendance
TAC	Technical Assistance Contractor
TAC	Technical Advisory Committee
TACACS	Terminal Access Controller Access Control System
TADS	Threat Assessment Database System
TADS	Training Aids for Dam Safety
TAES	Tactical Aeromedical Evacuation System
TAFT	Test, Analyze, Fix and Test
TAG	The (State) Adjutant General
TAOS	The Arbiter of Storms
TAPS	Trans-Alaska Pipeline System
TARS	Tone-Alert Radios
TBA	To Be Announced
TBD	To Be Determined
T&C	Time & Cost
Tc	Tellurium (symbol for)
TCC	Telecommunications Center
TCD	Tropical Cyclone Discussion
TCO	Territorial Coordinating Officer
TCP	Telecommunications Priorities
TCS	Tactical Control System(s)
TDA	Table of Distribution and Allowances
TDD	Telecommunications Device for the Deaf
TDFM	Traffic Demand Forecast Model
TDO	Typhoon Duty Officer
TDS	Time, Distance, and Shielding
TDY	Temporary Duty
T&E	Threatened and Endangered
TEAM-CPR	Thermal, Etiological, Asphyxiation, Mechanical, Chemical, Psychological, and Radioactive
TEC	U.S. Army Topographic Engineering Center, Alexandria, VA
TED	Total Effective Dose
TEL	Transporter-Erector-Launcher
TELNET	Teleconference Network
TEMA	Tennessee Emergency Management Agency
TEMP	Temporary Employee
TEMP	Test and Evaluation Master Plan
TEU	Technical Escort Unit
TF	Task Force
TFCC	Task Force Control Center
TFL	Task Force Leader
TH	Temporary Housing
Th	Thorium (symbol for)
THA	Temporary Housing Assistance
THO	Temporary Housing Officer

THP	Temporary Housing Program
THREATCON	(Terrorist) Threat Condition
TIAS	Training Information Access System
TIFF	Tagged Image file format
TIMACS	Telecommunications Inventory Management and Control System
TIN	Taxpayer Identification Number
TIN	Triangular Irregular Network
TIROS	Television and Infrared Observation Satellite
TLC	Territorial Logistics Center
TLD	Thermoluminescent Dosimeter
TM	Trademark
TMARS	Team Management and Rostering System
TMC	Travel Management Center
TMS	Training Management System
TMS	Traffic Management Specialist
TMT	Training Management Team
TNC	Terminal Node Controller
TNG	Training
TNT	Trinitrotoluene
TOA	Transportation Operating Agency(ies)
TOA	Time of Arrival
TOC	Tactical Operations Center
TOC	Table Of Contents
TPC	Tropical Prediction Center
TPED	Tasking, Processing, Exploitation, and Disseminations
TPFDD	Time-Phased Force Deployment Data
TPFDL	Time Phased Force Deployment List
TPO	Technical Program(s) Officer
TR	Transportation Request
TRAC2ES	TRANSCOM's Regulating and Command and Control Evacuation System
TRACEM	Thermal, Radioactive, Asphyxiation, chemical, Etiological, and Mechanical
TREAS	Department of the Treasury
Treasury	Department of the Treasury
TRICS	Telephone-to-Radio Interface Communications System
TRIPS	Travel Reporting and Information Processing System
TRO	Transient Accommodations Only
TROPAN	Tropical Analysis Facsimile Network
TS	Top Secret
TS	Thunderstorm
TS	Tropical Storm
TSB	Training Support Brigade (DoD)
TSB	Technical Services Branch
TSCM	Technical Security Countermeasure
TSCO	Top Secret Control Officer
TSDR	Toxic Substance and Disease Registry
TSP	Telecommunications Service Priority
TSP	Thrift Savings Plan

TSR	Telecommunications Service Request
TSR	Teleregistration Service Representative
TSWG	Technical Support Working Group
TT	Travel Trailer
TTAD	Temporary Tours of Active Duty
TTT	Train-the-Trainer
TT&E	Training, Testing, and Exercising
TTX	Tabletop Exercise
TTY	Teletypewriter
TUAV	Tactical Unmanned Aerial Vehicle
TUTT	Tropical Upper Tropospheric Trough
TV	Television
TV	Thomasville, Georgia
TVA	Tennessee Valley Authority
TWCM	Theater Wartime Construction Management
TWD	Tropical Weather Discussion
TZ	Saxitoxin (symbol for)

U	Uranium (symbol for)
UA	Upper Air
UAV	Unmanned Aerial Vehicle
UAY	Unmanned Aerial Vehicle
UBC	Uniform Building Code
UC	Unemployment Compensation
UC	Unified Command
UCGIS	University Consortium for Geographic Information Science
UCP	Unified Command Plan
UCT	Unified Command Team
UCT	Coordinated Universal Time (GMT or Zulu time)
UEL	Upper Explosive Limit
UGC	Universal Generic Code
UHF	Ultra High Frequency (radio)
UHP	Utah Highway Patrol
UI	Unemployment Insurance
ULF	Ultra Low Frequency
ULN	Unit Line Number
ULP	Unfair Labor Practice
UMOC	Unified Medical Operations Center
UMP	Upward Mobility Program
UN	United Nation
UNCLAS	Unclassified
UNDRO	United Nations Disaster Relief Organization
UNHCR	United Nations High Commissioner for Refugees
UNP	Unmet Needs Program
UOC	USACE Operations Center
UOPSC	Utoh Olympic Public Safety Command
UPC	Universal Product Code

UPS	Uninterrupted Power Supply
UPS	United Postal Service
URA	Uniform Relocation Act
URGENT	Uniform Regional Guidance Employing National Teams
URISA	Urban and Regional Information Systems Association
URL	Uniform Resource Locator
U.S.	United States
US&R	Urban Search and Rescue
USA	United States of America
USA	United States Army
USACE	United States Army Corps of Engineers
USACOM	U.S. Atlantic Command
USAED	U.S. Army Engineer District/Division
USAF	United States Air Force
USAID	U.S. Agency for International Development
USAISC	U.S. Army Information System Command
USAMRICD	United States Army Medical Research Institute for Chemical Defense
USAMRIID	United States Army Medical Research Institute of Infectious Diseases
USAR	Urban Search and Rescue
USAR	United States Army Reserve
USBR	United States Bureau of Reclamation
USC	United States Code
USCENTCOM	U.S. Central Command
USCG	United States Coast Guard
USCINCPAC	Commander in Chief, United States Pacific Command
UNCINCSO	Commander in Chief, United States Southern Command
USCINCSOC	Commander in Chief, United States Special Operations Command
USCINCTRANS	Commander in Chief, United States Transportation Command
USCOLD	United States Committee On Large Dams
USCGR	United States Coast Guard Reserve
USDA	United States Department of Agriculture
USDA/FNS	Department of Agriculture/Food Nutrition Service
USDOI	United States Department of the Interior
USDOL	United States Department of Labor
USEUCOM	U.S. European Command
USFA	United States Fire Administration
USFS	U.S. Forest Service
USFWS	United States Fish and Wildlife Service
USG	United States Government
USGS	United States Geological Survey
USJFCOM	United States Joint Forces Command
USLANTCOM	United States Atlantic Command
USML	United States Munitions List
USN	United States Navy
USIA	United States Information Agency
USMC	United States Marine Corp

USMRICD	US Army Medical research Institute of Chemical Defense
USMRIID	US Army Medical Research of Infectious Diseases
USMS	United States Marshals Service
USMTF	United States Message Text Format(ting)
USOC	United States Olympic Committee
USPACOM	United States Pacific Command
USPHS	United States Public Health Service
USPS	United States Postal Service
US&R	Urban Search & Rescue
USS	United States Senate
USS	United States Ship
USSOCOM	United States Special Operations Command
USSOUTHCOM	U.S. Southern Command
USSPACECOM	United States Space Command
USSS	United States Secret Service
UST	Underground Storage Tank
USTRANSCOM	United States Transportation Command, Department of Defense
USVI	United States Virgin Islands
UTC	Universale Temps Coordinaire (i.e., Coordinated Universal Time)
UTC	Unit Type Command
UTM	Universal Transverse Mercator
UV	Ultraviolet
UVI	Ultraviolet Index

VA	Department of Veterans Affairs
VA	Vulnerability Assessment
VAL	Voluntary Agency Liaison
VAMC	Veterans Administration Medical Center
VCR	Video Cassette Recorder
VCU	VOLAG Coordination Unit
VDU	Visual Display Unit
VDU	Visual Docking Unit
VEE	Venezuelan Equine Encephalitis
VEI	Volcanic Explosivity Index
VERA	Voluntary Early Retirement Authority
VGA	Video Graphics Adapter
VHA	Veterans Health Administration, Department of Veterans Affairs
VHF	Very High Frequency (radio)
VI	Virgin Islands
VIK	Value-In-Kind
VIP	Very Important Person
VIP	Volunteer Incentive Program
VISC	Visual Information Support Center
VISN	Veterans Integrated Services Network
VISTA	Volunteers In Service To America
VITA	Volunteers in Technical Assistance
VITEMA	Virgin Islands Territorial Emergency Management Agency

VLF	Very Low Frequency
VNPSC	Virginia National Processing Service Center
VOA	Voice of America
VOAD	Volunteer Organizations Active in Disaster
VOLAG	Volunteer Agency(ies)
VORTEX	Verification of the Origin of Rotation in Tornadoes Experiment
VS	Victim Support
VSAB	Vehicle Storage Administration Building
VSAT	Very Small Aperture Transmission (Satellite)
VST	Victim Support Task (NTSB)
VSW	Village Safe Water (within ADEC)
VTC	Video Tele-Conference(ing)
VX	Mustard-Lewisite mixture and Phosgene (symbol for)
V-Zone	Coastal High Hazard Area
WAE	When Actually Employed
WAN	Wide Area Network
WAR	Weekly Activities Report
WARNO	Warning Order
WATS	Wide Area Telecommunications Service
WAWAS	Washington Area Warning System
WAWTAP	Wind And Water Technical Assistance Program
WB	Wideband
WEE	Western Equine Encephalitis
WEL	Women's Executive Leadership Program
WEM	Workshop in Emergency Management
WER	Weapons-Effect Reporting
WES	U.S. Army Engineers Waterways Experiment Station, Vicksburg, MS
WG	Wage Grade
WGI	Within-Grade Increase
WH	White House
WHCA	White House Communications Agency
WHMO	White House Military Office
WHNSA	Wartime Host Nation Support Agreement
WHO	World Health Organization
WHS	Washington Headquarters Services
WHSR	White House Situation Room
WIMS	Weather Information Management System
WIN	WWMCCS Intercomputer Network
WITS	Washington Interagency Telecommunications System
WMD	Weapon(s) of Mass Destruction
WMD	Water Management District
WMO	World Meteorological Organization
WO	Work Order
WO	Warrant Officer
WORM	Write Once - Read Many
WP	Word Processing (or Processor)

WP	White Phosphorus
WPA	Works Progress Administration
WRIST	Weather Radar Identification of Severe Thunderstorms
WPS	Water Purification System
WPS	Word Processing System
WRDA	Water Resources Development Act
WRM	War Reserve Material
WRSC	Water Resources Support Center
WRTC	Wetlands Research& Technology Center (at WES)
WSR	Weather Surveillance Radar
WSSPC	Western States Seismic Policy Council
WWMCCS	World Wide Military Command and Control System (obsolete, replaced by GCCS)
WWW	World Wide Web
WWU	Watch and Warning Unit
WYO	Write Your Own (Insurance)
WYSIWYG	What You See Is What You Get
YCC	Youth Conservation Corps
YLD	Yield
YLD	Young Lawyers Division (ABA)
Z	Zulu time (Universal Coordinated Time)
ZBB	Zero-Based Budgeting
ZECP	Zone Emergency Comunications Planner
ZFP	Zone Forecast Product
Zr	Zirconium (symbol for)
ZULU	Greenwich Mean Time
ZWA	Zonal Wind Anomaly

HEADQUARTERS, USAED PACIFIC OCEAN
FORT SHAFTER, HI 99506-0898

APPENDIX 2 TO ANNEX Y TO ANCHORAGE EARTHQUAKE CDRP
SPECIALIZED TERMS

Advance Element of the Emergency Response Team (ERT-A): The portion of the Emergency Response Team (ERT) which is the first group deployed to the field to respond to a disaster incident. For Alaska, this function is performed by the Alaska Emergency Response Team (AERT), which consists of personnel from the Anchorage area. In effect, the AERT is a predeployed ERT-A.

Affected Area: An area in which there is some damage to the infrastructure, but it is functional, there is serious, but non-life threatening damages, and the local assets are overwhelmed, but state assets are adequate.

Alaska Emergency Response Team (AERT): Predesignated Federal personnel who provide immediate staffing of the management positions in the Interim DFO in the event of a severe disaster in Alaska. This enables the Federal agencies to provide immediate response in support of the State of Alaska. The AERT consists of the Federal Liaison Officer, three Deputy Federal Liaison Officers, representatives of 11 ESFs, and a Public Information Officer. (Some of the ESFs immediately use their regular Disaster Field Office staff for the AERT. Most of the others, which have their primary regional offices in the Lower 48, temporarily use local representatives. ESF 12 does not have an AERT representative.)

Alaska Regional Interagency Steering Committee (ARISC): The group in Alaska composed of Federal and State emergency personnel who provide planning expertise on how to respond to disasters and emergencies within Alaska. In many cases, the primary Federal agency representatives on the ARISC are employed outside Alaska, but work for a regional office that has responsibility for Alaska.

Area Office: The Area Office accomplishes mission assignments given to it by the Disaster Field Office (DFO). Note: The Area Office is specified in USACE plans, but would only be used in Alaska if the Disaster Field Office were located outside of the Anchorage area.

Attack: Any attack or series of attacks by an enemy of the U.S. causing or which may cause substantial damage to civilian property or persons in the U.S. in any manner by sabotage, or the use of bombs, shell fire, or atomic, radiological, chemical, bacteriological, or biological means or other weapons or processes.

Capability Assessment: A formal measurement of current capabilities against standards, criteria, or planning factors that have been established as necessary to perform emergency management functions.

Catastrophic Disaster: There is no commonly accepted definition of a catastrophic disaster, but the term implies an event or incident which produces severe and widespread damages of such a

magnitude as to require significant resources from outside the affected area to provide the necessary response. For the purpose of the Federal Response Plan, a catastrophic disaster is defined as an event that results in large numbers of deaths and injuries; causes extensive damage or destruction of facilities that provide and sustain human needs; produces an overwhelming demand on State and local response resources and mechanism; causes a severe long-term effect on general economic activity; and severely affects State, local, and private sector capabilities to begin and sustain response activities.

Catastrophic Disaster Response Group (CDRG): The national-level group of representatives from the Federal departments and agencies under the Plan. The CDRG serves as a centralized coordinating group to support the on-scene Federal response and recovery efforts.

Cognizant Federal Agency (CFA): The Federal agency that owns, authorizes, regulates, or is otherwise deemed responsible for the radiological activity causing the emergency and that has the authority to take action on site.

Defense Coordinating Officer (DCO): Supported and provided by the Department of Defense (DoD) to serve as the DoD point of contact for the Federal Coordinating Officer and the Emergency Support Functions regarding requests for military assistance. The DCO and staff coordinate support and provide liaison to the ESFs. In Alaska, ALCOM provides the DCO.

Designated Area: The geographical area designated under a Presidential major disaster declaration which is eligible to receive disaster assistance in accordance with the provisions of PL 93-288, as amended. The area is initially established in the declaration, but the designated area may be subsequently expanded by the FEMA Regional Director. The designated area is defined by counties, except for those states (i.e., Alaska, Missouri, and Virginia) that have areas not included in counties (or the equivalent governmental areas).

Disaster Assistance Center (DAC): A facility established by the State/Federal Coordinating Officer in or adjacent to a disaster impacted area to help disaster victims meet their emergency/rehabilitation needs.

Disaster Emergency: A term used by the State of Alaska, identifying the condition declared by proclamation of the Governor or declared by the principal executive officer of a political subdivision to designate the imminence or occurrence of a disaster.

Disaster Field Office (DFO): The office, established in each affected State or City, within which is located:

The Federal Coordinating Officer

All ESF Teams for Response (some ESFs are managed within the DFO, while others are managed at the primary agency's EOC and provide liaison to the DFO).

All Recovery Activities

Disaster Relief Fund (DRF): A fund established by Alaska State law, that may be expended upon the Governor's approval for disaster relief, prevention, or mitigation according to AS.26.23.300.

Emergency: As defined at Title V of the Stafford Act, Section 102(1), an emergency is any occasion or instance for which, in the determination of the President, Federal assistance is needed to supplement State and local efforts and capabilities to save lives and to protect property and public health and safety. Title V includes authority for the President to direct Federal agencies to provide emergency assistance to save lives and protect property and public health and safety for emergencies other than natural disasters. Under Title V, the President may direct the provision of emergency assistance either at the request of a Governor (Section 501(a)) or upon determination by the President that an emergency exists for which the primary responsibility for response rests with the United States (501(b)).

Emergency Alert System (EAS): The EAS consists of a network of broadcast stations, across the Nation and across the State, with equipment designed to allow the automatic transmission and broadcasting of emergency messages. Alerts pass from station to station and on to the air automatically, without human intervention. The State Division of Emergency Services activates the EAS for State-level alerts.

The new EAS incorporates coding that allows specific locations to be alerted, so that only affected areas receive the alert, so as not to alarm locations not affected. The new EAS allows alert information to be digitally coded, along with standard audio information, so that television stations can have a crawl that displays the text of the alert for hearing-impaired citizens.

EAS was designed to be a cooperative effort between government agencies and local broadcasters. In Alaska the EAS is overseen by the State Emergency Communications Committee (SECC), whose members include local broadcasters, the State of Alaska Division of Emergency Services (ADES), the National Weather Service and the West Coast and Alaska Tsunami Warning Center. The SECC is chaired by Alaska broadcasters.

Emergency Broadcast System (EBS): The predecessor of the Emergency Alert System, the EBS was phased out as of January 1st, 1998.

Emergency Operations Center (EOC): A site from which government officials exercise direction and control in an emergency or disaster.

Emergency Response Team (ERT): An interagency team, consisting of the lead representative from each Federal department or agency assigned primary responsibility for an ESF and key members of the FCO's staff, formed to assist the FCO in carrying out his/her coordination responsibilities. The ERT provides a forum for coordinating the overall Federal response, reporting on the conduct of specific operations, exchanging information, and resolving issues related to ESF and other response requirements. ERT members respond to and meet as requested by the FCO. The ERT may be expanded by the FCO to include designated representatives of other Federal departments and agencies as needed.

Emergency Support Function (ESF): Preassigned response missions with a designated lead agency and assigned support agencies. The basic mission is to perform those functions, related to the agency's normal duties, in an immediate response to an event.

External Support Team (EST): Organized to provide a specific support to a mission team, generally in another functional area.

Federal Coordinating Officer (FCO): The senior Federal official appointed to coordinate the overall Federal response and recovery activities.

Federal Emergency Management Agency (FEMA): The primary Federal agency for planning, organizing, and coordinating Federal disaster response and recovery activity. Alaska is within FEMA Region X; that regional office is in Bothell, Washington.

Federal Liaison Officer (FLO): In Alaska, the local Federal official delegated the authority to coordinate Federal activities until the Federal Coordinating Officer arrives on scene.

Federal Resource Coordinating Officer (FRCO): Responsible for the overall coordination of the federal resources and supplies into the affected areas.

(The) Federal Response Plan: The Federal Response Plan (known as The Plan or FRP) is an interagency agreement that provides the basis for providing Federal assistance to a State and its affected local governments impacted by a catastrophic or significant disaster or emergency which results in a requirement for Federal response assistance. The plan is based on the fundamental assumption that a major disaster will immediately overwhelm the capability of State and local governments to carry out the huge number of actions which will be needed to save lives and to protect health and property.

Function Coordinator: Within the State of Alaska, the agency which has overall responsibility for the tasks within each function.

Governor's Authorized Representative (GAR): The person named by the Governor in the Federal-State Agreement to execute on behalf of the State all necessary documents for disaster assistance following a Presidential declaration of an emergency or a major disaster.

Hazardous Substance: An element or compound which, when it enters into the atmosphere or in or upon the water or surface or subsurface land of the State, presents an imminent and substantial danger to the public health or welfare, including but not limited to fish, animals, vegetation, or any part of the natural habitat in which they are found; oil; or a substance defined as a hazardous substance under 42 U.S.C. 9601 (14).

Immediate Response: This phase of Federal activity is designed to provide local and State authorities supplemental assistance in response to a major disaster. In such an event the non-Federal resources for response would be overwhelmed.

Impacted Area: An area that has imminent threat to safety, the infrastructure is not functional, and both local and state teams are overwhelmed.

Incident Command System (ICS): A system, developed by fire fighters, which allows for the management and coordination of all activities and resources in responding to any number of individual incident sites. The Incident Command System is used by the State of Alaska, and it serves as the guide for the Federal organization in the Disaster Field Office in Alaska.

Initial Recovery: This is the traditional Federal supplemental recovery assistance effort. This phase will overlap the response phase, probably starting just a few days after the response phase began. Initial recovery concentrates on meeting essential human needs. (See Long-Term Restoration and Recovery)

Interim Disaster Field Office (IDFO): the facility used to coordinate the Federal response effort during the initial stages of a catastrophic event. It will probably be used for several days, until FEMA is able to activate a long-term Disaster Field Office. The primary IDFO, the Alaska National Guard Armory at Camp Denali, on Fort Richardson, Alaska, provides facilities for both the Federal and State operating centers. Alternate facilities have been designated, but would not provide enough space for Federal and State agencies to colocate.

Joint Information Center (JIC): The primary field location for the coordination of Federal and State media relations. It is located in or near the DFO.

Lifelines: A generic term for certain essential facilities and systems which includes water and sewer, transportation, communications, electrical power, gas, and liquid fuels.

Local Emergency Planning Committee (LEPC): A local group, appointed by the SERC, responsible for preparing emergency plans for the district and processing public requests for information under 42 U.S.C. 11044.

Local Emergency Planning District (LEPD): A geographic portion of the State, with boundaries designated by the SERC, which establishes the area of responsibility for each Local Emergency Planning Committee.

Long Term Restoration and Recovery: This is the final stage of recovery after a major disaster. It is considered to be the time frame after all the basic human needs are met. This phase is the period when living standards are brought more closely to the normal living standards associated with the area prior to the disaster. (See Initial Recovery)

Major Disaster: As defined under the Stafford Act, any natural catastrophe, (including any hurricane, tornado, storm, flood, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought) or, regardless of cause, any fire, flood, or explosion, in any part of the United States, which in the determination of the President causes damage of sufficient severity and magnitude to warrant major disaster assistance under this Act to supplement the efforts and available resources of States, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby.

Mission Teams: Organized under a specific function to independently carry out a designated mission. For example, Heavy rescue teams, light rescue teams, dog teams, and technical detection teams would support the Search and Rescue ESF.

National Attack Warning System (NAWAS): A special telephone system which links Alaska with other states and with Federal authorities. A Sub-network portion of the system, the Alaska System, ties together State and local warning points as well as the National Weather Service; the U.S. Coast

Guard in Juneau and Kodiak; and the Tsunami Warning Center.

National Emergency Coordination Center (NECC): The FEMA facility which provides notification to Headquarters and Regional responders of implementation of the Federal Response Plan.

On-Scene Coordinator (OSC) (State of Alaska definition)**:** A State employee, assigned to the scene of a disaster emergency to provide liaison between on-scene officials and the State EOC.

Operational Facilities: All of the facilities required to support response and recovery operations, such as the DFO, points of arrival, points of departure, mobilization areas and staging areas.

(The) Plan: See Federal Response Plan.

Planning and Response Team: A predesignated and trained USACE emergency team that performs a specific assistance or support disaster response/recovery mission. Teams assigned to a direct assistance mission (structural safety assessment, emergency electrical power, etc.) are established by individual districts; functional support teams (logistics, etc.) may be established division-wide or USACE-wide. Teams may be activated by the Division Commander for missions within the same division, or by HQUSACE for mission requirements nationwide.

Prediction Response: See Pre-Disaster Response.

Pre-Disaster Response: Based on the potential or known threat of a natural disaster, i.e. hurricane, typhoon and volcanic eruption, or other event, preparatory actions taken by Federal, State, and local governments to protect life and property and to minimize the effects of the event on response personnel and equipment. These actions facilitate the deployment of resources necessary for immediate response and initial recovery operations, as required. (This phase is called prediction response in some USACE publications.)

Primary Agency: The Federal department or agency assigned primary responsibility to manage and coordinate a specific ESF. Primary agencies are designated on the basis of their having the most authorities, resources, capabilities, or expertise relative to accomplishment of the specific ESF support. Primary agencies are responsible for overall planning and coordination of the delivery of ESF-related Federal assistance to their State counterparts, in conjunction with their support agencies.

Primary Response District: The district which is assigned the responsibility to respond, within a specified State or City, to supplement non-Federal efforts.

Recovery: Activities traditionally associated with providing Federal supplemental disaster recovery assistance under a Presidential major disaster declaration. These activities usually begin within days after the event and continue after the response activities cease. Recovery incudes individual and public assistance programs which provide temporary housing assistance, grants and loans to eligible individuals and government entities to recover to assist recovery from the effects of a disaster. (See Initial Recovery and Long Term Restoration and Recovery)

Regional Operations Center (ROC): The temporary operations facility for the coordination of Federal response and recovery activities, located at the Federal Regional Center at Bothell, Washington (or designated site for another region) and led by the FEMA Regional Director or Deputy Director until the DFO becomes operational. Coordination of operations in Alaska shifts to the Interim DFO upon arrival of the initial FEMA Region X team at the IDFO; similar procedures are provided for other areas. After control shifts to the DFO, the ROC performs a support role for Federal staff at the disaster scene. (Note: in Alaska, some of the ESFs immediately send their primary management staff to the Interim DFO instead of to the ROC.)

Response: Activities to address the immediate and short-term effects of an emergency or disaster. Response includes immediate actions to save lives, protect property, and meet basic human needs. Based on the requirements of the situation, response assistance will be provided to an affected State under the Federal Response Plan using a partial activation of selected ESFs or the full activation of all ESFs to meet the needs of the situation. (See Pre-Disaster Response and Immediate Response)

Response 2000 (R2K): A nationwide USACE approach to disaster response that utilized pre-identified and pre-trained teams to support the impacted division and district office. Features include: preparedness resources are based on the disaster threat within the division's area of responsibility; use of trained planning and response teams; provision of standardized tactical operations systems to provide emergency work space, data processing, and communications; establishment of a centralized center for training, exercises, evaluation, and corrective actions; and a national database to identify potential augmentees for disaster responses.

Senior FEMA Official (SFO): For a radiological emergency, the official appointed by the Director of FEMA, or his representative, to direct the FEMA response at the scene of the emergency.

Staging Area: A pre-identified location where personnel and material, for response to a major disaster will be sent. The personnel and material will be assembled and when ready sent into the affected areas to perform pre-assigned missions.

State: Under the Federal Response Plan and as defined under PL 93-288, any State of the United States, the District of Columbia, Puerto Rico, the Virgin Islands, Guam, American Samoa, the Trust Territory of the Pacific Islands, the Commonwealth of the Northern Mariana Islands, the Federated States of Micronesia, or the Republic of the Marshall Islands. (Note: Within the Pacific Islands, the area authorized for assistance under PL 93-288 differs from that covered by PL 84-99.)

State Area Commander: The individual responsible for coordination of overall State of Alaska disaster response operations.

State Coordinating Officer (SCO): The senior State official appointed to coordinate the overall State response and recovery activities.

State Emergency Response Commission: (SERC): A commission established by law to oversee the implementation of the Emergency Planning and Community Right to Know Act

(EPCRA) of 1986, also known as the Superfund Amendments and Reauthorization Act (SARA), Title III. SERC responsibilities have been expanded to include all hazards and the integration of common aspects of hazardous substance contingency planning with emergency planning for other threat forms.

Support Agency: A Federal department or agency designated to assist a specific primary agency with available resources, capabilities, or expertise in support of ESF response operations, under the coordination of the primary agency.

Support Area: An area where there is minimal damages, the infrastructure is basically intact, and local and state assets are adequate.

Support District: A district which is near the affected areas, not charged with primary response duties, and is the prime source of supplementing the resources of the Primary Response District.

Technological Hazard: Includes a range of hazards emanating from the manufacture, transportation, and use of such substances as radioactive materials, chemicals, explosives, flammables, agricultural pesticides, herbicides and disease agents; oil spills on land, coastal waters or inland water systems; and debris from space.

Victim District: A district which lies in the extreme damage area, and which becomes nonfunctional because of the disaster. Its personnel would be unable to return to work because of damage at home, no access to the district office, and/or no office to work from. If a district is considered a Victim District, the Support District will respond for the Victim District.

Annex Z (Distribution)

This annex is the distribution list for the plan. It includes organizations, addresses, names (if appropriate), and phone and facsimile numbers.

Appendix 1 is Corps of Engineers distribution.
Appendix 2 is DOD distribution.
Appendix 3 is FEMA and FRP agency distribution.
Appendix 4 is state and regional government distribution.