

A Disaster-Resistant University

Building Resilience at UC Berkeley

Sarah Nathe

SAFER PROGRAM

University of California, Berkeley

Goals for UCB Disaster Resistance

- Prevent life loss and injury from structural, nonstructural and utilities failures in an earthquake.
- Protect assets.
- Sustain operations after a disaster, or resume instruction and research within 30 days of a major disaster.
- Be a resource for local community.

Elements of Resilience

- Understand Risk—significant hazards
- Disaster Response—planning, training and exercising
- Hazard Mitigation Initiatives—reducing potential losses
- Continuity of Operations—planning, exercising



UCOP

Community organizations
e.g. ARC

Disaster-Resistant University

City of Berkeley

State of California

Alameda County

Federal Agencies

Disaster Response
Planning,
Training
&
Exercising

Continuity of Operations
Planning
&
Exercising

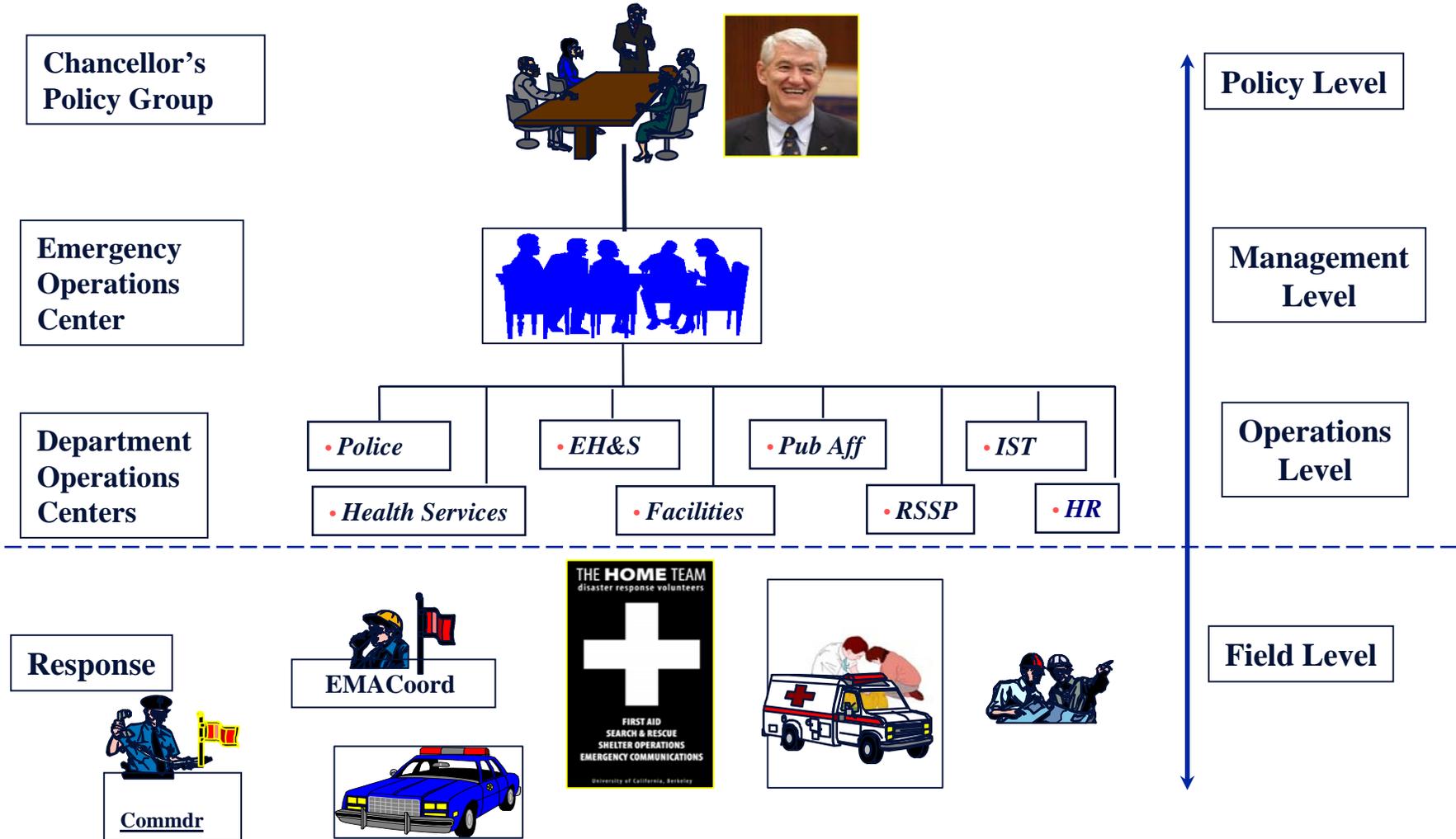
- Hazard Mitigation (a.k.a. loss reduction)**
- SAFER Program
 - Disaster-Resistant University Program
 - EH&S programs: Q-Brace et al.
 - IS&T: new computer facility, UC Backup, hotsite
 - Vegetation Management

Risks for UC Berkeley

- Earthquake
- Eco/animal rights terrorism
- Civil disturbance
- Wildfire
- Building fire
- Power failure
- Active shooter

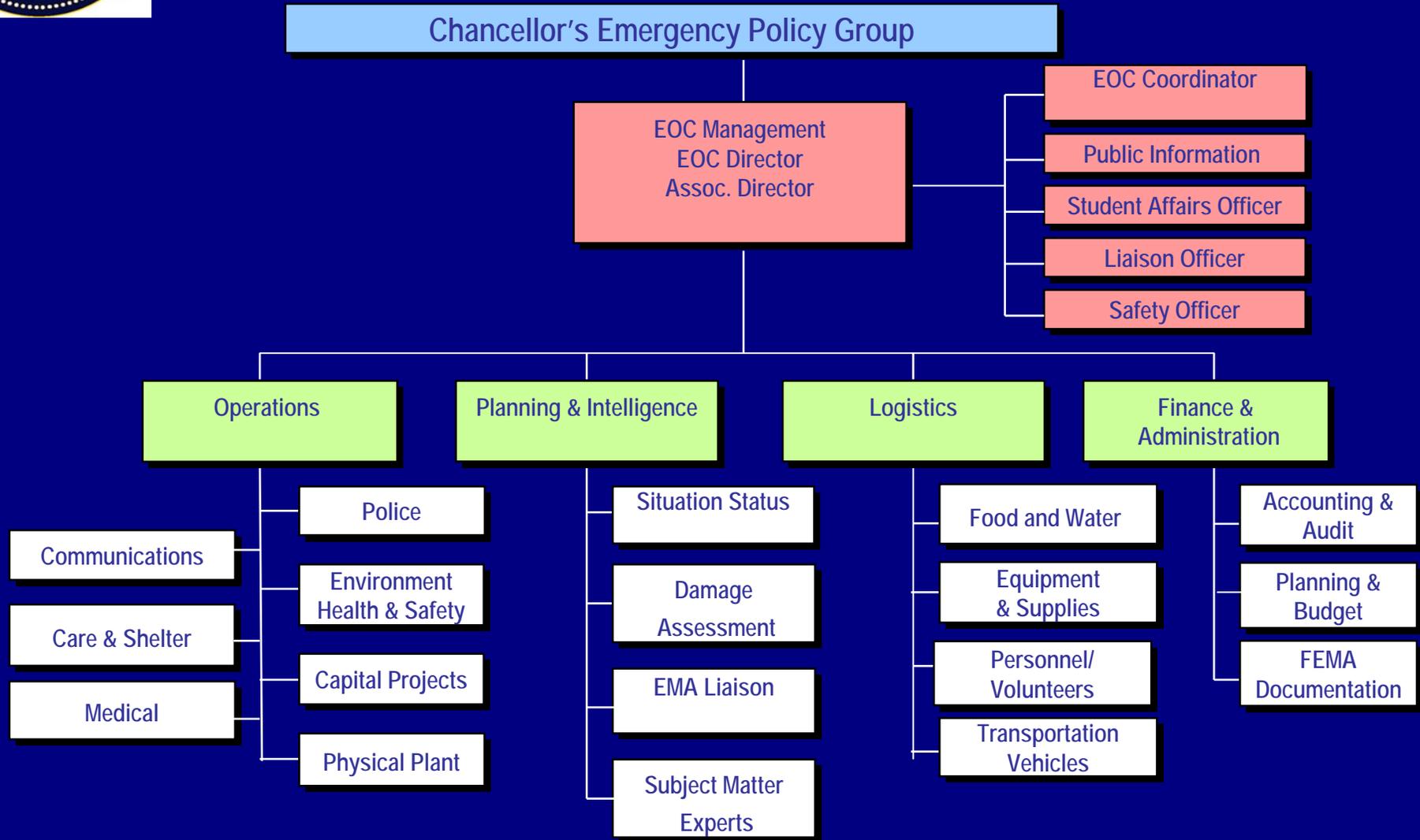


Campus Disaster Response Program





UC Berkeley Emergency Operations Center



Alerting & Warning System

When you hear campus warning sirens:

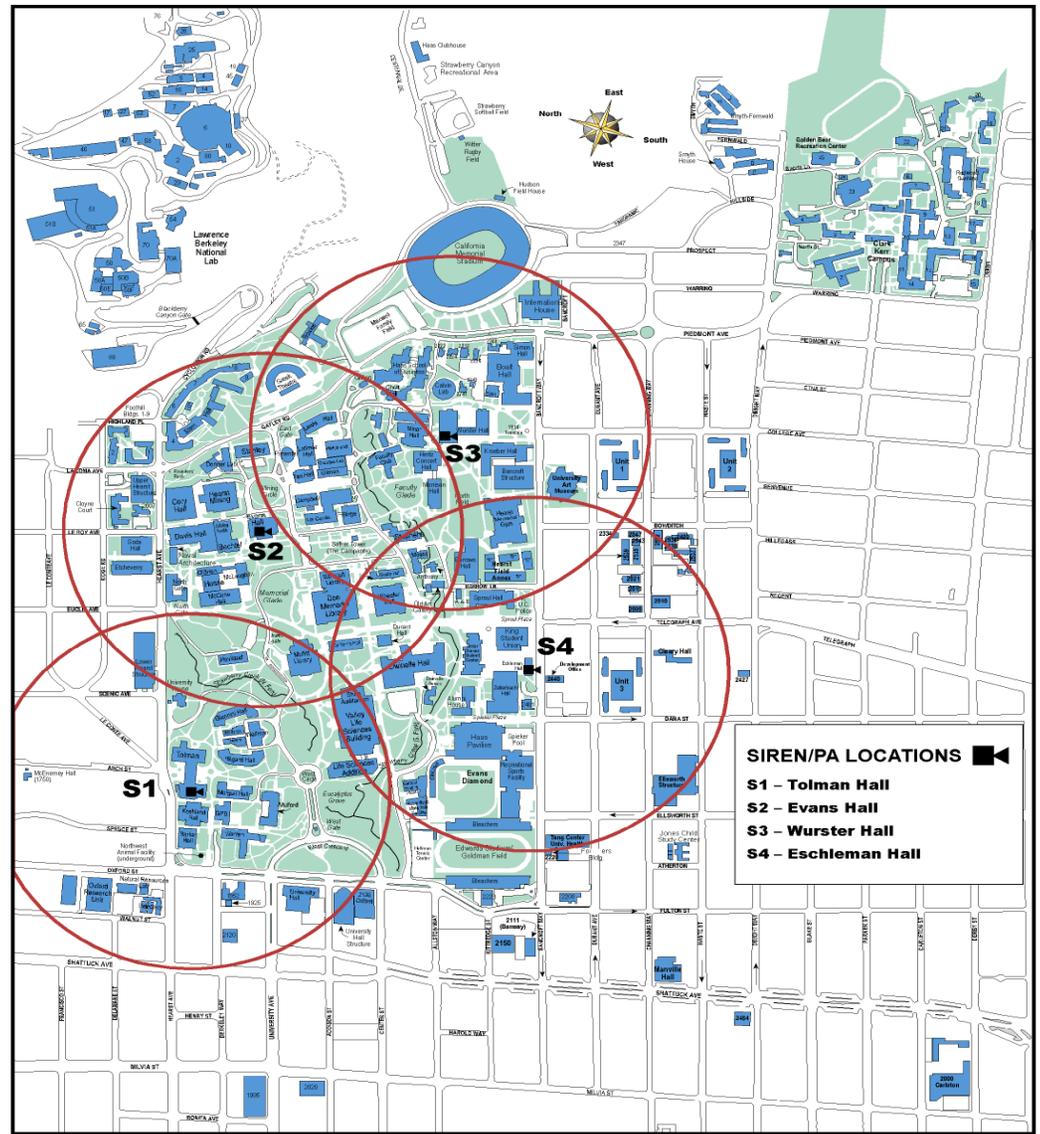
1. **Shelter** Go inside.
2. **Shut** Shut all doors and windows
Call 1-800-705-9998
or
<http://emergency.berkeley.edu>
3. **Listen** Tune to KALX 90.7 FM



**SCHEDULED SIREN TESTING:
1ST WEDNESDAY OF THE MONTH AT NOON**



University of California, Berkeley Siren/PA Locations



Annual training and exercising

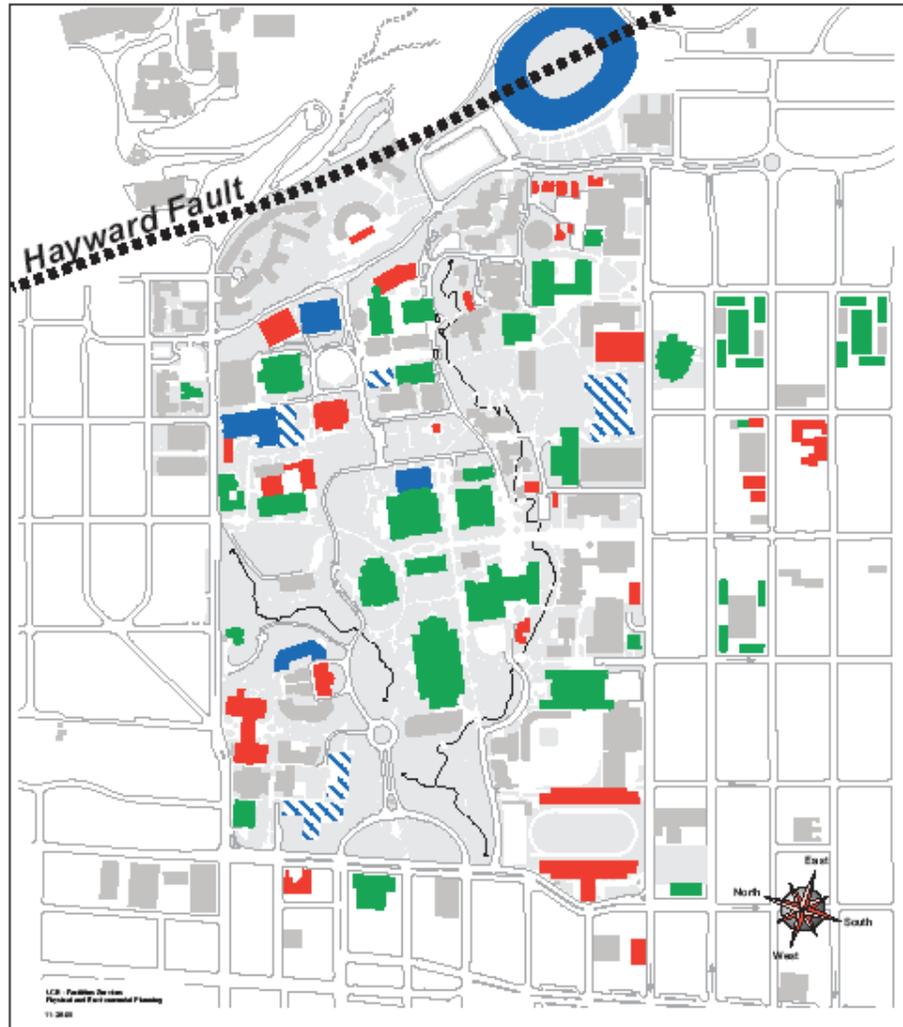


Hazard Mitigation

Seismic Action plan for Facilities Enhancement and Renewal

- Comprehensive Building Survey, Summer 1997:
 - 27 % of total space poor or very poor
- Creation of SAFER Program, Fall 1997
- Commitment of capital budget to seismic safety:
 - Estimated \$1.2 billion over 20-30 years
- Of the square footage identified as poor or very poor, 30% remains.

SAFER Accomplishments Buildings Retrofit or Replaced



Completed
buildings

Buildings in
process

Still in planning
stage

The Disaster-Resistant University Program Projects

- Strengthening buildings
- Developed:
 - Comerio loss estimation study of UCB
 - Strategic risk management plan for UCB
 - Guidelines for other research universities
 - Comerio/PEER nonstructural loss reduction studies of UCB buildings; new details
- 2005 funding for web-based business resumption planning tool

EH&S Programs

- Q-Brace Program—nonstructural hazards (contents) loss reduction.
 - Since 1999, \$ 273,000 in matching funds (from Chancellor) generated \$556,000 worth of work.
 - New technical assistance (engineer) for labs
 - New state-of-the-art details:
<http://www.ehs.berkeley.edu/qbrace/qbrace.guid.07.pdf>
- Lab and shop inspections
- Fire Marshal code enforcement
- Post-disaster building inspection protocol:
<http://ocp.berkeley.edu/node/50>

Information Technology Programs

- Warren Hall—the new facility and its capacities.
Server farm.
- UCBackup for data protection:
<http://ist.berkeley.edu/ucbackup>
- Hotsite
 - Payroll
 - Remote site applications: mutual agreements with other UCs for additional critical apps, e.g., student records, accounts receivable, financial aid
- PeopleLocator to track students, faculty, staff:
<http://peoplelocator.berkeley.edu>

Vegetation Management



1991

Special report • Exclusive photos • How to help

Oakland Tribune

FIRESTORM

Eastbay blaze guts hundreds of hill homes

Hill residents watch dance of destruction

An eyewitness account — on the ground in hell

By [Name] and [Name]

It was a scene of pure hell. The fire had reached a point of no return, and the flames were dancing wildly, consuming everything in their path. The smoke was thick and black, and the heat was unbearable. The fire had started in a small structure, but it had spread rapidly, and now it was a full-blown firestorm. The flames were reaching hundreds of feet into the air, and the fire was consuming everything in its path. The fire had reached a point of no return, and the flames were dancing wildly, consuming everything in their path. The smoke was thick and black, and the heat was unbearable. The fire had started in a small structure, but it had spread rapidly, and now it was a full-blown firestorm. The flames were reaching hundreds of feet into the air, and the fire was consuming everything in its path.

Chaparral Hill – from Grizzly Peak Blvd



2001-2005

11,050 trees removed
85 acres treated
\$385,000 + \$102,000 PG&E

2006 – 2009 (Projected)

23,000 trees for removal
110 acres for treatment
\$822,000 (\$576K FEMA)

Continuity Planning

OVERVIEW

- **Continuity Planning** — putting elements in place that will allow for operations to continue or start quickly following an unplanned interruption
- **FOCUS** of C.P. at UCB — teaching, research, public service
- **GOAL** — to resume teaching, research and necessary support services within 30 days of an interruption
 - closure longer than 30 days could lead to: loss of faculty, students, preëminence

STRATEGIC OUTCOMES of C.P. –

- Heightened awareness
- Heightened preparedness

SPECIFIC OUTCOMES of C.P. –

- The (departmental) business resumption plan
 - *“How can we do our work in a changed environment?”*
- List of action items
 - *“What should we do NOW or SOON in order to make that possible?”*
- HR guidance for post-disaster:
<http://hrweb.berkeley.edu>
- Vehicle for annual tabletop exercises

The Tool: <http://obr.berkeley.edu/BCPT.html>



THE Berkeley CONTINUITY PLANNING TOOL

to continue our
teaching, research, and service mission
through any disaster

Begin

[UC Berkeley Home](#) | [Contact Us](#)

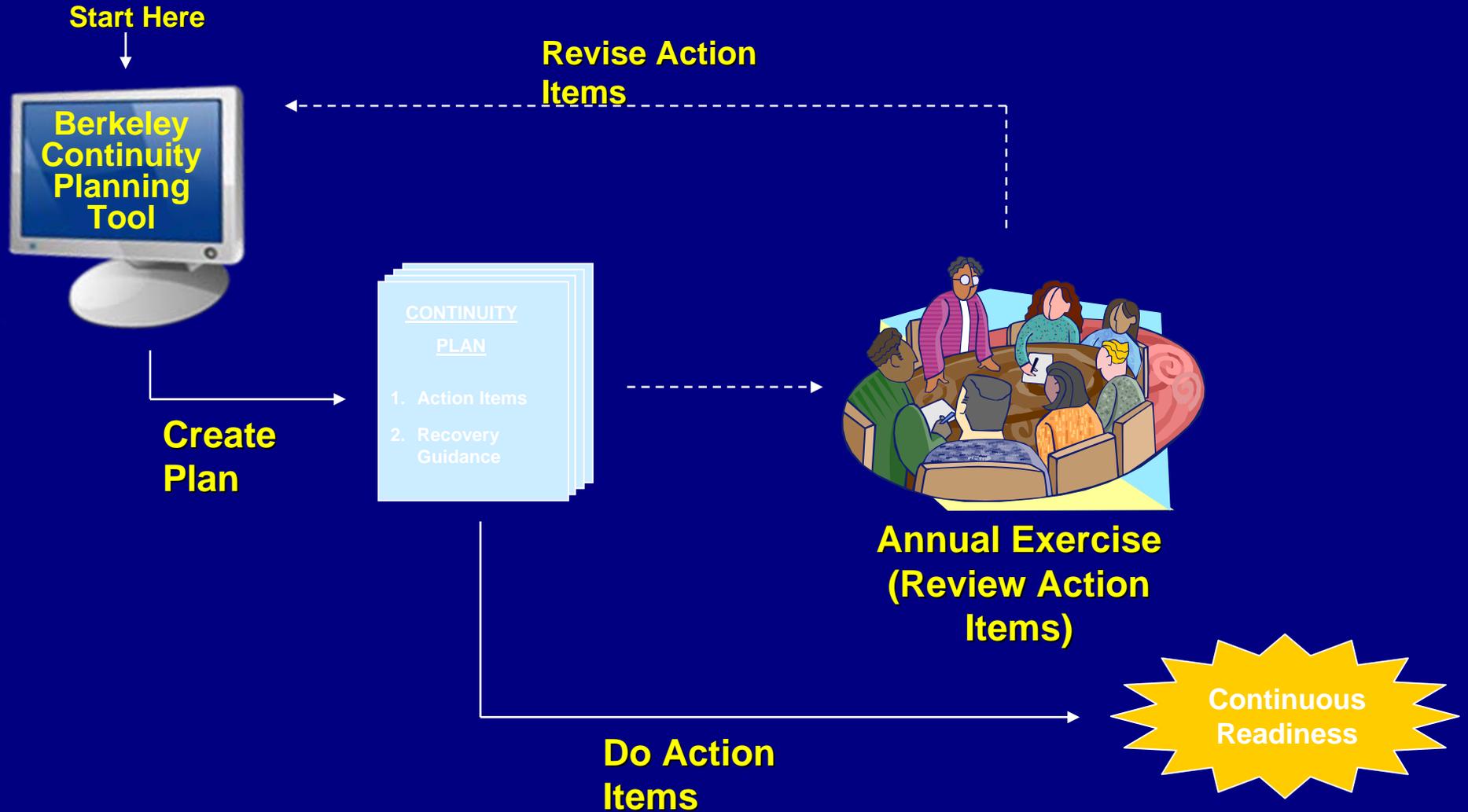
Copyright 2006-07 UC Regents. All rights reserved.

This site is best viewed at screen resolution of 1024x768 or higher.

Progress to Date

- Currently, 234 campus units (67% of total) are engaged in the planning effort: 102 units have completed their plans and 132 have plans in progress.
- There are 300-400 units on campus that should do continuity planning. We arbitrarily use 350 units as the base.

An ongoing process:



Legend:
Referral of Action Item



The outcome of continuity planning: ACTION ITEMS (mitigation or preparedness)

