FEMA P-50 Simplified Seismic Assessment Form For Detached, Single-Family, Wood-Frame Dwellings (Please print all information) Street Address Community/Area/City ZIP Code Date Owner Inspector Inspection Form # (optional) For each question, circle only one answer. Circle the one with higher penalty if more than one answer applies. Exception: question B-1 A. Foundation (If the dwelling has a crawl space, the inspector should view all the areas that are accessible.) Penalty *A-1 The exterior footing is: a continuous concrete or reinforced masonry a continuous concrete or reinforced masonry In System supports a wood framed floor:

<u> </u>		The state of the s	.opcoto. o			all the areas that are accessible.)	
			<u>Penalty</u>				Penalty
*A-1	The	e exterior footing is: continuous concrete or reinforced masonry	[0]	*A-5	At t	he dwelling perimeter walls, where the foundation tem supports a wood framed floor:	
	b.	other footing conditions	[4.2]		a.	the foundation with average anchor bolt spacing	[0]
A-2		e lowest floor of the dwelling is:				of 72 in. or less	
	a.	slab-on-grade	[0]		b.	the foundation sill plate is fastened to the	[0]
	b. c.	wood framed over crawl space or basement combination of slab-on-grade and wood framed	[2.9] [2.9]			foundation with retrofit anchors equivalent to 72 in. or less anchor bolt spacing	
		floor over crawl space or basement	[2.8]		C.	the anchor bolts have average spacing that is > 72 in. but <= 108 in.	[1.7]
*A-3		he dwelling crawlspace or basement interior, the est floor framing is supported on:			d.	the anchor bolts have > 108 in. average spacing	[4.6]
	a.	continuous stem walls or a combination of continuous stem walls and beams on posts bearing on concrete footings/piers	[0]		e.	the foundation sill plates have extensive decay, splitting, or inadequate edge distance at one-third or more of the anchor bolt locations such	[10.0]
	b.	beams on posts bearing on piers/pad footings	[0.8]			that significant slip of the sill plate could occur	
	C.	beams on posts supported directly on soil	[2.2]		f.	the anchor bolts have significant corrosion at	[10.0]
	d.	not applicable: slab-on-grade	[0]			one third or more of the anchor bolt locations	•
A-4	For	a foundation on a slope of 3 horizontal to 1 verticateeper, the top of the footing or foundation stem	al wall			such that significant slip of the sill plate could occur	
	on v	which wall studs or posts are supported is:			g.	there are no foundation anchor bolts	[15.0]
	a.	sloped parallel to the ground slope	[3.7]		h.	there are no foundation sill plates to connect to the foundation	[15.0]
	b.	stepped	[1.8]		i.	not applicable	[0]
	C.	at a constant elevation with no steps	[0.6]	,	 T~4	···	. , ,
	d.	not applicable	[0]		Tota	ai	

B. Superstructure Framing and Configuration (Every accessible area such as the attic and under-floor area that reveals structural elements must be inspected.)

Penalty

			Penan	<u> </u>		<u> </u>	<u>enaity</u>
B-1	The	e dwelling has: (circle all that apply, a to e)		*B-4		r an attached garage with a second floor above, the	
	a.	unsymmetrical wall strength (torsion	yes [1.6	3]		rrow walls at the side of the garage door openings ha	
		problems)		_	a.	wood structural panels on each narrow wall pier	[0]
	b.	reentrant corners (seen in plan view)	yes [0.:	3]	b.	structural steel frames around or alongside the doc	r [0]
	C.	split-level floor construction	yes [2.0	0]	C.	prefabricated narrow shear walls, installed in	[0]
	d.	out-of-plane offsets of more than 4 ft. in	yes [0.4	1] [accordance with manufacturer's recommendations	
		exterior walls			d.	none of the conditions specified in conditions a, b,	[3.0]
	e.	non-orthogonal seismic resisting systems	yes [0.6	3]		or c above (that are visable)	
	f.	none of the above, or built in accordance with 1994 UBC, 2000 IBC, 2000 IRC or	yes [0]	e.	not applicable (single story) or built in accordance with 1997 UBC, 2000 IBC, 2000 IRC or later edition	[0]
		later edition		*B-5	The	e exterior wall covering is primarily:	
*B-2	len	exterior walls at the lowest occupied story, the gth of full story height wall sections (between o	summed penings,		a.	siding known to be over plywood or OSB sheathing	[0]
	exc	luding < 2'-8" panels) on any face is less than:			b.	siding not known to be over plywood or OSB	[2.5]
	a.	20% of the length of the wall, if a single story	yes [3.2	2]		sheathing	[]
	b.	25% of the length of the wall, if two stories	yes [3.2	2]	C.	plywood (T1-11) or diagonal wood siding	[0]
	C.	40% of the length of the wall, if three stories	yes [3.2	2]	d	stucco	[1.0]
	d.	or more none of the above	[(0]	e.	masonry veneer not more than 10 feet above the supporting foundation	[2.5]
*B-3		ne roofing is heavy (i.e., clay or concrete tile) the elling is:	е		f.	masonry veneer more than 10 feet above the supporting foundation	[3.5]
	a.	single story	[1.6	3]			
	b.	multi-story	[3.	-			
	C.	not applicable: roofing is light.	_ [0	- 1			
*Ass	essr	nent item that may be improved by seismic retr	ofit: see i	nage 6	Sect	ion H	

*Assessment item that may be improved by seismic retrofit; see page 6, Section H

B. Superstructure Framing and Configuration (Every accessible elements must be inspected.) (continued)	ole area such as the attic and under-floor area that reveals structural
<u>Penalty</u>	Penalty
B-6 There is evidence of interior remodeling that has removed interior walls: yes [1.0]	c. original or retrofitted perimeter cripple walls with [1.0] plywood or OSB sheathing where cripple walls are one story or less in height
no/ not applicable [0] B-7 The number of stories is:	d. original or retrofitted perimeter cripple walls [4.0] with plywood or OSB sheathing where cripple
a. one (1) [0]	walls are greater than one story in height
b. two (2) [1.8] c. 3 or more [3.6]	e. wood or steel diagonal braces not detailed [7.0] in accordance with 1997 UBC, 2000 IBC or later edition
*B-8 At the dwelling perimeter, the main lowest framed floor is supported on:	f. plywood or OSB sheathed perimeter skirt walls [7.0] that do not extend to and anchor to the foundation
a. beam and column (post-and-pier) system [14.0] with no sheathed exterior walls	g. none of the above [0]
b. perimeter cripple walls with no plywood or [14.0] OSB sheathing	Total
C. General Condition Assessment	
Penalty	Penalty
C-1 The overall condition of the dwelling is:	*C-4 At the foundation level, there is:
a. good (essentially crack free, no moisture/water [0] intrusion problems)	a. significant deterioration visible (corrosion, [1.3] material breakdown)
b. fair (minor wood decay and cracks) [1.0]	b. some deterioration visible [0.6]
c. poor (many cracks on interior and exterior, floor [2.1] out-of-level and wood decay)	c. no deterioration visible [0]
*C-2 In the under floor area, there has been structural	C-5 Throughout the dwelling, the quality of construction
alteration (e.g. cutting or notching of framing for	appears to be: a. good [0]
electrical, plumbing, mechanical equipment) that would affect the performance of the dwelling in an	a. good [0] b. average [0.8]
earthquake: yes [1.5]	c. poor [1.7]
no [0]	[,,
not applicable [0]	
*C-3: There is evidence of: stucco detachment, bowing of stucco, corroded wire mesh, extensive cracking at	
finished grade above the bottom of the stucco:	
a. extensive [2.0]	
b. minor [1.0] c. none [0]	
c. none [0]	Total
D. Nonstructural Elements, Age, and Size	
<u>Penalty</u>	Penalty
*D-1 The chimney inspection revealed:	*D-4 The dwelling has exterior stairs, decks or porch roofs,
a. properly connected anchor straps tying	without internal earthquake bracing, that are attached to the dwelling with:
the masonry/concrete chimney(s) at side of house to the floor, ceiling and roof	a. two or more connections tying the stair, deck or [0]
framing yes [1.0]	porch to the dwelling interior framing
no [2.0]	b. nails or screws that would be loaded in withdrawal [1.0] if the stair deck or porch moved away from the
b. chimney occurs at dwelling interior [1.0]	dwelling
c. dwelling has no masonry/concrete chimney [0]	c. other connection configurations [1.0]
*D-2 The gas water heater has effective anchor straps and water and gas connections: yes [0]	D-5 The dwelling was built: (if remodel/added
no [1.0]	area >50% of total area, use addition date): a. before 1920 [3.0]
The electric water heater has approved anchor	a. before 1920 [3.0] b. 1921 to 1977 [2.0]
straps: yes [0]	c. 1978 to 1993 [1.0]
no [0.7]	d. 1994 or later [0]
*D-3 An earthquake-activated gas shut-off valve is installed: yes [0]	D-6 The approximate total floor area (sq. ft.) of the dwelling and attached garage is:
no [1.0]	a. < 1600. [0]
not applicable [0]	b. 1601 - 2500 [1.0]
	c. ≥ 2501 [2.0]
	Total
*Assessment item that may be improved by seismic retrofit; see page	ge 6, Section H
Simplified Seismic Assessment Form	Page 2

<u>Pena</u>	Y Penalt
E-1 The dwelling is located primarily on: a. a flat lot or slope (≤ 3:1) b. steep slope (> 3:1) [3] E-2 The dwelling is located on a cut-and-fill pad, which was developed: a. without a geotechnical investigation b. with a geotechnical investigation c. dwelling is not on cut-and-fill pad *E-3 The exterior concrete footing has: a. no visible cracks or a few minor cracks b. minor cracks in several areas c. extensive cracking	E-4 The evidence of differential settlement in or around the dwelling is: a. extensive b. minor c. none visible E-5: The slope above or below the structure appears to be unstable: yes [3.2] no [0] *E-6: General condition of site drainage: a. roof gutters and downspouts collecting and conducting water away from foundation b. water collecting at/near perimeter feeting with po. [3.6]
F. Regional Seismic Hazard Score	Total
	Ground Shaking Points Ground Failure Points
F-1 Enter points for shaking hazard potential for location of dwelling (from Table 1).	0 2
F-2 Are ground failure hazards to be looked up using Tables 2, 3, and 4? yes, go to F	2, 4 3 6, 8 4
no, proceed to F-6 and enter 4.0 poi for ground failure hazar	
F-3 Is this dwelling located in a liquefaction zone (from Table 2 or landslide zone (from Table 3)? yes, go to F	7 5 Total ground landre points from 1 -2, 1 -4, 01
F-4 Proceed to F-6 and enter ground failure hazard points in accordance with the following table:	Total Seismic Hazard Score (Sum of F-1 and F-6)

Table 1. Assignment of Ground Shaking Hazard Score

1.	Use the USGS Seismic Design Maps Web Application (http://earthquake.usgs.gov/designmaps/usapp) to look up ground shaking parameter S _{DS} : a. Press the 'Launch Application' button. b. In the web application, select '2012 IBC' for the Building Code Reference Document. c. Select 'Site Class D – "Stiff Soil" (Default)' for the Site Soil Classification. d. Enter the site address or latitude and longitude. e. Press the 'Compute Values' button. f. Read parameter S _{DS} from the summary report. Enter here: g g. Multiply value from 1f by 100:%g							
2.	Using the value from 1g, assign ground shaking points according to the following table (these points are assigned in Item F-1):							
	Value of S _{DS} (% g)	Ground Shaking Hazard Points]					
	33 - 66.99	0						
	67 - 82.99	2						
	83 - 124.99	4						
	125 - 187.99	6						
	188 - 250	8						

¹Note:If you are using the USGS application for the first time, or have recently cleared your web browser cookies, you may have to register for immediate use. Also, if you are using an anti-virus software program, you may have to enable some links to this site, e.g., if you receive a message that says "only secure content is displayed, "you must click on "show all content."

* Assessment item that may be improved by seismic retrofit; see page 6, Section H	
Simplified Seismic Assessment Form	Page 3

Table 2. Assignment of Site as Being Within a Liquefaction Zone

- 1. If site is in California, locate site on the California Emergency Management Agency (Cal EMA) MyPlan web site (myplan.calema.ca.gov).
 - a. Enter address in 'Find Location' window.
 - b. Select 'liquefaction' in menu bar to right of map.
 - c. Zoom as needed to see map details.
 - d. If site is located within green zone on map, answer to Question F-3 is 'yes'.
 - e. If site located in non-liquefaction and non-seismic landslide zone on map (generally pale yellow), answer to Question F-3 is 'no'.
 - f. Site not mapped if background is stippled. Go to Step (2).
- 2. If site is not on Cal EMA web site, determine site liquefaction potential/susceptibility using available web resources. See www.ATCouncil.org/pdfs/FEMAP-50LiquefactionInfo.pdf for a list of such resources. Map types shown in these web resources are:
 - a. Liquefaction susceptibility maps. Answer to F-3 is 'yes' if site is in a zone of moderate-to-high liquefaction susceptibility. Answer is 'no' if in a low susceptibility or non-susceptible zone.
 - b. Liquefaction potential maps. Answer to F-3 is 'yes' if site is in a liquefaction potential zone. Answer is 'no' if in a low or null potential zone.
 - c. Liquefaction potential index (LPI) maps. Answer to F-3 is 'yes' if site is has mapped LPI ≥ 5 and no if mapped LPI < 5.
- 3. If the location of the site has not been mapped, Question F-3 can be answered as 'yes' if other local information suggests liquefaction potential and 'no' if such information suggests no such hazards.
- 4. If no maps are available and no information on site conditions is available, answer question F-2 as 'no'.

Table 3. Assignment of Site as Being Within a Seismic Landslide Zone

- 1. If site is in California, attempt to locate site on the Cal EMA MyPlanweb site (myplan.calema.ca.gov).
 - a. Enter address in 'Find Location' window.
 - b. Select 'landslide' in menu bar to right of map.
 - c. Zoom as needed to see map details.
 - d. If site is located within brown zone on map, answer to Question F-3 is 'yes'.
 - e. If site located in non-seismic landslide zone on map (generally pale yellow), answer to Question F-3 is 'no'.
 - f. Site not mapped if background is stippled. Go to Step (2).
- 2. If site is not on Cal EMA web site, determine site landslide potential/susceptibility using available web resources. See www.ATCouncil.org/pdf/FEMAP-50LandslideInfo.pdf for a list of such resources. Map types shown in these web resources are:
 - a. Seismic landslide susceptibility maps. Answer to F-3 is 'yes' if site is in a zone of moderate to high seismic landslide susceptibility. Answer is 'no' if in a low susceptibility or non-susceptible zone.
 - b. Seismic landslide potential maps. Answer to F-3 is 'yes' if site is in a seismic landslide potential zone. Answer is 'no' if in a low or null potential zone.
- 3. If the location of the site has not been mapped, Question F-3 can be answered as 'yes' if other local information suggests high landslide potential and 'no' if such information suggests no such hazards (e.g., flat site).
- 4. If no maps are available and no information on site conditions is available, answer question F-2 as 'No'.

Table 4. Assignment of Site as Being Within a Surface Fault Rupture Zone

- 1. If site is in California, locate site on the Cal EMA MyPlanweb site (myplan.calema.ca.gov).
 - a. Enter address in 'Find Location' window.
 - b. Select 'Fault Lines' in menu bar to right of map.
 - c. Zoom as needed to see map details.
 - d. If site is located within gray zone on map, answer to Question F-5 is 'yes'.
 - e. If site located in non-gray zone, answer to Question F-5 is 'no'.
 - f. Site not mapped if background is stippled. Go to Step (2).
- 2. If site is not on Cal EMA web site, locate site using USGS Quaternary faults web site (http://geohazards.usgs.gov/qfaults/map.php).
 - a. Select applicable state or region.
 - b. Zoom in on site and determine whether site is near a Quaternary fault that has been active within 15,000 years (marked as red or yellow on map).
 - c. Faults are only marked for map scales marked at the 1 km (or larger) level. At this level of zoom, Question F-5 can be answered as 'yes' if the mapped fault trace is within approximately 0.25 km of the site and 'no' otherwise.

Table 5. Seismic Performance Grade Based on Structural Score and Regional Seismic Hazard Score

Seismic Hazard Score		0 - 1	2 - 3	4 - 5	6 - 7	8 - 10	11 - 12
	1.0 - 45.9 B- C+		С	D	D-	D-	
	46.0 - 64.9	B+	В	C+	D+	D	D-
Structural Score	65.0 - 74.9	Α-	B+	В	С	C-	D+
	75.0 - 84.9	Α-	A-	B+	B-	С	С
	85.0 - 100	Α	Α	A-	B+	В	B-

a. Foundation (Section A) b. Superstructure Framing and Configuration (Section B) c. General Condition Assessment d. Nonstructural Elements, Age, and Size (Section D) e. Local Site Conditions (Section E) Total Penalty Points (a to e): Structural Score = (100 – Total Penalty points from line above): Selsmic Performance Grade (from Table 5) Note: insert this grade, including + or -, if applicable in box on page 1 4. Anticipated Selsmic Performance * Following anticipated selsmic events: 2 Grade A, A.: Excellent Performer (Potential and finish damage, earthquake damage ratio* of 0%-10%-continued occupancy is likely) Grade B, B+, B Good Performer (Potential moderate structural and finish damage, continued occupancy likely following minor structural repairs, senthquake damage ratio* of 0%-50%, selsmic retrofit measures are strongly encouraged) Seismic Performance Grade (from Table 5) Note: insert this grade, including + or -, if applicable in box on page 1 A. Anticipated Seismic Performer (Potential and finish damage, earthquake damage ratio* of 0%-60%-10%, solisimic retrofit measures are strongly encouraged) Seismic Performance Grade (from Table 5) Note: insert this grade, including + or -, if applicable in box on page 1 A. Anticipated Seismic Performer (Potential moderate Structural and finish damage, continued occupancy, earthquake damage ratio* of 20%-10%, solisimic retrofit measures are strongly encouraged) Note: 1. December of the measures are strongly encouraged) Note: 2. The enclosated seismic events are similar to those used to develop the estimated promote of owner performance. The occupancy levels described in this table are generally consistent with the damage pevels presented. 2. The enclosated seismic events are estimated from the structural and finish damage, continued occupancy, earthquake damage ratio* of 20% — 100%, significant repairs prior to continued occupancy, earthquake damage ratio* of 20% — 100%, significant repairs prior to continued occupancy levels presented. 2. The enclo			85.0 - 100	A	Α		A-	B+	В	B-	
a. Foundation (Section A) b. Superstructure Framing and Configuration (Section B) c. General Condition Assessment d. Nonstructural Elements, Age, and Size (Section D) e. Local Site Conditions (Section E) Total Penalty Points (a to e): Structural Score = (100 – Total Penalty points from line above): Seismic Hazard Score (from Section F): 3. Seismic Performance Grade (from Table 5) Note: insert this grade, including + or -, if applicable in box on page 1 Solement (Potential environment) Grade D, D+, D- Poor Performer (Potential severes structural and finish damage, continued occupancy likely following minor structural repairs, earthquake damage ratio of 0%-50%, seismic retrofit measures are encouraged) Grade C, C+, C-: Fair Performer (Potential moderate to major structural and finish damage, structural repairs may be required prior to continued occupancy, earthquake damage ratio of 10%-60%, seismic retrofit measures are structure and finish damage, structural repairs may be required prior to continued occupancy, earthquake damage ratio of 10%-60%, seismic retrofit measures are structure and finish damage, continued occupancy, earthquake damage ratio of 10%-60%, seismic retrofit measures are structure and finish damage, continued occupancy, earthquake damage ratio of 10%-60%, seismic retrofit measures are strongly encouraged) Notes: 1. Dwellings are generally anticipated but not certain to have the described performance. The occupancy levels described in this table are generally consistent with the damage levels presented. 2. The anticipated seismic events are similar to those used to develop the earthquake group develop removed of dwellings adjusted to make a required prior or contains distructural and finish damage, continued occupancy levels presented and provided in the international Penalty and Penalty Reports (Postential Reports described in the international Penalty Reports (Postential Reports described in the international Penalty Reports (Postential Reports described in the international Pe	G. Determination of Seismic Performance Grade										
b. Superstructure Framing and Configuration (Section B) c. General Condition Assessment d. Nonstructural Elements, Age, and Size (Section D) e. Local Site Conditions (Section E) Total Penalty Points (a to e): Structural Score = (100 – Total Penalty points from line above): 2. Seismic Hazard Score (from Section F): 3. Seismic Performance Grade (from Table 5) Note: insert this grade, including + or -, if applicable in box on page 1 Grade D, D+, D-: Poor Performer (Potential severe structure and finish damage, continued occupanty likely following minor structural repairs, earthquake damage ratio of 0%-50%, seismic retrofit measures are encouraged) Grade C, C+, C-: Fair Performer (Potential moderate to major structural and finish damage, continued occupanty, learning the profit of continued occupancy (Potential moderate to major structural and finish damage, continued occupancy (Potential moderate to major structural and finish damage, continued occupancy, earthquake damage ratio of 10%-50%, seismic retrofit measures are strongly encouraged) Grade D, D+, D-: Poor Performer (Potential severe structure and finish damage, continued occupancy, earthquake damage ratio of 10%-60%, seignic retrofit measures are strongly encouraged) Notes: 1. Divellings are generally anticipated but not certain to have the described performance. The occupancy levels described in this table are generally consistent with the damage reverse are similar to those used to develop the earthquake damage ratios are expressed as a percentage of the replacement cost of the dwelling. The damage ratio ranges were obtained and structural cores and subjected to a wide range of seismic hazard score. The stochastic analysis is discussed in detail in Appendix D.	1.	Structural Score Penalty Sun			<u>Sum</u>	4. Anticipated Seismic Performance ¹					
Configuration (Section B) c. General Condition Assessment d. Nonstructural Elements, Age, and Size (Section D) e. Local Site Conditions (Section E) Total Penalty Points (a to e): Structural Score = (100 – Total Penalty points from line above): 2. Seismic Hazard Score (from Section F): 3. Seismic Performance Grade (from Table 5) Note: insert this grade, including + or -, if applicable in box on page 1 Grade B, P+, B- Cood Performer (Potential moderate structural and finish damage, continued occupancy) (key following minor structural repairs, earthquake damage ratio 3 of 0%-50%, seismic retrofit measures are encouraged) Grade C, C+, C-, Fair Performer (Potential moderate to major structural and finish damage, continued occupancy) (key following minor structural repairs, earthquake damage ratio 3 of 0%-50%, seismic retrofit measures are strongly encouraged) Grade D, D+, D-, Poor Performer (Potential severe structure and finish damage, continued occupancy, earthquake damage ratio 3 of 10%-50%, seismic retrofit measures are strongly encouraged) Note: 1. Dwellings are generally anticipated but not certain to have the described performance. The occupancy levels described in this table are generally consistent with the damage levels presented. 2. The anticipated seismic evolution contours illustrated in the International Residential Code Seismic Design Category maps in Figures 2-1 to 2-4. 3. Reported earthquake damage ratios are expressed as a percentage of the replacement cost of the dwelling. The damage ratio ranges were obtained from a shochastic computer model of welling adjusted to suit the stated moderate to the dwelling. The damage ratio ranges were obtained from a shochastic computer model of welling adjusted to suit the stated moderate to the dwelling. The damage ratio ranges were obtained from a shochastic computer model of welling adjusted to suit the stated moderate to the dwelling. The damage ratio range were obtained from a shochastic computer model of welling adjusted to suit the stated modera		a.	Foundation (Section	on A)	[]	Following a	inticipated seismic	events:2		
d. Nonstructural Elements, Age, and Size (Section D) e. Local Site Conditions (Section E) Total Penalty Points (a to e): Structural Score = (100 – Total Penalty points from line above): Seismic Hazard Score (from Section F): 3. Seismic Performance Grade (from Table 5) Note: insert this grade, including + or -, if applicable in box on page 1 Seismic Performance Grade (from Table 5) Note: measures are strongly encouraged) Notes: 1. Dwelings are generally anticipated but not certain to have the described performance. The occupancy levels described in this table are generally consistent with the damage restor are strongled of deweling. The damage rate of deweling in the damage restor of the earthquake gound-motion contours illustrated in the international Residential Code Session Cession Computer model of dwellings educated to a wide trape of simulated gound motions. The damage rate of a dwelling adjusted to a wide trape of simulated gound motions. The damage rate of a dwelling adjusted in a percentage of the replacement cost of the dwelling. The damage rate of a special rate of the dwelling adjusted is a wide trape of simulated gound motions. The damage rate of a dwelling adjusted is a wide trape of simulated gound motions. The damage rate of a dwelling adjusted is a wide the state of angle session character of the dwelling adjusted to a wide trape of simulated gound motions. The damage rate of a dwelling adjusted to a wide trape of simulated gound motions. The damage rate of a dwelling adjusted is a wide the state of angle a session character of the dwelling adjusted in a wide trape of simulated gound motions. The damage rate and range were obtained from a stochastic computer model of dwelling adjusted in a wide trape of simulated gound motions. The damage rate of a performance and the state trape of session character of the dwelling adjusted in a wide trape of simulated gound motions. The damage rate of a performance and the performance are concuraged.		b.	Superstructure Fra Configuration (Sec	ming and tion B)]]	(Potenti	al minor structural	and finish damage	ge, earthquake	
Size (Section D) e. Local Site Conditions (Section E) Total Penalty Points (a to e): Structural Score = (100 – Total Penalty points from line above): Structural Score = (100 – Total Penalty points from line above): Seismic Hazard Score (from Section F): Seismic Performance Grade (from Table 5) Note: insert this grade, including + or -, if applicable in box on page 1 Seismic Performance Grade (from Table 5) Note: insert this grade, including + or -, if applicable in box on page 1 Note: Seismic Performance Grade (from Table 5) Note: Seismic Performance Grade (from From Table 5) Note: Seismic Performance Grade (from From Table 5) Note: Seismic Performance Grade (from From Table 5) Seismic Performance Grade (from Table 5) Note: Seismic Performance Grade (from From Table 5) Seismic Performance Grade (from Table 5) Seismic Performance Grade		C.	General Condition	Assessment	[]				pancy is likely)	
e. Local Site Conditions (Section E) Total Penalty Points (a to e): Structural Score = (100 – Total Penalty points from line above): Seismic Hazard Score (from Section F): Seismic Performance Grade (from Table 5) Note: insert this grade, including + or -, if applicable in box on page 1 Grade D, D+, D-: Poor Performer (Potential severe structure and finish damage requiring significant repairs prior to re-occupancy, earthquake damage ratio ³ of 20% – 10%, seismic retrofit measures are strongly encouraged) Note: insert this grade, including + or -, if applicable in box on page 1 Note: measures are structure and finish damage requiring significant repairs prior to re-occupancy, earthquake damage ratio ³ of 20% – 10%, seismic retrofit measures are strongly encouraged) Notes: 1. Dwellings are generally anticipated but not certain to have the described performance. The occupancy levels described in this table are generally consistent with the damage levels presented. 2. The anticipated seismic events are similar to those used to develop the earthquake ground-motion contours illustrated in the <i>International Residential Code</i> Seismic Design Category maps in Figures 2-1 to 2-4. 3. Reported earthquake damage ratios are expressed as a percentage of the replacement cost of the dwelling; The damage ratios are expressed as a percentage of the replacement cost of the dwelling adjusted to suit the stated structural second in any given you've make any of seismic hazard score. The stochastic analysis is discussed in detail in Appendix D.		d.	Nonstructural Elem Size (Section D)	nents, Age, and	I]	(Potenti	al moderate struct	ural and finish da		
Structural Score = (100 – Total Penalty points from line above): 2. Seismic Hazard Score (from Section F): 3. Seismic Performance Grade (from Table 5) Note: insert this grade, including + or -, if applicable in box on page 1 Grade D, D+, D-: Poor Performer (Potential severe structure and finish damage requiring significant repairs prior to re-occupancy, earthquake damage ratio of 20% – 100%, significant seismic retrofit measures are strongly encouraged) Note: insert this grade, including + or -, if applicable in box on page 1 Solution of the page ratio of 20% – 100%, significant seismic retrofit measures are strongly encouraged) Notes: 1. Dwellings are generally anticipated but not certain to have the described performance. The occupancy levels described in this table are generally consistent with the damage levels presented. 2. The anticipated seismic events are similar to those used to develop the earthquake ground-motion contours illustrated in the International Residential Code Seismic Design Category maps in Figures 2-1 to 2-4. 3. Reported earthquake damage ratio sare expressed as a percentage of the replacement cost of the dwelling. The damage ratio ranges were obtained from a stochastic computer model of dwellings adjusted to suit the stated structural access and subjects to have a 1500 likelihood of being accessed and propriet of the stated range of estimated ground model and propriet of the stated range of estimated ground model and propriet of the stated range of estimated ground and propriet of the stated range of estimated ground model and propriet of the stated and		e.	Local Site Conditio	ns (Section E)	[]	repairs,	earthquake dama	ge ratio ³ of 0%-5	0%, seismic	
Points from line above): 2. Seismic Hazard Score (from Section F): 3. Seismic Performance Grade (from Table 5) Note: insert this grade, including + or -, if applicable in box on page 1 Grade D, D+, D-: Poor Performer (Potential severe structure and finish damage requiring significant repairs prior to re-occupancy, earthquake damage ratio of 20% – 100%, significant seismic retrofit measures are strongly encouraged) Notes: 1. Dwellings are generally anticipated but not certain to have the described performance. The occupancy levels described in this table are generally consistent with the damage levels presented. 2. The anticipated seismic events are similar to those used to develop the earthquake ground-motion contours illustrated in the International Residential Code Seismic Design Category maps in Figures 2-1 to 2-4. 3. Reported earthquake damage ratios are expressed as a percentage of the replacement cost of the dwelling. The damage ratio ranges were obtained from a stochastic computer model of dwellings adjusted to suit the stated structural scores and subjected to a wide range of simulated ground motions. The damage ratios were chosen to have an 1/500 likelihood of being exceeded in any given year for the stated range of seismic heard score. The stochastic analysis is discussed in detail in Appendix D.			Total Pena	alty Points (a to e):				- ,		
2. Selsmic Hazard Score (from Section F): 3. Selsmic Performance Grade (from Table 5) Note: insert this grade, including + or -, if applicable in box on page 1 Grade D, D+, D-: Poor Performer (Potential severe structure and finish damage requiring significant repairs prior to re-occupancy, earthquake damage ratio of 20% – 100%, significant seismic retrofit measures are strongly encouraged) Notes: 1. Dwellings are generally anticipated but not certain to have the described performance. The occupancy levels described in this table are generally consistent with the damage levels presented. 2. The anticipated selsmic passing adjusted to suit the International Residential Code Seismic Design Category maps in Figures 2-1 to 2-4. 3. Reported earthquake damage ratios are expressed as a percentage of the replacement cost of the dwelling. The damage ratio ranges were obtained from stochastic computer model of dwellings adjusted to suit the stated and subjected to a wide range of similated ground motions. The claring adjusted of suit in the stated and subjected to a wide range of similated ground motions. The damage ratios were chosen to have a 1/50 illedithood of being exceeded in any given year for the stated range of seismic hazard score. The stochastic analysis is discussed in detail in Appendix D.		;					(Potenti	al moderate to ma	jor structural and	finish damage,	
Grade D, D+, D-: Poor Performer (Potential severe structure and finish damage requiring significant repairs prior to re-occupancy, earthquake damage ratio of 20% — 100%, significant seismic retrofit measures are strongly encouraged) Notes: 1. Dwellings are generally anticipated but not certain to have the described performance. The occupancy levels described in this table are generally consistent with the damage levels presented. 2. The anticipated seismic Design Category maps in Figures 2-1 to 2-4. 3. Reported earthquake damage ratios are expressed as a percentage of the replacement cost of the dwelling. The damage ratios are displayed to suit the stated after any of semistric computer model of dwellings adjusted to suit the stated arrange of semistric and stockhastic computer model of dwellings adjusted to suit the stated arrange of semistric and stockhastic computer model of dwellings adjusted to suit the stated arrange of semistric and stockhastic computer model of dwellings adjusted to suit the stated arrange of semistric and stockhastic computer model of dwellings adjusted to suit the stated arrange of semistric and stockhastic computer model of dwellings adjusted to suit the stated arrange of semistric and stockhastic analysis is discussed in detail in Appendix D.	2.	Sei	smic Hazard Score	(from Section F)			occupar	icy, earthquake da	amage ratio ³ of 10	0%-60%,	
Simplified Seismic Assessment Form Page 5	3.	(fro Not	m Table 5) e: insert this grade,	including + or -, if			Grade D, D (Potential Significated damage measure Notes: 1. Dwellings as performance consistent v 2. The anticipate earthquake Residential 3. Reported eareplacement from a stock structural stock stoc	2+, D-: Poor Perfor al severe structure nt repairs prior to ratio ³ of 20% — 10 es are strongly endere generally anticipatede. The occupancy level with the damage levels put ted seismic events are ground-motion contour Code Seismic Design Control of toost of the dwelling. The stic computer model of toost of the dwelling. The stic computer model of the damage ratios were added in any given year feded in any given year feded in services and subjected to a service and subjected	e and finish dama re-occupancy, early 20%, significant securaged) dibut not certain to have seen the couraged in this talloresented. similar to those used so illustrated in the Intercategory maps in Figure series as a he damage ratio range of dwellings adjusted to thosen to have a 1/50 or the stated range of or the stated range of the course of the stated range	ge requiring arthquake seismic retrofit we the described ole are generally to develop the arrational ares 2-1 to 2-4. percentage of the es were obtained to suit the stated ated ground to likelihood of seismic hazard	
	Sim	plifi	ed Seismic Assess	ment Form	.					Page 5	

H. Improving the Seismic Performance Grade

The Structural Score and Seismic Performance Grade may be altered as a result of seismic retrofit or by a more in-depth seismic evaluation of the dwelling and the site by a qualified licensed design professional. Guidance on these issues is provided in Chapter 8.

If seismic retrofit is being considered, the Structural Score could be increased (and the Seismic Performance Grade potentially increased) by retrofitting conditions that would allow the elimination or reduction in penalties, if any, for the following items:

Item	Retrofit Description	Points (circle applicable number)	Priority Retrofit
A-1	Provide continuous reinforced concrete foundation	4.2	
A-3	Provide foundation pads under interior posts	1.4	Yes
A-5	Add anchor bolts or retrofit anchors	1.7 4.6 10.0 15.0	Yes
B-2	Add bracing walls at dwelling exterior	3.2	
B-3	Install lighter roofing	1.6 3.5	
B-4	Install plywood/OSB or steel frame at garage front	3.0	Yes
B-5	Change exterior wall finish	1.0 2.5 3.5	
B-8	Improve bracing at perimeter walls below lowest floor	4.0 7.0 14.0	Yes
C-2	Repair cut structural framing	1.5	
C-3	Repair deteriorated stucco	1.0 2.0	
C-4	Repair deteriorated foundation	0.6 1.3	
D-1	Strap exterior chimney to roof and floors	1.0	
D-2	Provide bracing and flexible water and gas connections for water heater	1.0	Yes
D-3	Provide earthquake-activated gas shut-off valves	1.0	Yes
D-4	Anchor exterior stairs, deck and porch roof	1.0	Yes
E-3	Repair footing cracks	1.0 2.7	
E-6	Improve rain water routing away from foundations	1.3 2.6	Yes

Priority Retrofits: For this dwelling, the Structural Score can be increased by as many as "Priority Retrofit" points (insert sum of points for circled items in rows with "Yes" in Priority Retrofit column). This will increase Structural Score to (Section G, Item 1f Structural Score plus "Priority" retrofit points). This will result in an improved Structural Grade of (from Table 5, using improved Structural Score).
All Retrofits: For this dwelling, the Structural Score can be increased by as many as retrofit points (insert sum of ALL points for circled items). This will increase the Structural Score to (Section G, Item 1f structural score plus ALL points circled above). This will result in an improved Structural Grade of (from Table 5, using improved Structural Score).
DISCLAIMED

DISCLAIMER

THE APPLIED TECHNOLOGY COUNCIL AND FEMA MAKE NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ABILITY OF THE INSPECTED PROPERTY TO WITHSTAND EARTHQUAKES OR OTHER SEISMIC ACTIVITY, NOR AS TO THE COMPLETENESS OF THE FORM OR ITS ACCURACY, IN THAT MANY ASPECTS OF EARTHQUAKE ENGINEERING ARE UNCERTAIN. THE PURPOSE AND VOLUNTARY USE OF THIS FORM IS TO ASSESS WOOD-FRAME DWELLINGS FOR POTENTIAL DAMAGE IN FUTURE EARTHQUAKES. THE FINDINGS AND EXPLANATIONS ARE LIMITED TO SEISMIC VULNERABILITY OF A RELATIVE NATURE AND ARE NOT EXACT. THEY DEPEND ON THE DWELLING'S REGIONAL LOCATION AND A VISUAL INSPECTION OF THE DWELLING FROM ACCESSIBLE LOCATIONS, WITH NO EXPOSURE OF CONCEALED CONDITIONS, NO REVIEW OF CONSTRUCTION DOCUMENTS, NO MATERIALS TESTING, NO STRUCTURAL ANALYSIS AND NO SUBSURFACE INVESTIGATION.

WITH REGARD TO INFORMATION CONTAINED IN CAL EMA'S MYPLAN WEBSITE, THE STATE OF CALIFORNIA AND THE DEPARTMENT OF CONSERVATION MAKE NO REPRESENTATIONS OR WARRANTIES REGARDING THE ACCURACY OF LIQUEFACTION ZONES, LANDSLIDE ZONES, EARTHQUAKE FAULT ZONES OR FAULT TRACES, OR THE DATA FROM WHICH THESE ZONES AND FAULT TRACES WERE DERIVED. NEITHER THE STATE NOR THE DEPARTMENT SHALL BE LIABLE UNDER ANY CIRCUMSTANCES FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES WITH RESPECT TO ANY CLAIM BY ANY USER OR ANY THIRD PARTY ON ACCOUNT OF OR ARISING FROM THE USE OF THIS INFORMATION.

WITH REGARD TO THE INFORMATION CONTAINED IN THE U.S. GEOLOGICAL SURVEY WEBSITE, NO WARRANTY, EXPRESSED OR IMPLIED, IS MADE REGARDING THE ACCURACY OF THE DATA CONTAINED THEREIN. THE TOOL IS NOT A SUBSTITUTE FOR TECHNICAL SUBJECT-MATTER KNOWLEDGE.

Simplified Seismic Assessment Form