

# The California Inventory Project of the Concrete Coalition

Guidance Manual for Volunteers

November 2009

# Guidance Manual for Volunteers

- The following slides provide a brief introduction to volunteers in the California Inventory Project (numbers refer to slide #s)
  - Cities Where We Would Still Like a Survey 4
  - What to Count 6
  - Some Examples of What to Look for in terms of Older Concrete Buildings 12
  - Some Suggestions from Two Cities 15
    - Alameda
    - Burlingame
  - Entering Information Online 21
  - Our Volunteers, Techniques & Estimates 24

# Introduction

- Thank you for agreeing to volunteer for the California Inventory Project, which is a program of the Concrete Coalition. Background information on this program is available at [www.concretecoalition.org](http://www.concretecoalition.org)
- Volunteers in California are developing estimates for cities in the 22 highest seismic risk counties of the number of pre-1980 concrete buildings. We want to get an approximate estimate of how many such buildings exist in the state, to help us understand the size of the problem.
- The next step will be determining which small subset of these buildings are truly vulnerable in an earthquake—PEER, one of the partners in the Concrete Coalition, has a major research grant to determine critical deficiencies for these buildings and to suggest possible fixes.

# Cities Where we are Looking for Volunteers

- To sign up for a city, first check the website to see if a report already exists for the city. Then, send Marjorie Greene at EERI an email ([mgreene@eeri.org](mailto:mgreene@eeri.org)) and let her know which city you would like to volunteer for.
- See Table 1 on the next page. We are currently looking for volunteers in cities in the right hand column. However, if you are interested in a different city, please let us know. We'd be happy to accommodate you.

**CONCRETE COALITION CALIFORNIA INVENTORY PROJECT  
PROGRESS AS OF NOVEMBER 2009**

<b>COUNTY</b>	<b>Volunteer Survey Complete</b>	<b>Survey Started or Soon to Start</b>	<b>Concrete Coalition Would like Survey</b>
<b>Alameda</b>	Alameda Albany	<b>Hayward</b>	
	Berkeley		
	Emeryville		
	Fremont		
	Oakland		
	Piedmont		
	San Leandro		
<b>Contra Costa</b>	El Cerrito	<b>Pleasant Hill</b>	<b>Antioch</b>
	Richmond		<b>Concord</b>
	San Ramon		<b>San Pablo</b>
<b>Humboldt</b>	Eureka		
<b>Marin</b>	Fairfax		<b>Larkspur</b>
	Mill Valley		
	Novato		
	San Rafael		
<b>Mendocino</b>			
<b>Monterey</b>			<b>Monterey</b>
			<b>Pacific Grove</b>
			<b>Salinas</b>
<b>Napa</b>	Napa		
<b>San Francisco</b>	San Francisco		
<b>San Luis Obispo</b>			<b>San Luis Obispo</b>
<b>San Mateo</b>	Burlingame	<b>San Carlos</b>	<b>Belmont</b>
	Daly City	<b>Redwood City</b>	<b>Menlo Park</b>
	Millbrae	<b>San Mateo</b>	<b>San Bruno</b>
			<b>South San Francisco</b>
<b>Santa Clara</b>	San Jose	<b>Los Gatos</b>	<b>Mountain View</b>
	Los Altos		<b>Palo Alto</b>
	Milpitas		<b>Santa Clara</b>
			<b>Sunnyvale</b>
<b>Santa Cruz</b>			<b>Santa Cruz</b>
			<b>Watsonville</b>
<b>Solano</b>			<b>Vallejo</b>
<b>Sonoma</b>	Santa Rosa		<b>Petaluma</b>

# What Concrete Coalition Volunteers Need to Count (next 5 slides)

- Prepared by Dave McCormick and David Bonowitz

**If in doubt, count it and note that you have counted it.**

Concrete Building Types	Count Data	Optional – Other Databases Available <sup>1</sup>	Do Not Count Data
City Buildings	X		
County Buildings	X		
State Buildings		X	
Post Offices	X		
County and State Courthouses		X	
Federal Office Buildings and Courthouses		X	
Hospitals Regulated by OSHPD		X	
Utility-owned Bldgs. including Substations	X		
Grade K-12 Public Schools		X	
UC and CSU	X		
Community Colleges	X		
Private Schools and Colleges	X		
Military Bases and Facilities	X		

<sup>1</sup> Volunteers must indicate if they counted these building types.

Concrete Building Types	Count Data	Optional – Other Databases Available <sup>1</sup>	Do Not Count Data
Prisons	X		
Special Districts including Pump Stations and Buildings at Treatment Plants	X		
Churches	X		
Port Buildings	X		
Regional, County and City Parks	X		

<sup>1</sup> Volunteers must indicate if they counted these building types.



Concrete Building Types	Count Data	Optional – Other Databases Available	Do Not Count Data
Concrete Frame with Masonry Infill	X		
Wood-frame Residential on Conc. Podium	X		
1-story Cast-in-Place Concrete with Wood Roof (including walls with pilasters)	X		
Concrete Shear Wall with Steel Gravity Frame	X		
Mixed Construction <sup>2</sup>	X		
Tilt-ups			X
Dual System with Concrete Shear Wall <sup>3</sup>			X
Parking Garages	X		
Buildings Whose Concrete Elements are Limited to Fire Walls Between Sections			X
Buildings Whose Concrete Elements are Limited to Basement or Retaining Walls			X

<sup>2</sup> Includes horizontal additions of concrete as well as buildings with concrete lateral load systems in one direction only.

<sup>3</sup> Do not need to make exceptional efforts to verify whether a building has a dual system or not, but if you know, don't count it.

Concrete Building Types	Count Data	Optional – Other Databases Available	Do Not Count Data
Retrofitted Buildings <sup>4</sup>	X		
Abandoned Buildings	X		
Buildings in Areas Scheduled for Redevelopment	X		
Building-like Nonbuilding Structures <sup>5</sup>	X		
Nonbuilding-like Nonbuilding Structures <sup>6</sup>			X
Concrete Structures Supported on Piers or Wharfs over Water	X		
Buildings used for Storage – No Occupancy	X		

**Do not include concrete block buildings without concrete walls.**

<sup>4</sup> Obtain approximate retrofit date is possible.

<sup>5</sup> Includes campanile, substation and pumping stations.

<sup>6</sup> Includes silos, tanks, bridges, canopies, covered walkways and monuments.

# Reminder - Ultimate Goal

Your City	
Category	ESTIMATE
Total Number of Buildings	Possible Source: Assessors' Data
Total Number of Concrete Buildings	+ or - 10 –20 %
Pre-1980 Buildings	Possible Source: Assessors' Data
Pre-1980 Concrete Buildings	+ or - 10 –20 %

A range is ok—Also provide some documentation on how you arrived at your estimate—you can write a few sentences on the same page where you enter your contact information (see below for how to enter information online)

# Tips to Identify Concrete Buildings

- Walk behind the building – fewer architectural finishes
  - Look for form boards
- Look inside
- Look for elevated floor/cripple wall – probably wood
  - Vents
- Knock on wall
- Differentiate from tilt-ups
- Look for retrofits more typical of URM

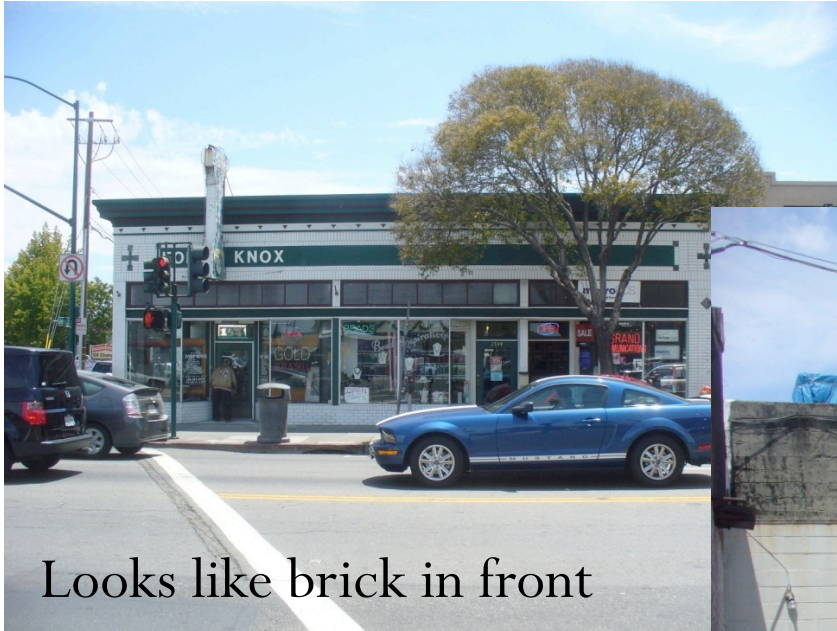


# Tilt-ups – Not Included in Count



Look for joints or plasters





Looks like brick in front

Concrete in the back



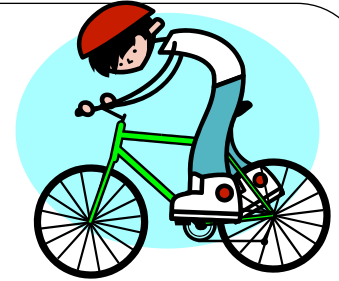
# Help from Various Cities

- At the beginning of this project there were a number of presentations made from “pilot cities”, with ideas for how to approach developing these estimates. These presentations are available at:

[http://www.concretecoalition.org/?page\\_id=291](http://www.concretecoalition.org/?page_id=291)

- On the next few pages, there are some tips from the City of Alameda (led by Dave McCormick), and Burlingame (led by Karl Telleen)

# Tips from Alameda Survey



- “Walk” the City (bike ride actually)
  - Focus in commercial districts and where larger buildings are located
    - Used knowledge of City
    - Alternate approach would be to use Google
- Contact Building Official and ask for help
  - Assessor data
  - Zoning map
  - Sanborn maps
- Visit library
- Iterate until satisfied





# Data Sheet Used

1538 Webster/Alameda Pizza +

<b>No. of Stories</b>	<b>1</b>
<b>Irregularities</b>	<b>Open front</b>
<b>Occupancy</b>	<b>Commercial</b>
<b>Adjacency</b>	<b>One side</b>
<b>Condition</b>	<b>No deterioration observed</b>
<b>Comments</b>	<b>Verified concrete</b>
	<b>Brick veneer</b>
	<b>Parapet bracing</b>



# Tips from Burlingame Survey

## Burlingame, CA

Use Google Earth to define city limits

Use Google Earth satellite image to visually identify areas of possible concrete buildings (i.e. exclude areas that are clearly wood single-family homes)

Print out satellite images of identified areas for field work

Drive through identified areas and determine typical use and construction types for each area; circle buildings that appear to be pre-1980 concrete (mark X on buildings that appear to be post-1980 concrete)

Estimate percentage of buildings in each area that are pre-1980 concrete (and post-1980 concrete)

Use Google Earth satellite image to count total number of buildings in identified areas; calculate numbers of concrete buildings in each area by multiplying total number of buildings by percentage concrete

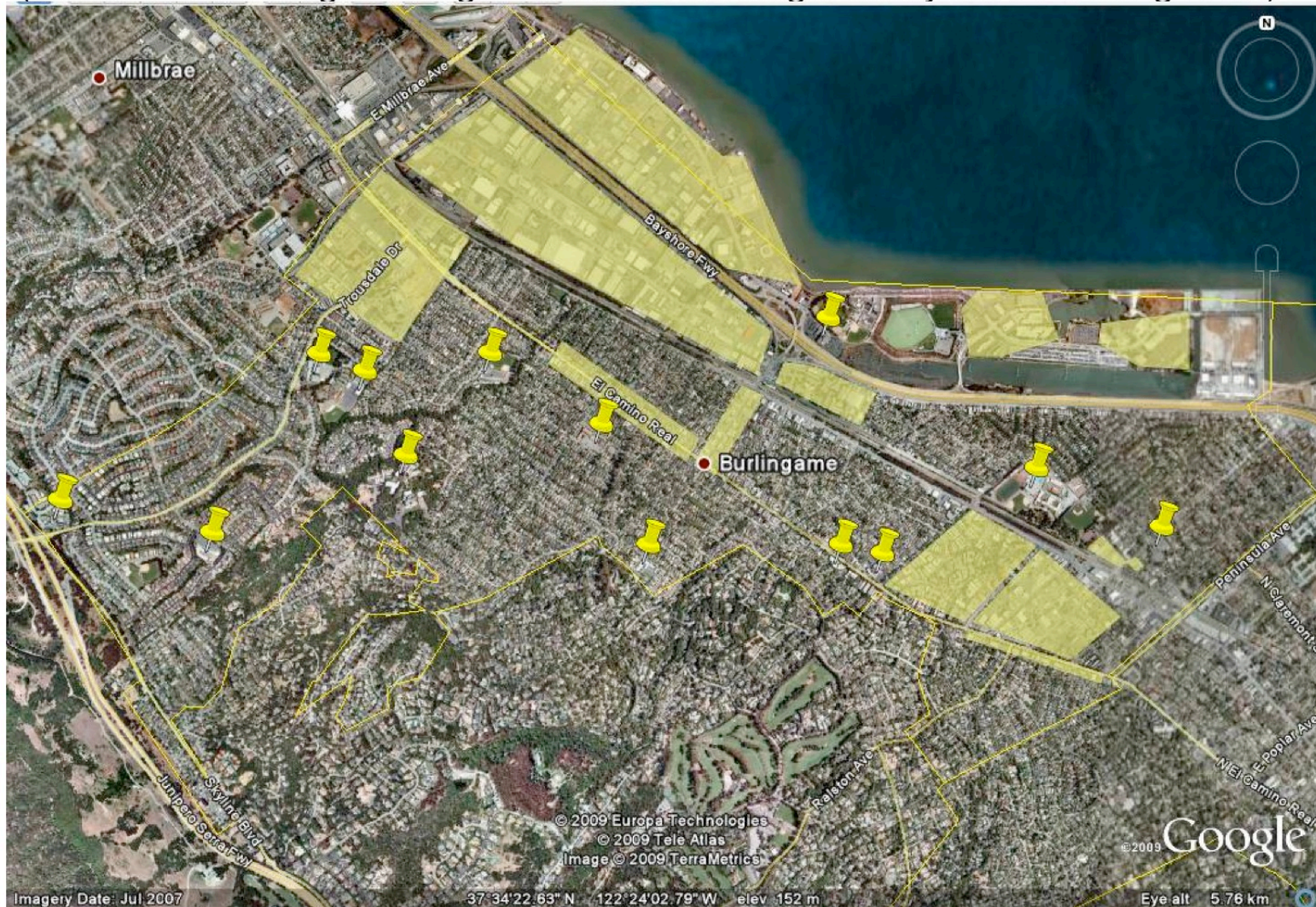
Estimate total number of buildings in uncounted areas (single-family residential) based on City of Burlingame web site data

Sum totals



# Tips from Burlingame Survey

Areas and locations of possible concrete buildings  
(based on scanning in Google Earth for non-single-family-home-looking roofs)



# Tips from Burlingame Survey

## Data

Burlingame buildings			
	Pre-1980 concrete	Post-1980 concrete	Total
Area 1:	60 (45%)	20 (15%)	130
Area 2:	40 (30%)	13 (10%)	130
Area 3:	3 (12%)	1 (4%)	25
Area 4:	15(20%)	1 (1%)	75
Area 5:	0	0	calc'd with other res.
Area 6:	18 (45%)	2 (5%)	40
Area 7:	2 (2%)	0	120
Area 8:	80 (40%)	20 (10%)	200
Area 9:	1 (4%)	0	25
Area 10:	4 (45%)	1 (10%)	9
Area 11:	5 (60%)	0	8
Other areas: Single-family res.	12	2	6700
<b>Total:</b>	<b>240 (3%)</b>	<b>60 (1%)</b>	<b>7500</b>

# Entering Your Information Online

- Once you have compiled basic information, you are ready to enter it online.
- Go to [http://www.concretecoalition.org/?page\\_id=260&page=login](http://www.concretecoalition.org/?page_id=260&page=login) (Or [www.concretecoalition.org](http://www.concretecoalition.org) and then click on CA Inventory Project and volunteer log-in page)
- User ID is name of city, all one word, lowercase
- Password is eeri123
- Once you are logged in, select Create New Report
- TO NEXT PAGE--



You should read the Introduction tab, and fill out three other tabs:

- Your information (contact information for the report authors)
- The Community Risk Profile Summary for your jurisdiction (same questions as on other side of this sheet)
- Contacts in the jurisdiction
- All other tabs are meant only to provide suggestions for how you might think about the problem in your community. [Our pilot cities used these questions and we decided through that process that most of these questions should be made supplemental only.]

Dave McCormick of SGH and SEAONC is the volunteer coordinator for Northern California.

## California Inventory Project

Thank you for agreeing to volunteer with our inventory project. This project is developing ESTIMATES of the numbers of pre-1980 concrete buildings in California. Volunteers are being asked to provide estimates for the following questions:

### Community Risk Profile Summary

County:    
City/Town:

Drop-down menu of counties and cities

Population:   
Year of Incorporation:   
Population Density:

### Data Sources (select all that apply)

Counts & Surveys:    
Other (describe):   
Plans and Histories:    
Field Work:    
Google Earth:

These answers will help us understand how you arrived at your estimates.

### Total number of buildings

Single Family Residences:   
Multi-Family Residences:   
Other Private Buildings:   
City Buildings:

Concrete Coalition will provide counts for public schools, CSUs, UC campuses, OSHPD-regulated hospitals and State of CA buildings

### AND / OR

Total number of pre-1980 buildings:   
Total Square Footage:   
Total Number of Pre-1980 Concrete Buildings:   
Total Square Footage of Pre-1980 Concrete Buildings:

Estimates can be one number or a range of numbers

### Attach File(s):

1.

Please attach files that will help us understand how you derived your estimates, and could be helpful if more detailed analyses are needed. Could include scanned notes, KMZ files, maps, etc.

What the community risk profile summary page looks like online

# Range of techniques used by volunteers, as of August 2009

	Sanborn Maps	Zoning Maps	Google Earth	Street Surveying	Building Officials	Tax Assessor's Data	Internet	Library Research	Engineering Firm Archives	Other Online Databases	Other
Alameda	X	X	X	X	X			X			
Albany	X		X	X	X						
Berkeley	X			X	X	X				X	
Burlingame			X	X			X				
Calabasas				X							X (familiarity with city)
Daly City	X		X	X			X				X (US Census; city-data.com; Daly City History Guild)
El Cerrito	X		X	X	X						
Emeryville	X			X							
Eureka		X		X	X						
Fairfax		X		X	X						
Fullerton		X	X	X	X				X		X (loss estimates)
Glendale	X	X	X	X	X						X (building permits)
Long Beach		X	X	X	X						
Mill Valley	X		X		X				X		
Millbrae			X	X	X						
Napa	X		X	X							
Navato		X	X	X			X				
Oakland	X		X								
Piedmont			X	X	X		X				
San Bernardino				X	X						
San Francisco	X		X	X							
San Leandro	X	X		X	X						
San Rafael	X		X		X						
Santa Monica		X	X	X	X	X					
Santa Rosa	X	X	X	X							
Solana Beach		X		X			X				X (local inquiries)



# Summary Data from Northern California Volunteer Cities as of Oct 09

<b>CITY</b>	<b>REPORTED PRE-80 CONCRETE BUILDINGS</b>
Alameda	140-160
Albany	36
Berkeley	275
Burlingame	240
Daly City	30
El Cerrito	22
Emeryville	44
Eureka	10
Fairfax	18
Mill Valley	13
Millbrae	52
Milpitas	0
Napa	14
Novato	18
Oakland	1300
Piedmont	8
Richmond	35-45
San Francisco	3000
San Jose	363
San Leandro	57
San Rafael	53
San Ramon	0
Santa Rosa	55

# Our Northern CA Volunteers to Date

CITY	VOLUNTEERS
Alameda	Dave McCormick, Marguerite Bello
Albany	Afshar Jalalian, Ayse Celikbas
Berkeley	Joan McQuarrie, Heidi Faison
Burlingame	Karl Telleen, Kurt Lindorfer
Daly City	Eric Borchers, Nick Alexander
El Cerrito	Afshar Jalalian, Ayse Celikbas
Emeryville	Afshar Jalalian, Ayse Celikbas
Eureka	Randy Girouard
Fairfax	Jason Powers
Fremont	Carlos Sempere
Millbrae	Heinz Kuo
Mill Valley	Dennis Fagent
Milpitas	Azlan Ezaddin
Napa	Chris Jonas

# Our Northern CA Volunteers to Date

CITY	VOLUNTEERS
Novato	Jared Barrilleaux
Oakland	Meghann Rand; Mark Gilligan; Dmitry Ozeryansky; Ayse Celikbas; and Lawrence Burkett
Piedmont	Mohamed Talaat
Redwood City	Mehri Ansari
Richmond	Mark Moore, Janette Mae Gonzales
San Francisco	Stephen Kadysiewski; Marguerite Bello; David Bonowitz; Ayse Celikbas; Valerie Martin; Simin Naaseh; Meghann Rand; Refugio Rochin; Karl Telleen
San Jose	Carlos Sempere, Daniel Espino
San Leandro	Janise Rodgers
San Rafael	Luke Wilson
San Ramon	Jeff Williams
Santa Rosa	Chris Warner, Mark Moore

If you have questions, any of the following folks can help:

Craig Comartin, Project Director: [ccomartin@comartin.net](mailto:ccomartin@comartin.net)

Dave McCormick, volunteer coordinator:

[DLMcCormick@sgh.com](mailto:DLMcCormick@sgh.com)

David Bonowitz, data curator (integrating our data with the statewide databases): [dbonowitz@att.net](mailto:dbonowitz@att.net)

Marjorie Greene, EERI staff: [mgreene@eeri.org](mailto:mgreene@eeri.org)