

# ***BE PREPARED!***



## **RESIDENTS GUIDE FOR FLOOD, DEBRIS FLOW, AND EROSION CONTROL DURING SEVERE WEATHER**

Revised December 2015



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# HOW STORMS CAN AFFECT YOUR PROPERTY



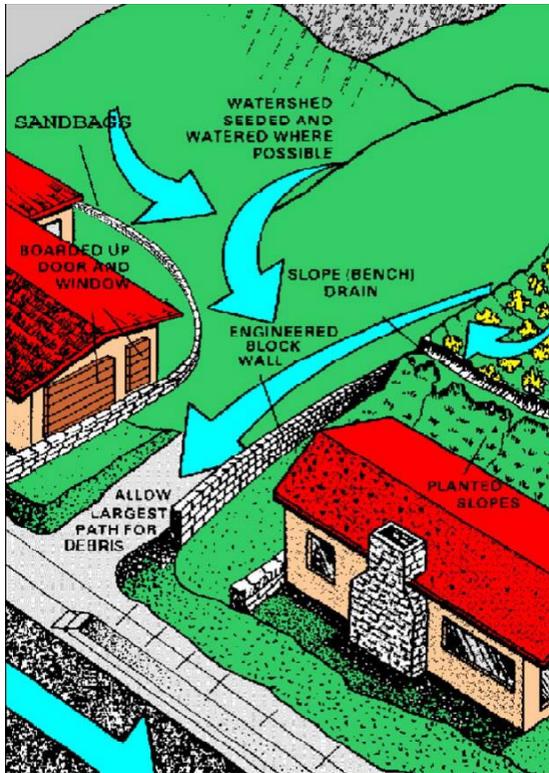
*UNPROTECTED HOMES*

## I. RAIN STORMS

Heavy and sustained rainfall from winter storms cause millions and sometimes billions of dollars in property damage annually. Planning and preparing against these disastrous effects, especially in hillside areas, can reduce or eliminate damage to homes and property.

This pamphlet provides homeowners and residents some useful methods for controlling the damage possible from such storms.

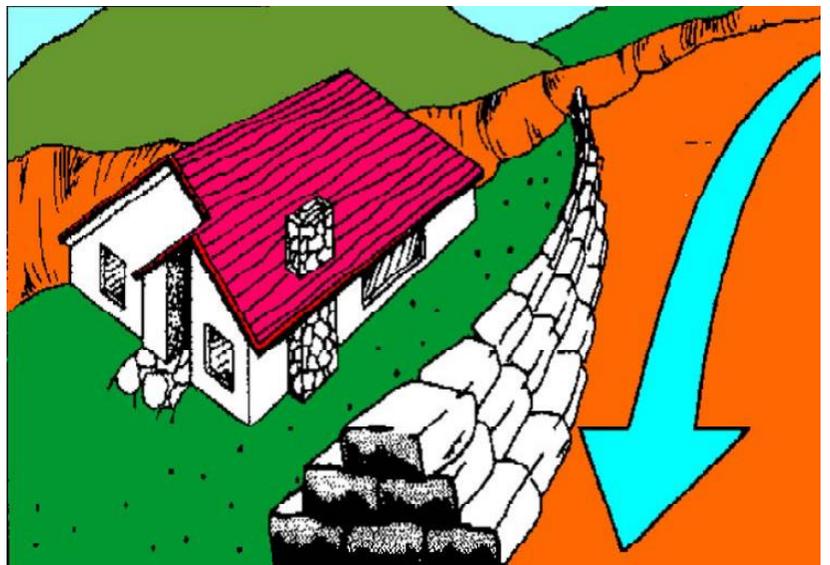
# POTENTIAL FOR DESTRUCTION



*HOMES PROTECTED FROM MAJOR DAMAGE*

Rain falling on barren or sparsely planted slopes has great destructive potential. When rain strikes a bare slope, it washes and carries off the soil surface with the runoff. This erosive effect becomes destructive as the soil surface becomes saturated and the flow increases in volume and velocity. Generated mud and debris flows can move along the slope and create deep furrows in its surface. Under prolonged rainfall, the slope may even become saturated resulting in a slope failure or landslide.

Mud and debris flows not only damage slopes, but also have sufficient momentum to damage structures in their path, at times resulting in severe injuries and fatalities to building occupants. Mud and debris flows consist of mud, brush, and trees that are moved by storm water.



*MUD AND DEBRIS FLOW DIVERGED BY SANDBAGS*

These flows may range in degree of severity from small mud slides to large landslides moving with destructive force down to the bottom of the slope. In either case this is of serious consequence to the property owner.

## **HOW TO PREPARE**

Early planning and continued maintenance reduce the damaging effects of storms. As the rainy season approaches, serious consideration should be given to determining what problems might arise and what procedures will be required to meet them. Once the mud and debris flows start it may be too late to plan for protection or gather supplies; put your plans into action when weather reports predict storms.

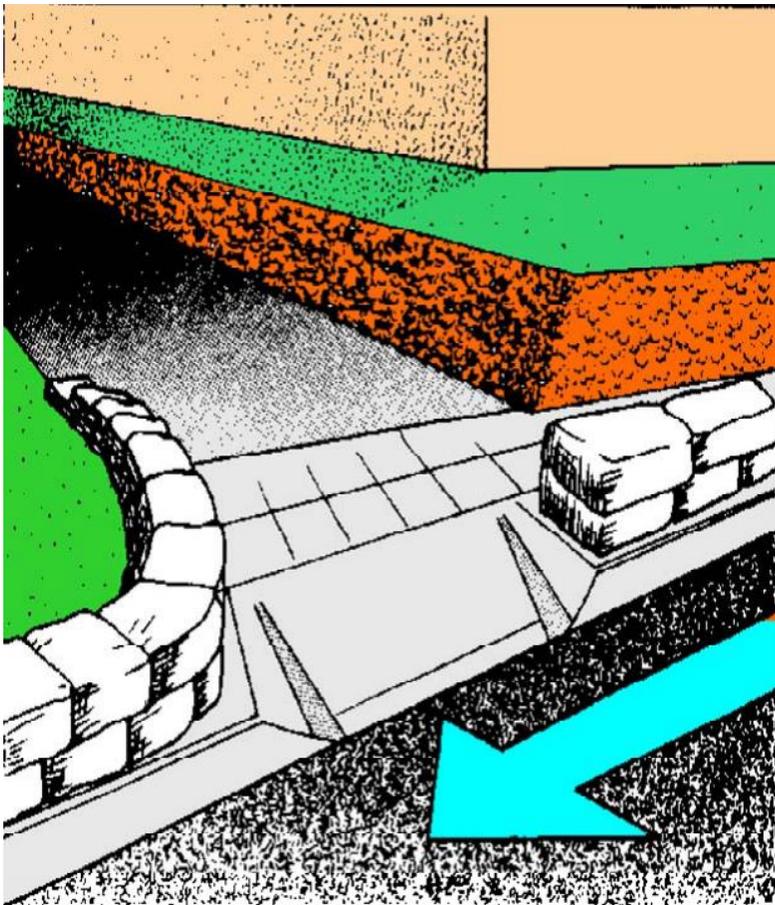
Tools such as shovels, picks, sledge hammers, and ordinary garden and carpentry tools should be easy to get to. Construction materials consisting of plastic sheeting, burlap bags, sand, lumber, and plywood should be on hand, and flashlights, lanterns, work clothes and rain gear should be readily available. While preparation can be as simple as a few well placed sandbags and some plastic sheeting, having these supplies available now means less time in getting ready and more time for installing temporary protection devices.

Sandbags can effectively and inexpensively control mud-flow. They are made of materials readily available from your local building materials supply yard or fire station, and are easily installed using household or garden tools. Properly placed sandbags re-direct storm and debris flow away from structures. Sandbagging is most effective in diverting flows and should not be used as a dam to contain mud-flows. Large sloped areas are especially prone to failure during and after prolonged rainfalls.

The use of plastic sheeting provides an excellent method of temporarily protecting these and other problem slopes from saturation during storms.

Both sandbags and plastic sheeting are temporary devices. These materials are not durable and will quickly deteriorate over time. In areas where erosion or mud slides are a re-occurring problem, permanent structures or devices need to be considered. Consulting with a design professional and your local nursery can result in effective and attractive long term debris and erosion control. Be sure to check with your local Building and Safety office for any permit and code requirements, especially when earth retaining structures are planned.

*USE SANDBAGS TO DIVERT  
FLOWS BUT DO NOT USE  
THEM TO ACT AS A DAM*



## **II. WHEN THE STORM IS UPON YOU**

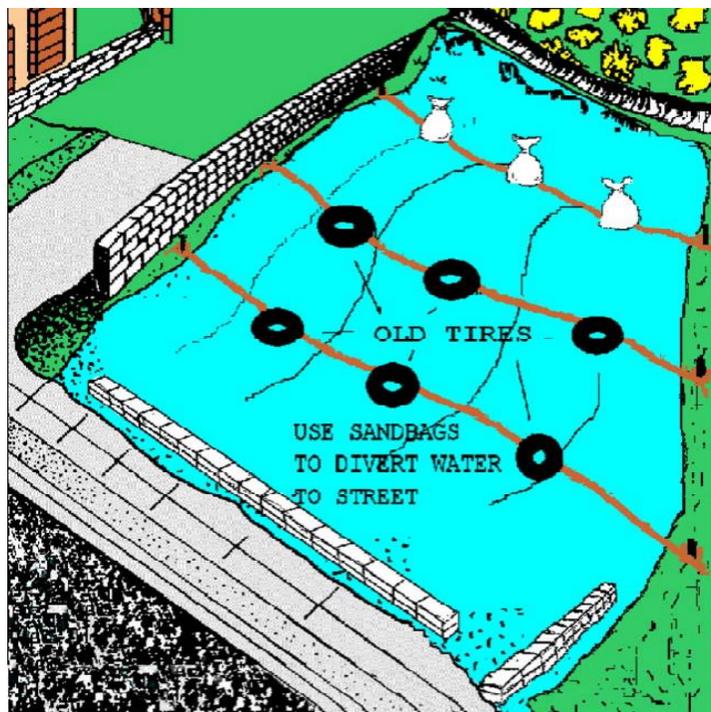
The following recommendations can greatly help reduce the damaging effects of an imminent storm. Please review these carefully now, as you may not have time when the storm is approaching.

### **PLASTIC SHEETING**

Spread plastic sheeting across the slope and use stakes at the corners to secure it to the slope. Drive stakes along the edge at 10 to 12 foot intervals (steeper slopes may require closer spacing). Tie ropes to the stakes across the slope face and attach sandbags or old tires to the ropes to hold the plastic in place. On very steep slopes the plastic should be anchored at the top and secured at the bottom by placing weights on the corners. Make sure the plastic is not punctured or torn.

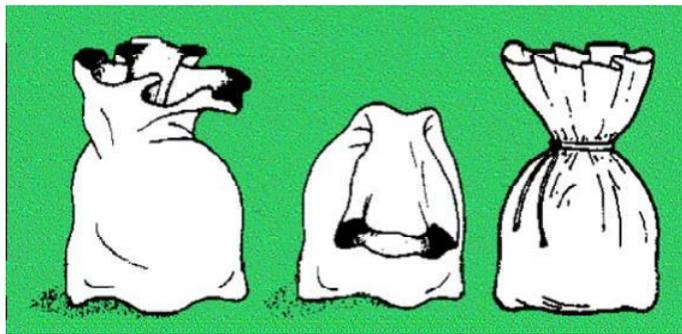
Make sure that water running off the plastic sheeting is directed to the street or other non-erosive surface such as a paved terrace drain, driveway, or walkway. Avoid any concentration of flow onto the slopes that would cause erosion.

### *PLASTIC SHEETING TO MITIGATE SATURATION*



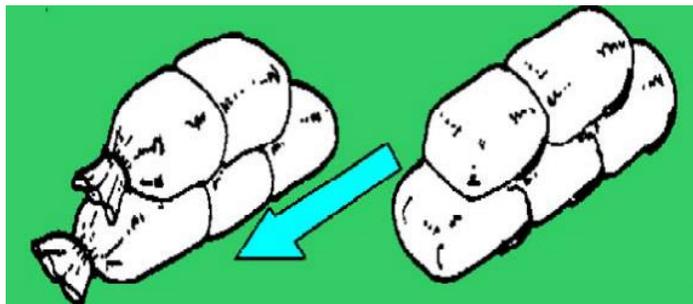
## SANDBAGS

Sandbags should be used to divert flows away from improvements and onto the street or a natural watercourse by creating a channel or path for debris. Between storms be sure to remove any residual debris and/or silt from these channels to prevent dangerous build-up. Remember, the purpose of the sandbags is to divert debris flows, not to act as a dam. Improperly placed sandbags may cause more damage than if they had not been used at all.



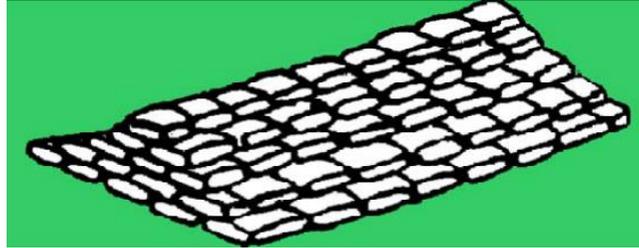
*FILLING SANDBAGS*

Fill sandbags with common construction or playground sand. Do not dig into a hillside as this may cause more problems than it will prevent. Fill the sand bags half full, gather the top and tie with heavy string or cord. If string is not available, carefully fold the top over. In either case the opening in the flap should be in the direction of flow.



*SANDBAGS DIVERTING WATER FLOW*

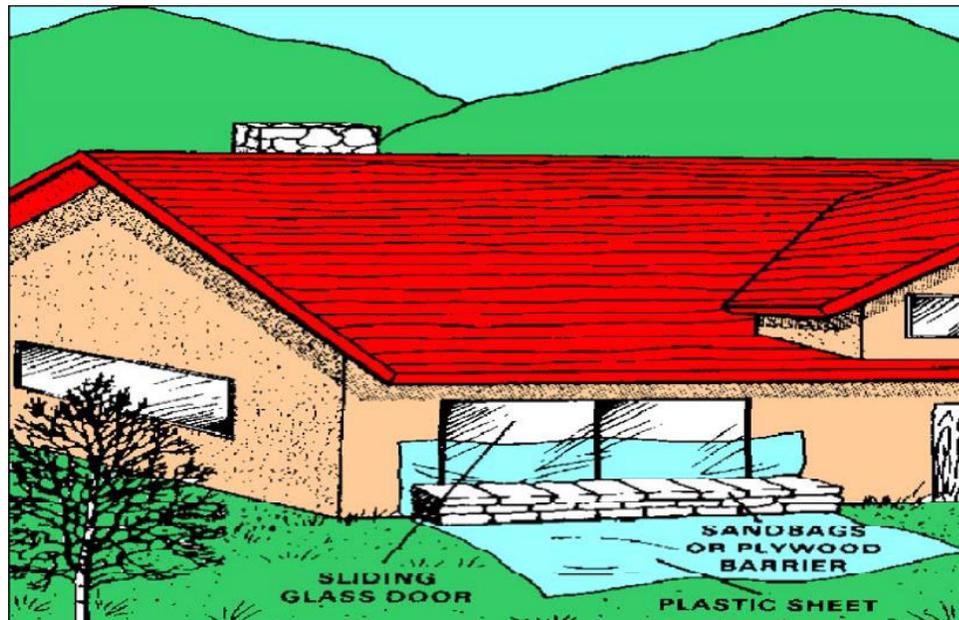
Lay the sand bags so that each course overlaps the previous one and stamp down firmly into place before laying the next course. Stack the sand bags no more than three courses high. You may stack higher if the base is at least as many bags wide as it is high.



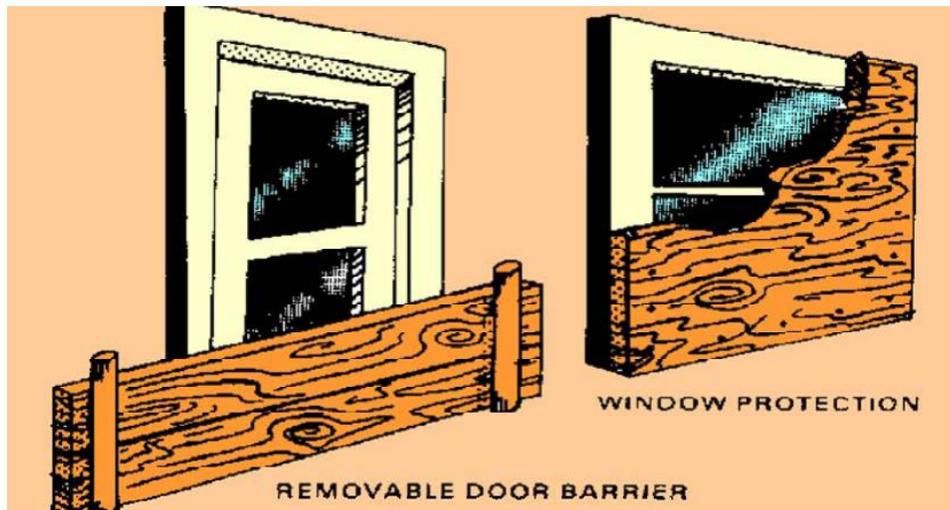
*SANDBAG PYRAMID*

## PLYWOOD

Plywood placed over doors and windows is an effective way of preventing mud and debris from entering through these openings (see figure 10). By placing plastic sheeting against the opening before covering with plywood, water intrusion can be further reduced. You may use an inexpensive plywood at least 3/8" thick and overlap the door or window several inches. Stack sandbags or use 2"x4" braces against the plywood to secure it.



*SANDBAG BARRIER*



*PLYWOOD WINDOW BARRIER*

### **III. MAINTENANCE**

The owner of a hillside property is responsible for maintaining all yard and slope areas. Maintenance is of greatest importance during the period between a destructive summer fire and the rainy season. Every effort should be made to restore damaged hillside ground cover in order to stabilize the property through the rainy season.

The owner or person responsible for maintaining the yard areas should periodically inspect the slopes for potential failures. While this is especially true just prior to the rainy season, checking earlier in the year will allow time for improvements or repairs. The following recommendations may prevent slope failure during heavy rains:

1. Make sure all drainage is directed to the street or other water course by approved devices, such as drainage channels, ground gutters, paved swales, or yard or area drains.
2. Check all drainage devices and remove any accumulated dirt and debris. In some areas, drainage devices may cross property lines or be in what is considered common areas. Don't let conditions on your property create a problem for those next to you. Cooperate with your neighbors and work together to prevent problems for both of you.
3. Catch basins, grates and underground drainage piping are frequently blocked by silt, weeds and debris. Inspect and clean them regularly to make sure they are free flowing.

4. Roof gutters and down spouts may become damaged or clogged with leaves, twigs, and silt. Inspect and clean them to ensure that they are free flowing. If your roof shows signs of wear, have it checked by a licensed roofing contractor. Do not allow the down spouts to discharge directly onto the soil, use splash stones, driveways or walkways to divert runoff to the street or other watercourse.
5. Concrete swales around the perimeter of a structure, are designed to direct water away from it. Make sure that they are not cracked or broken to the point that they lose their effectiveness. Keep them clean and repair any fractures that may allow water to penetrate them.
6. Building sites that were developed since the mid-fifties have berms of densely compacted earth at the top of slopes to prevent water from running over the slope. Make sure that these are maintained in good condition.
7. Check slopes for large amounts of loose soil, rocks, brush, or debris and remove any that may become dislodged during storms. Loose brush can act as a dam for silt. During storms it can wash down slopes causing damage or blocking drainage devices. If the brush is firmly rooted, it should be allowed to remain until after the rainy season which will help support the soil.
8. Large rocks and boulders may become loose during storms. Consult with a licensed Geologist or Soils Engineer in order to determine the best method for correcting this condition
9. Don't let water run wild. During heavy rains and storms,

inspect the slope for erosion and correct any problems immediately. If unusual cracks, settling, or earth slippage start, don't wait, act immediately.

10. Inspect any retaining walls that may affect your property. If there is any listing, leaning, overturning, or cracking, contact a licensed engineer immediately.

11. When landscaping, avoid disrupting the flow patterns established when your property was originally developed. When in doubt, consult a licensed Geologist or Soils Engineer.

For further questions regarding these or other related matters, please call the Department of Building and Safety at 3-1-1 or (213) 473-3231.

**Investigation of Drainage Deficiencies & Clogged Catch Basins:** Use the MyLA311 app or call 311 to report issues like items blocking storm drains or other issues that might cause a problem during a storm. You can also use 3-1-1 to request investigations of drainage deficiencies.

## **SAND BAG LOCATIONS**

Los Angeles residents - especially those in foothill and low-lying communities, are encouraged to prepare their properties in advance of coming rainstorms.

In an effort to help, the Los Angeles Fire Department is making ready-to-fill sandbags available at all Neighborhood Fire Stations. Sand is available at several fire stations and convenient community locations.

Property owners and residents should not solely rely on these sources, as high demand may rapidly strap resources and create spot shortages.

While all Fire Stations have sand bags, sand is also available at the following Fire Stations:

<b>FIRE STATION</b>	<b>ADDRESS</b>	<b>PHONE</b>
3	108 N. Fremont Avenue, Los Angeles 90012	(213) 485-6203
5	8900 S. Emerson Avenue, Los Angeles 90045	(213) 485-6205
18	12050 Balboa Boulevard, Granada Hills 91344	(818) 756-8618
19	12229 Sunset Boulevard, Los Angeles 90049	(310) 575-8519
21	1192 E. 51st Street, Los Angeles 90011	(213) 485-6221
23	17281 Sunset Boulevard, Pacific Palisades 90272	(310) 575-8523
24	9411 Wentworth Street, Sunland 91040	(818) 756-8624
26	2009 S. Western Avenue, Los Angeles 90018	(213) 485-6226

<b>FIRE STATION</b>	<b>ADDRESS</b>	<b>PHONE</b>
27	1327 N. Cole Avenue, Los Angeles 90028	(213) 485-6227
28	11641 Corbin Avenue, Northridge 91326	(818) 756-9728
36	1005 N. Gaffey Street, San Pedro 90732	(310) 548-2836
38	124 E. "I" Street, Wilmington 90744	(310) 548-7538
41	1439 N. Gardner Street, Los Angeles 90046	(213) 485-6241
43	3690 S. Motor Avenue, Los Angeles 90034	(310) 840-2143
44	1410 Cypress Avenue, Los Angeles 90065	(213) 485-6244
47	4575 Huntington Dr. South, Los Angeles 90032	(213) 485-6247
64	118 W. 108th Street, Los Angeles 90061	(213) 485-6264
71	107S Beverly Glen Boulevard, Los Angeles 90024	(310) 575-8571
74	7777 Foothill Boulevard, Tujunga 91042	(818) 756-8674
77	9224 Sunland Boulevard, Sunland 91352	(818) 756-8677
78	4041 Whitsett Avenue, Studio City 91604	(818) 756-8678
82	1800 N. Bronson Avenue, Los Angeles 90028	(213) 485-6282
84	21050 W. Burbank Boulevard, Woodland Hills 91367	(818) 756-8684

<b>FIRE STATION</b>	<b>ADDRESS</b>	<b>PHONE</b>
85	1331 W. 253rd Street, Harbor City 90710	(310) 548-7585
86	4305 Vineland Avenue, North Hollywood 91602	(818) 756-8686
87	10124 Balboa Boulevard, North Hills 91343	(818) 756-8687
88	5101 N. Sepulveda Boulevard, Sherman Oaks 91403	(818) 756-8688
91	14430 Polk Street, Sylmar 91342	(818) 756-8691
94	4470 Coliseum Street, Los Angeles 90016	(213) 485-6294
97	8021 Mulholland Drive, Los Angeles 90046	(818) 756-8697
99	14145 Mulholland Drive, Beverly Hills 90210	(818) 756-8699
106	23004 Roscoe Boulevard, West Hills 91304	(818) 756-8606
108	12520 Mulholland Drive, Beverly Hills 90210	(818) 756-8608
109	16500 Mulholland Drive, Los Angeles 90049	(818) 756-8609

**LOS ANGELES FIRE DEPARTMENT INFORMATION  
FOR TTY USERS – 3-1-1 OR 7-1-1**

#### **IV. REDUCE THE CHANCE OF FLOODING IN YOUR NEIGHBORHOOD**

Even in the best of weather, **urban runoff pollution** is a major threat to the health of our local bays, but in stormy weather, the threat increases significantly.

**Urban runoff pollution** is all the materials that flow from our yards and streets into the catch basins at the end of the block, and from there directly to local bays through the 3000 miles of local channels and underground drains designed to carry stormwater quickly and safely out of our neighborhoods.

Urban runoff pollution can include: all litter and trash; pet droppings; chemicals dripped and spilled from our vehicles; chemicals like fertilizers and pesticides washed from our lawns; chemicals (like motor oil) deliberately dumped in storm drains - in short, anything on the street.

In dry weather, as much as 100 million gallons of water runs through the storm drains and into the bay - water from lawn overwatering, from washing cars, from construction sites, from industrial discharges, etc. - carrying with it urban runoff pollution. These pollutants can linger in the storm drains, attracting vermin and smelling up the neighborhood. When flushed through, they cover our beaches, can make human beachgoers sick, and can harm or kill the creatures that live in our bays.

Wet weather compounds the situation, because billions of gallons can run through the storm drains in a single storm. Heavy rains sweep everything before them; sometimes clogging storm drains with debris, causing neighborhood flooding, or carrying pollution to the Santa Monica and San Pedro Bays.

Here are the best ways to keep urban runoff pollution from clogging our storm drains and flooding our neighborhoods. In the hours before a storm arrives:

1. Pick up all litter and loose objects in your yard and on your property. Anything loose can be washed away. This includes yard clippings, branches, etc., that can clog storm drains. Dispose of yard clippings in your City-issued green container.
2. Check your own yard drains to make sure they aren't clogged. If they are, clean them and properly dispose of the debris. Also, look at the catch basin at the end of your street. If it's clogged, report it to the City at 1-800-974-9794. **For TTY users, please use 3-1-1 operator for assistance.**
3. Sweep all dirt from driveways and walkways and throw it in the City-issued black trash containers. Even dirt is a pollutant when carried into the bay. Never hose down sidewalks or walkways.
4. Don't fertilize or use pesticides on your lawn and garden before a storm. These chemicals are washed off the lawn into the street and storm drains.
5. Don't store paints or any other toxic chemicals outdoors. Only store them in containers with tight-fitting lids.
6. Always clean up pet waste and flush it down the toilet, or throw it, wrapped, in the black container.



## LOS ANGELES ANIMAL SERVICES



### V. EMERGENCY PREPAREDNESS FOR YOUR PETS AND SERVICE ANIMALS



**Preparing your pet and service animal, yourself and family for a disaster starts now. Evacuations and Disasters can strike at any time. Being prepared and ready to go will help save your family and pets and service animals.**

1. Ensure that all your pets and service animals have a current City of Los Angeles License. (Dog/Equine)
2. All animals should be micro-chipped. (Remember to update/verify info at least once a year)
3. All animals should be up to date on their vaccinations.
4. Keep a copy of the following documents:
  - a. License and Vaccination records.
  - b. Micro-chip information.

- c. Photos of your pets or service animals (showing your pet or service animal from the front, back, sides) and a photo of your pet with you.
- d. Pet Owner contact information (contact phone numbers and/or e-mail addresses).
- e. Names and phone numbers of friends and relatives that are allowed to care for your pet or service animal.
- f. Any pertinent information on behavior, feeding, medication, and commands being used.

In addition, combine all the information, including the photos, and keep a copy of it:

- a. Off site. On-line storage is highly recommended.
  - b. In a conspicuous place in your home (tape to a portable kennel).
  - c. With a friend/family member you have listed as an emergency contact.
5. All animals need to be trained to get used to a portable kennel. If a disaster strikes or you have to evacuate, your animal must be comfortable to use a portable kennel. All of your animals should have access to a portable kennel. The kennel should be large enough for the animal to completely sit, stand upright, lie down, and extend all their limbs. Cat kennels should have extra space to house a litter box.
6. Animal leashes and harnesses should be close by and ready to go.
7. Equip each kennel with the animal(s)' information and your personal information. Tape current vaccination records and other pertinent information to the kennel so it is readily

available in an emergency situation. Boarding facilities will accept pets, but only if you have proof of current vaccinations.

8. Get a rolling backpack and store emergency supplies for your animals: pre-packaged food for several days, treats, medication, toys, and blankets. Make sure that perishable supplies (food and other perishable items) are replaced every three months.
9. Identify boarding facilities inside and outside of the City of Los Angeles. Make arrangements ahead of time, check out the facility, and identify requirements needed for boarding.
10. Check out hotels/motels in and outside the City of Los Angeles. They might accept pets during emergency situations. Pets inside kennels are accepted in most places.
11. Make emergency arrangements with friends/family members in and outside the City of Los Angeles.
12. If you have not done so, introduce yourself and your pets or service animal to your neighbor. If a disaster strikes and you are not home, your neighbor might be the only contact person that can assist with evacuating your pet(s). Remember: Some animals are not comfortable with strangers.
13. Large Animal Owners – Plan ahead:
  - a. Have a surplus of feed available. Don't let yourself get down to the last bale when disaster strikes.

- b. Have an emergency three day supply of water available (use drums or barrels).
- c. Train your horse to load into a trailer.
- d. Identify alternate ways that you can trailer and/or walk your horse(s) to nearby stables or other designated safety zones.
- e. Pre-arrange for boarding at stables outside the City of Los Angeles, if possible. Los Angeles Animal Services Department can only provide evacuation sheltering for equines at Los Angeles Fire Department identified mandatory evacuation areas. You, as the animal owner, are responsible to plan ahead and find alternative stables that can accept your animal in case of evacuation orders.

**REMEMBER: DON'T LEAVE YOUR PETS BEHIND – TIME TO TRAIN AND MAKE ARRANGEMENTS IS NOW!**

## **LOS ANGELES ANIMAL SERVICES**

**CONTACT US AT: (888) 4LA-PET1 / (888) 452-7381**

Check our website at: [www.laanimalservices.com](http://www.laanimalservices.com) to find your new best friend or to search for your lost pet.

Information on events, special promotions and so much more, check our Facebook page at:  
[www.facebook.com/LAAnimalServices](http://www.facebook.com/LAAnimalServices)

## **VI. COMMUNITY EMERGENCY RESPONSE TEAM (CERT) PROGRAM**

Phone: (213) 839-9840 / TDD: (213) 473-7704  
Email: [lafdcert@lacity.org](mailto:lafdcert@lacity.org) Web Page: [www.cert-la.com](http://www.cert-la.com)

### **LEVEL 1 SYLLABUS**

#### **CLASS 1 - INTRODUCTION, DISASTER AWARENESS**

Registration

Introduction

Earthquake Threat in Southern California

Personal & Family Preparation

Nonstructural Hazard Mitigation

#### **CLASS 2 - DISASTER FIRE SUPPRESSION**

Fire Chemistry

Fire Extinguisher Use

Utility Control

Creative Firefighting Techniques

Hazardous Materials / Placarding

#### **CLASS 3 - DISASTER MEDICAL OPERATIONS (SESSION 1)**

Recognizing Life-Threatening Emergencies Treating Life-Threatening  
Emergencies Triage

#### **CLASS 4 - DISASTER MEDICAL OPERATIONS (SESSION 2) AND MULTI-CASUALTY INCIDENT**

Head-to-Toe Evaluation

Treating Non-Life-Threatening Emergencies

Treatment Area Management

## **CLASS 5 - LIGHT SEARCH & RESCUE OPERATIONS**

Evacuation

Search Techniques

Rescue Methods / Cribbing

## **CLASS 6 –TEAM ORGANIZATION & DISASTER PSYCHOLOGY**

Developing a Response Team Incident Command System “ICS”

Psychological “Size-Up”

## **CLASS 7 – TERRORISM & HOMELAND DEFENSE**

History of Terrorism

Do’s and Don’ts During a Terrorist Act

Homeland Defense Tips

## **PROGRAM OVERVIEW**

The Los Angeles Fire Department's **CERT Program** (free of charge) was developed because of the need for a well-trained civilian emergency work force. The CERT Program provides for community self-sufficiency through the development of multifunctional response teams who act as an adjunct to the city's emergency services during major disasters. When emergencies happen, CERT members can give critical support to first responders, and provide immediate assistance to victims.

CERT members can also assist with non-emergency projects that help improve the safety of the community. Through this unique program, people from community organizations, business and industry, and city employee groups will become CERT members. They work as team members and perform as individual leaders by directing untrained volunteers in the initial phase of an emergency.

To become a CERT graduate, you must complete the 17-1/2 hour course

(Level 1). Level 1 training is taught by professional experienced firefighters and paramedics. The course is followed by continuing education programs, including biannual refreshers.

We encourage our Level 1 graduates to enhance their education. Following the completion of Level 1, the CERT Program also offers Level 2 and Level 3 sequential training through the American Red Cross (ARC). CERT Level 2 includes 12 additional training hours in: “Introduction to Disaster Services”, “Mass Care”, and “Shelter Operations & Shelter Simulations”. Currently, Level 2 classes are free. Check your local ARC’s or CERT’s website for available classes and dates.

After you have completed Levels 1 & 2 training, Level 3 is a 50 plus- hour “Emergency Response Advanced First Aid” course. A Level 3 CERT member will have completed nearly 80 total hours of training and be capable of effectively assisting the needs within the community. Contact the ARC for dates and cost for this course.

Currently, CERT teams are regionally located within the city according to the Fire Department battalion they live in or work in. Opportunities are available to join and train with a team and potentially become a CERT Battalion Coordinator. Currently, Battalion Coordinators have completed at least Levels 1 & 2 training. These Battalion Coordinators work closely with CERT team members and the Fire Department to develop a capable “response-ready” team.

If you are a licensed amateur radio operator (Ham) who desires to serve the Department and the community, the ham radio will back up the Department's 800-MHz radio system and provide radio support to CERT members, their families, and their Battalion Coordinators. Contact the Los Angeles Fire Department’s City Radio Officer at (213) 978-3536.