Dover Shores CERT
Team Meeting Agenda 3/08/18

- Neighborhood watch update - traffic issues
- Dover Shores CERT web site update
- Planning for potential spring drill - other communities are planning to drill Saturday 4/28
- Communications review - radios and Zello
- Faraday shield and Geiger counter demo
- Personal continuity - how would you recover if your house was destroyed?

Upcoming events:

- 3/22 Thursday - All Hands Meeting - Library Friends Room - 6:30PM
- 3/24 Saturday - Drill the Skills - Station 7 - 9:00AM
- 4/7 Saturday - CERT Mutual Aid Class - Station 7 - 9:00AM
- 4/10 Tuesday - CERT CPR Class - Station 7
- 4/28 Saturday - Neighborhood Drill - 9:00 AM

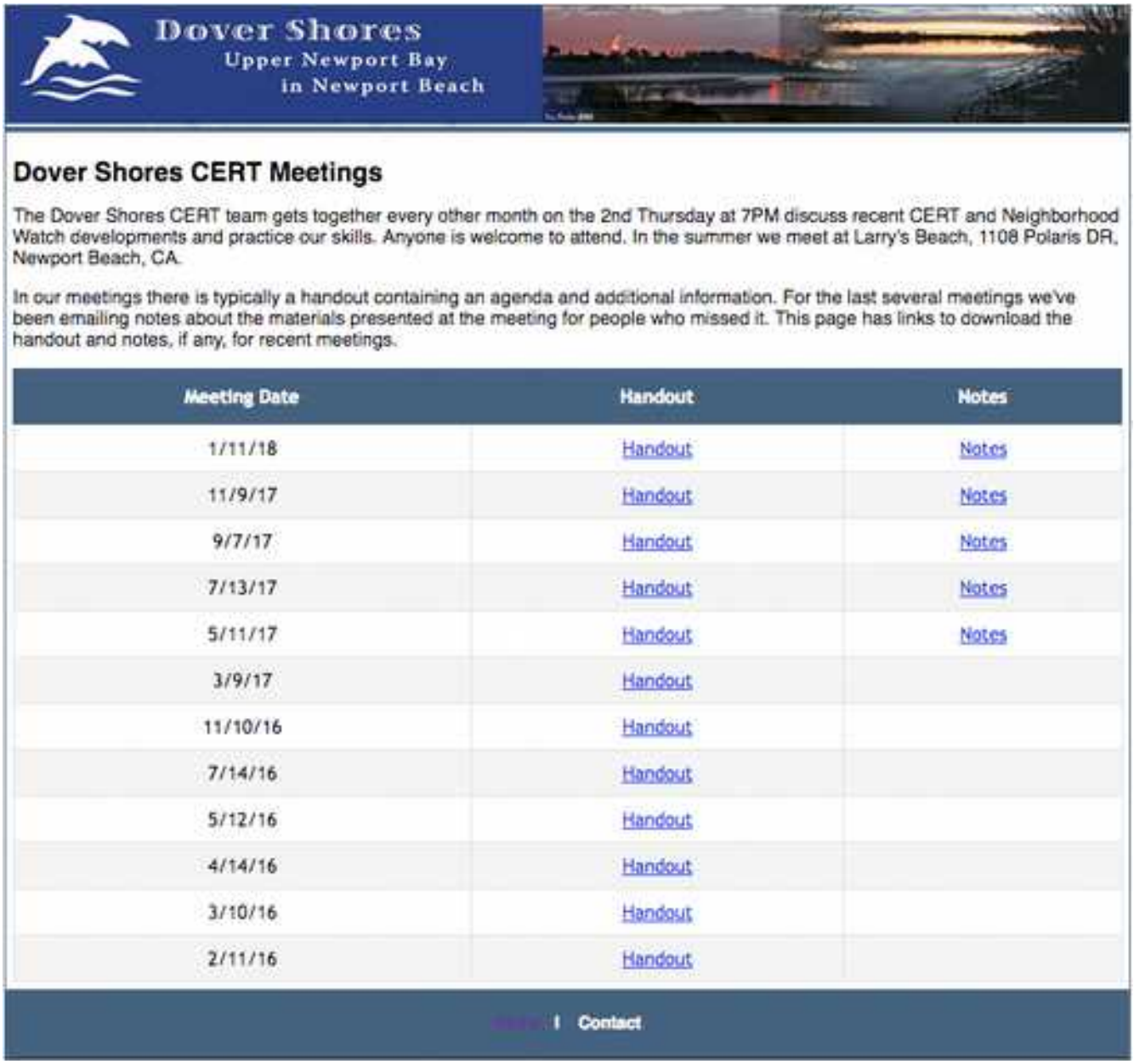
Next meeting: Thursday 5/10 7:00 PM - Larry's Beach

Neighborhood Watch - Traffic

Figure 1 - Truck doesn't make Galaxy curve 2/5

Dover Shores CERT Web Site Update

https://dovershorescert.org



Dover Shores
Upper Newport Bay
in Newport Beach

Dover Shores CERT Meetings

The Dover Shores CERT team gets together every other month on the 2nd Thursday at 7PM discuss recent CERT and Neighborhood Watch developments and practice our skills. Anyone is welcome to attend. In the summer we meet at Larry's Beach, 1108 Polaris DR, Newport Beach, CA.

In our meetings there is typically a handout containing an agenda and additional information. For the last several meetings we've been emailing notes about the materials presented at the meeting for people who missed it. This page has links to download the handout and notes, if any, for recent meetings.

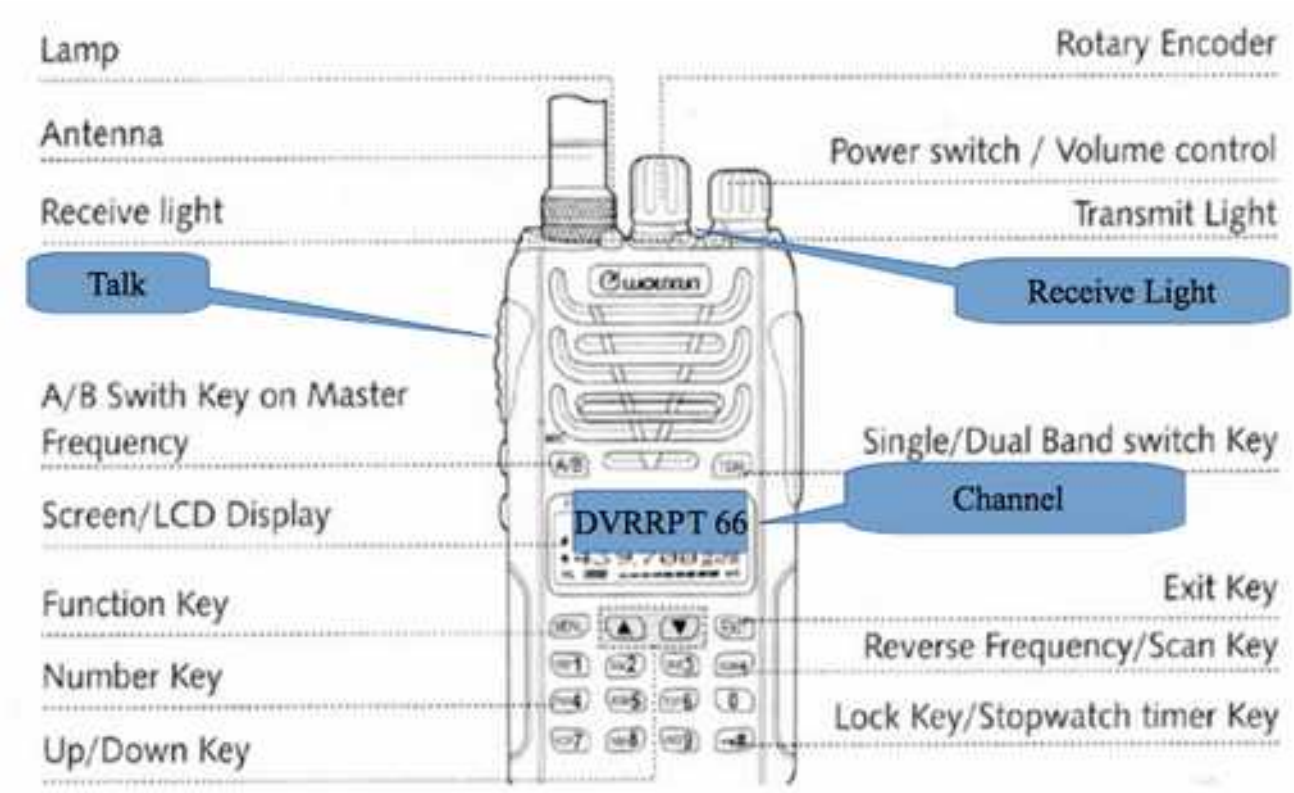
Meeting Date	Handout	Notes
1/11/18	Handout	Notes
11/9/17	Handout	Notes
9/7/17	Handout	Notes
7/13/17	Handout	Notes
5/11/17	Handout	Notes
3/9/17	Handout	
11/10/16	Handout	
7/14/16	Handout	
5/12/16	Handout	
4/14/16	Handout	
3/10/16	Handout	
2/11/16	Handout	

Contact

Neighborhood Drill

- Several neighborhoods planning drill 4/28
- Should we have one?
- Who would attend?
- What format?

Dover Shores Radio Cheat Sheet



1. Turn On/Off - Receive

Rotate Power switch / Volume control knob on the top clockwise 1 turn. Reverse to turn off when done using the radio. The receive light will flash green when you receive a good signal.

2. Transmit

Hold radio about 3 inches in front of mouth. Press the Talk button when you want to speak. Release when done. The transmit light will flash red when transmitting.

Other Side Buttons

Briefly pressing the Light button turns on an LED flashlight on the top of the radio. Pressing again turns it off.

Pressing and holding the Light button temporarily disables squelch (silence when no signal) so you can adjust the volume to a comfortable level.

If the keyboard is unlocked (press bottom right on keypad) pressing the middle button activates an FM radio. Pressing the number keys when the FM radio is enabled select various local stations. Pressing the Scan Key cycles to next available station or use the rotary encoder.

YOU SHOULDN'T NEED TO MESS WITH ANYTHING ELSE INCLUDING THE KEYPAD

Advanced Functions

Lock/Unlock

Your radio should be kept locked so you don't accidentally mess up the settings. If you really want to change something, press and hold the lock key (bottom right of keyboard). This will toggle the lock on and off. It's displayed as a key symbol in the bottom right of the LCD display.

Use a Different Channel

Our group will normally communicate using the channel 66 labeled “DVRRPT 66.” To use a different channel, unlock the radio then use the top middle knob (Rotary Encoder) to select a different channel.

Our normal channel, DVRRPT 66, depends on a radio repeater located at the NBPD headquarters on Santa Barbara DR. If this is not functioning for some reason, switch up one channel and use channel 67 labeled "DVRSPX 67". This does not use a repeater and goes straight from radio to radio but will not cover the neighborhood as well.

If you need to contact another neighborhood or the city, use channel 126 labeled "K6NBRU 126". This is a ham channel should normally only be used by people with an FCC amateur radio license (hams) but in a dire emergency, do what you must.

When unlocked, pressing the TDR key (Single/Dual Band switch key) enables dual receive operation where you can listen to 2 channels at one time. You can only transmit on one. Press the A/B key to select which channel to use for transmitting (marked with arrow). The arrow also indicates which channel will be changed by the rotary encoder knob.

THERE ARE MORE ADVANCED FUNCTIONS THAT YOU CAN REACH WITH THE MENU SYSTEM. WE RECOMMEND LEAVING THEM ALONE. NOTE THAT THE RADIO NEEDS TO BE UNLOCKED TO USE THE MENUS.

Partial Channel List

Channel	Label	Description
1 - 7	NBR???	NBPD RACES group. Should be used by hams only.
2-7	NBRACE	Alternate channels for NB CERT. Most are simplex (no repeater). Hams only.
13 - 17	OCR???	Orange County RACES. Hams only.
66	DVRRPT	Dover Shores normal channel with repeater.
67	DVRSPX	Dover Shores backup simplex channel.
69	CREST	GMRS group in eastern Orange County.
126	K6NBRU	Newport Beach EMComms group normal channel (hams only)
127	K6NBRV	Newport Beach EMComms group alternate channel (hams only)

Using Zello for Neighborhood Communications

From Business Insider... (the article is a little dated).

As Hurricane Irma rips through the Caribbean and heads toward Florida, a free smartphone app is emerging as an important tool for search and rescue.Called Zello, the app lets you use your phone as a walkie-talkie or two-way radio as long as you have a network or WiFi connection. Users can join channels and instantly send voice messages or photos, and the app even works over older 2G networks.

Zello is at the top of the App Store's free-apps chart, and downloads have spiked twice in the past two weeks — during Hurricane Harvey and again on Wednesday as Irma became a Category 5 hurricane.

The app's popularity may have been influenced by viral Facebook and Twitter posts that said it would still work even without cell service, The Washington Post reported. But those posts were incorrect — if cell towers are wiped out in the storm and WiFi goes down, the app will *not* work.

But if you have cell service — even a 2G or 3G connection — the app could help in the event of an emergency. Here's how it works. Zello is free to use and doesn't have ads. To start using the app, though, you'll need to make an account.

You can provide as much or as little information as you'd like, including a photo, description, and voice greeting.

Zello takes a no-frills approach to its interface. By clicking the menu button, you can check your volume level, change your status, view your contacts, and see available channels.

Zello lets you join existing channels or create your own. To check out some of the available channels, click Add Channel and then navigate to Trending Channels.

In the trending-channels area, you can see what topics are popular at any given time. Unsurprisingly, most of the trending channels lately relate to Hurricane Irma or Hurricane Harvey. When you click on a channel, you'll get an overview of what people are talking about before you join.

Once you join a channel, you'll hear audio from other members right away, much as if you were listening to a police scanner. You can hear everything posted in the channel. When I listened, I mostly heard people checking to see if the app worked for them as they prepared for the storm.

Once inside a channel, you can also see a list of users and listen to some of the voice messages people have posted.

To talk to the channel, push and hold the big microphone in the circle.

To send a message, touch the lightning symbol to the top right of the orange circle. This takes you to a message screen. Enter your message and touch send.

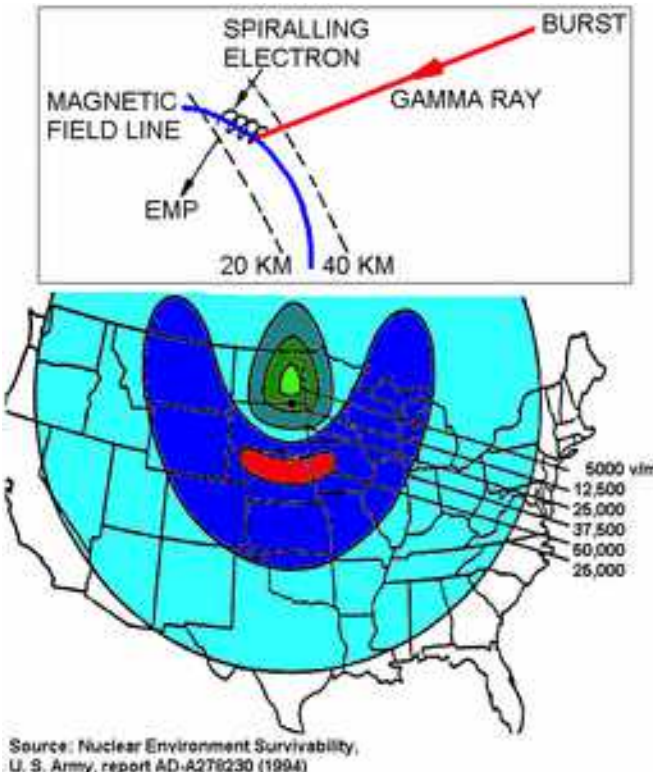
To take a picture, select the camera icon to the top left of the orange circle. On the subsequent screen, touch the bottom circle once to take a picture. Touch the circle again to send it.

To see or hear a history of activity, select the clock icon in the top right.

To send your location, touch the triangle under the name of your contact such as "papugh" in this picture. That will give you a list of menu options including: "Send location." The receiver will get a notification and then a location icon will appear in the most recent entry of the history page. Touching the location icon brings up a map that shows the sender's location.

You can get general instructions on Zello here.

Faraday Shield and Geiger Counter Demo



This section is about risks associated with the very unlikely but possible event of a nuclear conflict. In other meetings we have talked about blast and fall-out survival. This demo is about electromagnetic pulse (EMP) and the use of a Geiger Counter.

Electromagnetic Pulse (EMP)

An electromagnetic pulse is an atmospheric phenomenon that creates a high voltage but very low current in the target area of the pulse.

EMP has no health impact on the human body.

EMP is only harmful to electronics. Then why should we care? For better or worse, our lives are heavily dependent on electronics such as cell phones, computers, televisions, even basic radios. An EMP could potentially destroy all the electronics in your possession so you could not even listen to the radio for emergency information.

The event most likely to generate a large EMP is a high altitude nuclear blast. As shown in the figure from Nuclear Electromagnetic Pulse in Wikipedia, such a blast could impact electronics across a very wide area, even thousands of miles. The US conducted a high altitude nuclear test in 1962 over the mid-Pacific ocean that destroyed street lights and other electrical devices in Hawaii, located approximately 900 miles away.

Note that an EMP can be generated in ways besides a nuclear blast. A terrorist could construct a device that could generate a substantial EMP using just conventional explosives. An extreme solar storm can produce similar effects. A solar storm in 1859 that has come to be known as the Carrington Event destroyed telegraph systems in many parts of the US and Europe. These systems were much less sensitive to EMP than modern electronics.

Modern electronics has significant protection from EMP built in to the circuits but a large enough pulse would destroy them. It is possible to protect electronics from an EMP by using a Faraday Cage. A Faraday Cage is just a conductive box or bag that surrounds the electronics. It protects by re-routing the high voltage around the electronics rather than through it. This same principal protects you if you are in a car or airplane that is high by lightning or a high voltage power line.

The principal is simple; actually building a really effective cage is not. The problem is that an EMP creates electromagnetic waves across a wide range of frequencies with wavelengths from the very small like sub-millimeter to very long like kilometers. Any gap or seam in the conductive surface at any of those sizes creates a hole for the EMP to leak through.

I built a Faraday to protect a radio and a Geiger counter from EMP using some basic materials of a galvanized trashcan and some conductive anti-static bags. I attempted to seal the lid of the can with conductive tape. The electronics are in the bags and the bags go in the can. It works but not as well as I had hoped. I think my solution would be sufficient to protect my electronics from a significant EMP but I'm not sure.

If you build you own version, it's very easy to run some tests. Turn on a portable radio to a loud station and when it's in the cage, you should hear only static. That level of protection is pretty easy to achieve. You can create a much more challenging test with two of our GMRS radios. Switch them both to channel 67, DVRSPX the direct radio to radio simplex channel. You should be able to transmit on one and hear yourself on the radio even when they are next to each other. Now put one radio, turned up loud, in the cage. With this test I was able to substantially reduce the signal but not eliminate it meaning some electromagnetic energy is still leaking through.

I welcome other suggestions on how to build a better Faraday Cage.

Geiger Counter

If there ever was to be a nuclear event, assuming that you survived the initial blast, you are still at risk from the inevitable fallout. You would face a significant challenge to know when it was safe to leave your fallout shelter. You might be able to rely on broadcasts from local radio stations (assuming your radio and the station survived the EMP, see above). Alternatively you can measure on your own.

Relatively good quality basic Geiger Counters are now available at moderate cost. The one I chose was from GQ electronics (Amazon, $94.97).

How much radiation is too much:

Counts Per Minute CPM	Micro Sieverts per hour uSv/hr	Milli Sieverts Per year	Background Radiation Level Guide for detections 1 meter above ground
12	0.10	0.88	Average background, pre Fukushima Japan .081 uSv/hr, Australia .17 uSv/hr,
25	0.21	1.83	0.23 uSv/hr world average, USA average 0.34 uSv/Hr,
50	0.42	3.65	It is normal to occasionally get short duration peaks above normal background for any location.
60	0.5	4.34	Larger peaks of longer duration indicate detection of a hot spot, or a cloud of radiation is passing through!
100	0.83	7.3	Larger peaks of longer duration indicate detection of a hot spot, or a cloud of radiation is passing through!
150	1.25	10.95	Detections 1.0 uSv/hr and above you are getting into the very dangerous area of detection, shelter or leave immediately!
500	4.17	36.5	Even more dangerous, shelter or leave immediately!

Know what your local average background radiation level was pre Fukushima. Radioactive particulate inhalation is a very big risk in any area where you detect above your normal background radiation for any length of time. Leave the area or shelter until it passes if you are getting detections in the yellow, to red zones. World average yearly individual dose is 2 mSv/year. **Every circumstance is different. This is a guide not a bible, any increase in your background radiation level increases risk.**

Chest X-ray	0.1 mSv
Average background exposure in one year	3 mSv
Abdominal X-ray	4 mSv
Living on the Colorado Plateau for one year	4.5 mSv
Typical yearly dose for a uranium miner	5-10 mSv
Full-body CT scan	10 mSv
Lowest dose for any statistical risk of cancer	50 mSv
Mild radiation sickness (headache, risk of infection)	0.5-1 Sv
Light radiation poisoning (mild to moderate nausea, fatigue, 10% risk of death after 30 days)	1-2 Sv
Severe radiation poisoning (vomiting, hair loss, permanent sterility, 35% risk of death after 30 days)	2-3 Sv
Severe radiation poisoning (bleeding in mouth and under skin, 50% risk of death after 30 days)	3-4 Sv
Acute radiation poisoning (60% fatality risk after 30 days)	4-6 Sv
Acute radiation poisoning (bone marrow destroyed, nearly 100% fatality after 14 days)	6-10 Sv
Acute radiation poisoning (symptoms appear within 30 minutes, massive diarrhea, internal bleeding, delirium, coma)	10-50 Sv
Coma in seconds or minutes, death within hours	50-80 Sv
Instant death*	>80 Sv

* Actually, an instant death would be ideal. There have been a couple of recorded cases where people have been exposed to levels over 100 Sv and lived for hours or days.

Personal Continuity - Home Fires

Prevention

- Make sure file alarms are working with good batteries.
- Consider WIFI smoke alarms such as Nest.
- Make sure fire extinguishers are charged and handy.
- Consider installing a sprinkler system on home upgrades.
- Cooking, smoking, candles, electrical...

Before a Fire

- Scan or photograph all essential documents
    - Passports / Birth Certificates / SSNs
    - Driver's licenses
    - Will's, trust docs, POAs, attorney contacts
    - Marriage / divorce records
    - Child custody records
    - Insurance policies (title pages)
    - List of financial account numbers
    - Tax returns
    - Home business documents
    - Prescriptions / medical records
    - Military ID / discharge
    - Pet tag numbers / ID / photos
    - Property records - mortgage info, deeds
    - Address book / contact list
- Create off-site backup of computer files.
- Keep a list of passwords and account IDs off-site
- Scan keepsake photos
- Create a photo inventory of your home

After a Fire

The following checklist serves as a quick reference and guide for you to follow after a fire strikes.

- Contact your local disaster relief service, such as The Red Cross, if you need temporary housing, food and medicines.
- If you are insured, contact your insurance company for detailed instructions on protecting the property, conducting inventory and contacting fire damage restoration companies. If you are not insured, try contacting private organizations for aid and assistance.
- Check with the fire department to make sure your residence is safe to enter. Be watchful of any structural damage caused by the fire.
- The fire department should see that utilities are either safe to use or are disconnected before they leave the site. DO NOT attempt to reconnect utilities yourself.
- Conduct an inventory of damaged property and items. Do not throw away any damaged goods until after an inventory is made.
- Try to locate valuable documents and records. Refer to information on contacts and the replacement process inside this brochure.
- Begin saving receipts for any money you spend related to fire loss. The receipts may be needed later by the insurance company and for verifying losses claimed on income tax.
- Notify your mortgage company of the fire.