



[Back to article](#)  [Print this](#)

## When in trouble, can your phone find you?

### In an emergency, knowing where you are is paramount. Your phone can save you if you know its limitations

By Tom Yager

December 9, 2008

One day, you will have a reason to reach for your cell phone in an emergency. It may be to dial 911, or to make an emergency call to a family member or physician. This likelihood is increased many fold if you use a cell phone instead of a landline for your home or business phone, and make an emergency call when you're not at your billing address. I've learned that the use of a cell phone in an emergency requires forethought and preparation.

The universal emergency services number in the United States is 911, and while dialing 911 on any cell phone should work, it doesn't work the way that landline 911 does. A landline's terminating address appears on your local emergency services' console when you dial 911. If you use cellular or VoIP for home phone service, your billing address is passed to E-911, so "home" is a meaningful location unless you've moved or the payer's address is not your own.

[ A secure smartphone is a safe smartphone. See "[Eight easy steps to iPhone security.](#)" For reviews of iPhone, BlackBerry, Google Android, and Windows Mobile handsets, see "[Test Center gift guide to mobile devices.](#)" ]

Emergencies don't always happen at home, and this presents a seldom-considered dilemma: How can help get to you if you can't tell them where you are? I learned this the first time I called E-911. Instead of answering, "What is your emergency?" the E-911 agent said, "What is your location?" My BlackBerry 8820 had GPS, and I assumed that my coordinates were sent to the E-911 operator. They weren't. It took several minutes to describe my location to the remote call center contracted by my carrier, and the agent, being remote, couldn't make use of landmarks. I figured out on my own that the "where" the agent needed was the name of the municipality whose emergency services he should call. I took a wild stab at it, not revealing that it was a guess, and that broke the logjam. Once the matter became local, landmarks became meaningful and I heard sirens within a couple of minutes. I had gotten the town wrong, but police and fire for the proper jurisdiction were dispatched after the immediate crisis had been seen to by the first responders.

The lesson I took from this is that in an emergency, knowing where you are is just as important as knowing what's wrong. For all the benefits of mobile radiolocation, there are times when a location-aware cell phone is a poor substitute for the paper maps you should carry when you travel. But there is no question that with some planning, your phone can often provide the fastest way to get help.

Start with a device with redundant location technologies. No single method of location is infallible. [iPhone 3G](#), for example, pairs GPS with a database that correlates location to the hardware IDs of sniffable Wi-Fi transceivers. Other devices may rely on cell tower location as a backup for GPS. Such fallbacks are essential because the weak signal from GPS satellites is easily blocked or distorted. It also takes a device some time, as much as three minutes, to lock onto the multiple satellites required to compute your location. Wi-Fi and tower location methods fill in this gap, and platforms present APIs that allow applications to use the methods in a device-agnostic way.

It takes two things to translate coordinates into a street location you can pass to emergency services: cellular data access and software. If you live in a metro area and are spoiled by 3G connectivity and lickety-split map downloads, realize that 3G coverage, and 2G cellular data service fast enough to handle maps, fade as you drive away from the city. If you lose location or data access, fall back to a paper map. Your cell phone is still a life saver.

Having cellular data and radiolocation working isn't a solution. It takes software to turn location coordinates into a street address to which emergency services can be sent. Navigation software like TeleNav and VZ Nav do a good job of planting you on a map, and they maintain a concept of "current location" that quickly returns a street address. Likewise, the updated version of Google Maps that's part of

the [2.2 firmware for iPhone 3G](#) displays the address of any pin (memorized location) when you tap on it.

Google, Yahoo, and others offer free Web-based geolocation services that translate coordinates into textual street addresses using a terse exchange that can squeak through the slowest data link, obviating the need to download a graphical map. Depending on the platform, this is easy to bake into software as long as you secure permission from the geolocation provider. BlackBerry and Symbian apps can use the standard Java MIDP location API. With the user's one-time consent, BlackBerry can respond to a Web server request for your location. iPhone has a proprietary API that is well documented, but that asks the user for permission each time an application requests your location. I haven't yet looked into the navigation API for the less-documented [Android](#), but there are several home-brew location and mapping apps on Android Market.

In an emergency, it's a lot to ask to have you fire up an application, wait for a fix on your location, and then multitask between a phone call and a mapping app. That's difficult whether you've been in an accident, had too much to drink and need a ride home, or want to let your boss or spouse know where you are. Location-capable devices should either show your location on the dial pad and call progress displays, or give you a one-click option to do it. If all the phone can get is rough coordinates for lack of data service, it should put up whatever it can, even numeric coordinates if that's all it can get. That's better than nothing, and at least you wouldn't have to go hunting for it.

 [Print this](#)