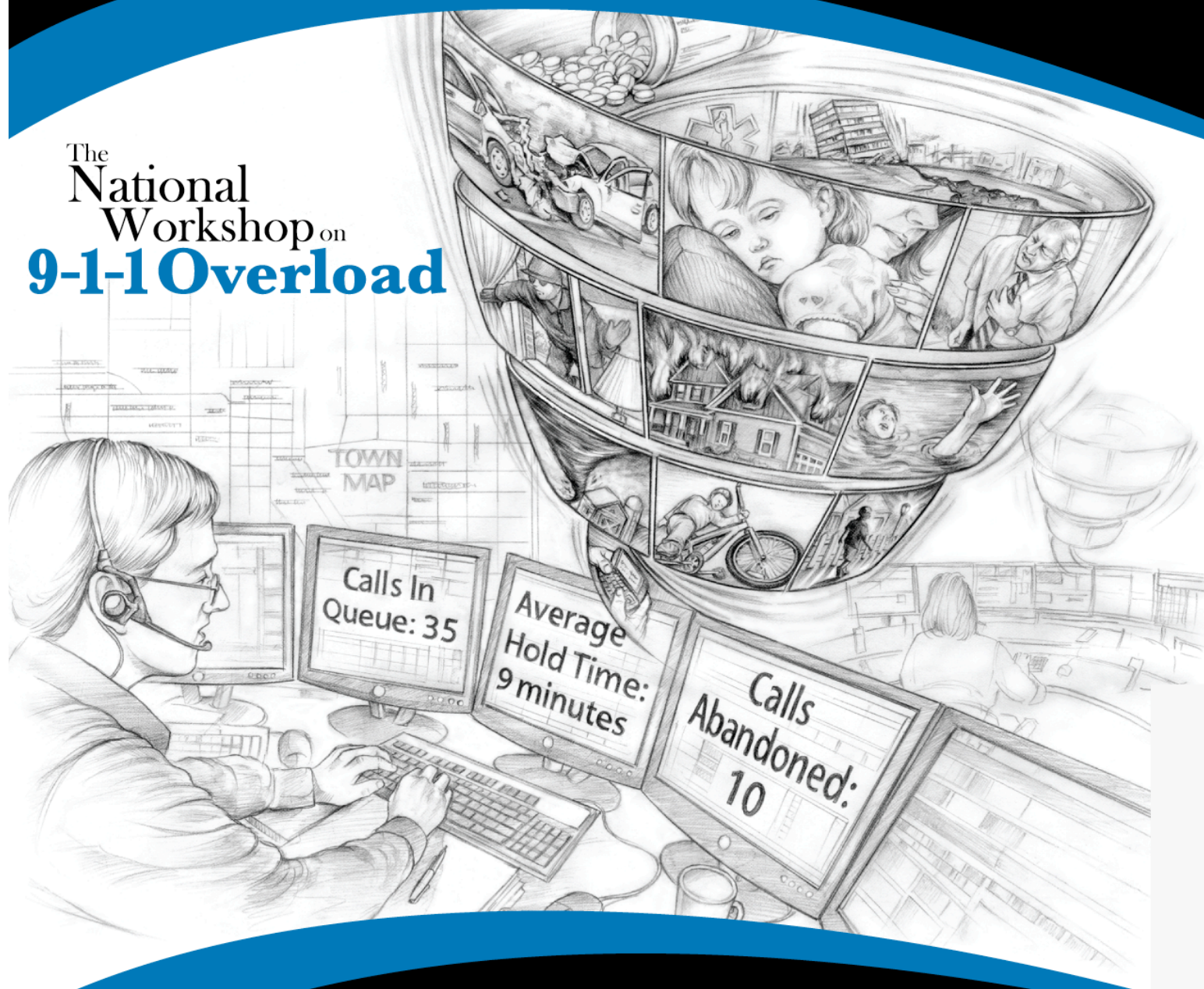


The  
National  
Workshop on  
**9-1-1 Overload**



# The Overloaded 9-1-1 System

October 5, 2011

### THE OVERLOADED 9-1-1 SYSTEM

“The city's new 9-1-1 call center is understaffed, falling far behind the national average in response time, and callers sometimes must wait several minutes to reach an operator. An assessment, undertaken by the agency that runs the city's 9-1-1 dispatch center, depicts a thinly staffed operation that struggles to keep up with the volume of calls, which in some recent months topped 60,000.” – Times Picayune May 19 2011

“More than 6,000 callers to Austin’s 9-1-1 line received a recorded message instead of a live operator last year, according to the Austin Police Department’s emergency communications manager.” - Statesman, February 2011

The City of Chicago’s 9-1-1 emergency service is struggling with 200,000 “non-service” calls each year, and Governor Pat Quinn - Springfield Examiner July 2010

“The 9-1-1 system has become a sort of stop-gap primary care for many individuals”, said Connie Meyer, president-elect of the National Association of Emergency Medical Technicians. – CNN, 2009

“In California as many as 45 percent of the more than 8 million cell phone calls to 9-1-1 each year are for non-emergencies, officials said; in Sacramento, it could be as high as 80 percent. Those calls block the lines for callers who really need urgent help.” – MSNBC 2008

“Since the inception of 9-1-1 more than 30 years ago, the three-digit S O S has become universally familiar and relied upon. But the system has not kept pace with the nation’s rapidly changing communication habits. As it ages, it is cracking, with problems like system overload, understaffing, misrouted calls and bug-ridden databases leading to unanswered calls and dangerous errors. At the same time, the number of calls continues to grow.” -- New York Times, 2007

“During the Katrina crisis, 9-1-1 was unavailable for untold numbers of victims. At least 38 of the 9-1-1 centers in the region lost their ability to function during Katrina” - Hurricane Katrina: A Nation Still Unprepared, Committee on Homeland Security and Governmental Affairs, May 2006

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## Executive Summary

The National Emergency Number Association (NENA) estimates that there were 240 million 9-1-1 calls placed in 2010. This reflects a 26% increase over 1999 when 190 million 9-1-1 calls were placed<sup>1</sup>. It is very difficult to estimate, on a national level, how many of these calls were placed on hold, got a busy signal or never even made it through to the Public Safety Answering Point (PSAP) due to overload issues. While there are no national statistics compiled that track 9-1-1 overload data, there are countless examples of PSAPs being overloaded with calls. As documentation shows, the overload issue has become more prevalent in the last decade.

In May 2011, more than 15 percent of New Orleans' calls to 9-1-1 went unanswered due to staffing issues. In other cases, major weather events such as the snowstorms on the East Coast during the winter of 2010, which severely taxed the 9-1-1 systems. News stories throughout the U.S. document the problems and demonstrate that up to 15% of calls are put on hold, or sent to a recording. In extreme circumstances, such as the summer of 2005 in Ft. Worth, TX, one in five calls were placed on hold due to understaffing. In 2009, California's overload problem caused more than 26% of all wireless calls to 9-1-1 to be "abandoned"—in other words, more than a quarter of the people calling 9-1-1 hung up in frustration.

This report highlights some examples of overload to the U.S. 9-1-1 system for a variety of reasons, including:

- 9-1-1 centers receiving multiple calls on the same incident due to increased mobile phone use,
- Communities having differing standards on when 9-1-1 should be called, thereby overloading some 9-1-1 Centers,
- 9-1-1 Public Education programs losing funding from phone companies and government resulting in public expectations of the 9-1-1 system that are no longer being managed.
- Citizens becoming more and more reliant on government to become involved in personal situations, placing an increased demand on the system.

The following pages will provide further detail by citing specific occurrences, demonstrating the dire need for our industry to address this problem.

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<sup>1</sup> National Emergency Number (NENA) Association Report Card To The Nation, September 11, 2001

Acknowledgements:

The 9-1-1 Industry Alliance would like to extend a special thank you to the following member companies, which provided significant support for the research and production of this report.



## Communications Overload

In the past if a traffic accident or other emergency occurred in a public area or street, a person wishing to report the emergency had to find a pay phone or go to their home phone to call 9-1-1. However, with the growing popularity of cell phones, it is now possible for a 9-1-1 center to receive multiple calls for the same incident. In many areas wireless calls to 9-1-1 account for over half of all 9-1-1 calls. Some of these jurisdictions report wireless calls represent 70%-80% of their 9-1-1 call volume. This has resulted in a significant increase in call volumes that some PSAPs are not equipped to handle.

- Enid, Okla. April 10, 2011.  
Of 25,194 calls to 9-1-1 last year, more than two-thirds were from wireless users. “We get three times the amount of wireless calls than we do from landlines,” Eric Holtzclaw, director of Enid and Garfield County 9-1-1 Center said. “When there is an accident we get seven or eight wireless calls reporting it.”  
<http://enidnews.com/localnews/x1281107983/Funding-the-911-center-is-critical>
- Champaign County, Ill. March 29 2010.  
Officials say there has been a large increase nationally in the number of emergency calls made with cell phones. In Champaign County, nearly 80% of calls made to emergency dispatchers are from cell phones.  
<http://www.news-gazette.com/news/courts-police-and-fire/2010-03-29/big-increase-seen-911-calls-cell-phones.html>
- Tacoma, Wash. August 18, 2010.  
Thousands of calls occurred within 30 minutes of two sonic booms rolling through Puget Sound Wednesday, August 18th as two fighter jets scrambled into action over Western Washington. But not everyone in Pierce County got through to a dispatcher. In fact, most calling between 1:55 p.m. and 2:27 p.m. heard only busy signals. The resulting spike in 9-1-1 calls from concerned citizens overloaded emergency lines into all six of Pierce County's 9-1-1 centers. Similar surges in call volume happened in King, Snohomish, and Thurston counties.  
<http://www.king5.com/news/local/911-call-centers-overloaded-sonic-booms-101031934.html>
- Kansas City, Mo.. January 31, 2011.  
Sixty percent of all 9-1-1 calls came from wireless phones in 2008. That increased to 65.6 percent in 2009, and **in 2010 the number was 70.5 percent**. In just two years, the percentage of 9-1-1 callers using cell phones has climbed by 10 percentage points.  
<http://kcpdchief.blogspot.com/2011/01/70-percent-of-kc-911-calls-now-come.html>

- Kearney, Neb. July 8, 2011.  
A 69-year-old Kearney woman died in a car crash Sunday, July 3rd near Little Caesar's in Kearney, NE. One of the 9-1-1 calls intended for Kearney ended up in a nearby town, Grand Island. The big question is why was the call misrouted? It seems that too many people tried to report the accident, and cell towers in Kearney became overloaded. Because of that, one cell-phone call was transferred to Grand Island, causing confusion.  
<http://www.khastv.com/news/local/911-call-gets-redirected-to-wrong-city-125244154.html>
- Maricopa County, Ariz. September 29, 2010.  
When Peoria resident Donna Isenburger called 9-1-1 to report a car accident she had witnessed on Peoria Avenue on June 23, 2010, the last thing she expected was to have to wait to hear an operator. But Isenburger said the phone rang "about 15 times" before an operator picked up. Two weeks later, she called in to ask for a welfare check on a wheelchair-bound elderly man on 99th Avenue. This time, the phone rang repeatedly before Isenburger decided to hang up. "It is something 9-1-1 operators try to avoid," said Liz Graeber, an administrator for the county's 9-1-1 system, "but it is more common than citizens might expect. During busy periods, the lines at a dispatch center could all be taken. This is relatively rare because operators typically have hundreds of lines with which to work."  
<http://www.azcentral.com/community/glendale/articles/2010/09/29/20100929maricopa-county-911-operator.html>
- San Mateo County, Calif. April 30, 2011.  
San Mateo County Public Safety Communications, the county's main dispatch center for all emergency fire and medical calls, took 37,644 cell phone calls to 9-1-1 last year, making up 46.7% of all 9-1-1 calls, according to recently released statistics. Those numbers are up from 26,752 wireless 9-1-1 calls in 2009, or 41.7% of all such calls, and 7,012 in the past six months of 2008, or 20%, according to the dispatch center.  
<http://www.sfoxaminer.com/local/bay-area/2011/04/wireless-911-calls-growing-challenge-dispatchers>
- Onondaga County, N.Y.  
According to the Onondaga County website, Emergency Communications receives ever-increasing numbers of 9-1-1 calls from wireless devices. Today close to 60% of all 9-1-1 calls come in from wireless telephones.
- Delaware County, Ind.  
Delaware County Emergency Communications reports increasing numbers of 9-1-1 calls from wireless devices. Today close to 61% of all 9-1-1 calls come in from wireless telephones.  
<http://www.co.delaware.in.us/departments/division.php?fDD=26-258>  
September 2011
- Sacramento, Calif. June 27, 2009.

The Sacramento Bee says that more than 26% of all wireless calls to 9-1-1 in California are “abandoned” — in other words, more than a quarter of the people calling 9-1-1 hang up in frustration before they even get to talk to someone. Lawmakers at the state Capitol heard arguments the state's 9-1-1 system is often overloaded and that in too many cases, callers are on hold for too long (<http://techcrunch.com/2009/06/27/9-1-1-should-never-give-me-a-busy-signal/>). When a 9-1-1 call comes into a California Highway Patrol dispatch center, the goal is for that call to be answered in no more than 10 seconds. But statistics show that 8 percent of calls are not meeting that goal and that in 2009, more than 1 million Californians that called 9-1-1 were on hold for so long they decided to eventually hang up. <http://www.kcra.com/mostpopular/21600638/detail.html>

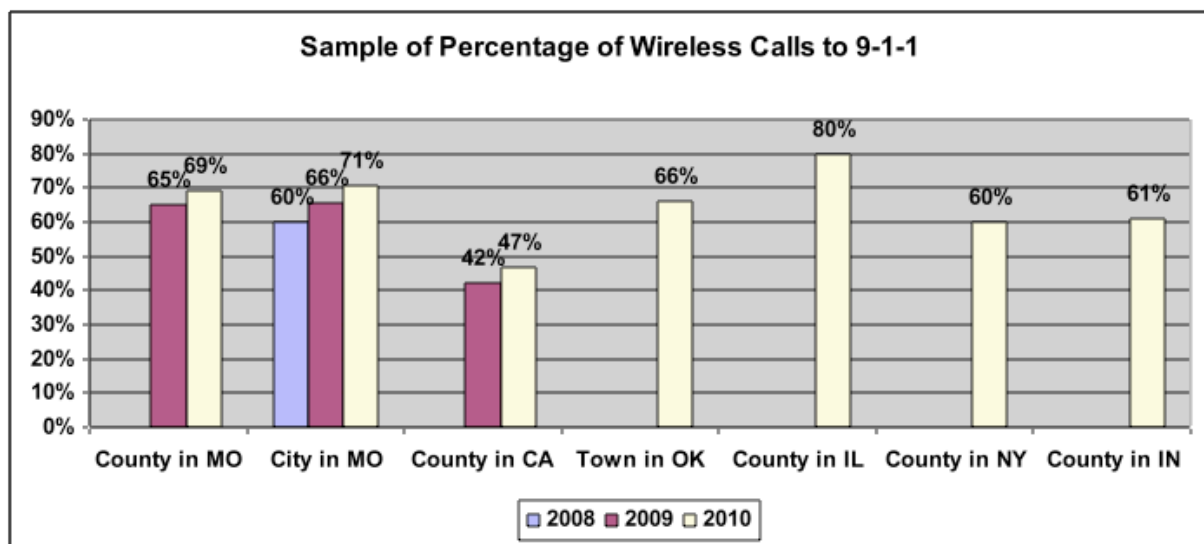
By 2010 there were big improvements: The number of wireless emergency calls reaching busy operators or failing to go through for various reasons dropped from 4.9 million or 42% of calls in 2007 to just 470,000 or 5% so far this year, according to the state's Public Safety Communications Division. Emergency call hold times at the CHP also have improved. In 2007, The Times reported that about half of the CHP's call centers failed to meet state standards of 90% of 9-1-1 calls being answered in 10 seconds or less. Many were averaging delays of four times that or more, with some waits of 20 minutes or longer. <http://9-1-1.com/wordpress/2010/11/29/wait-times-drop-for-cellphone-911-calls-in-california/>

UPDATE: July 2011

The state started looking at ways to solve the problem. The state tried routing calls for each cell phone tower sector based on what amenities were located within that particular tower's coverage area. If it was primarily highway, for example, the CHP would get the calls; in a city, the calls would be routed to the local police department. But that still did not provide optimal routing for all calls. This laid the groundwork for the Routing on Empirical Data (RED) Project, which collected and analyzed historical data from wireless calls to determine how best to route cellular 9-1-1 calls. The project used data from Phase II wireless calls, which have location information. The idea was to use a Web-based GIS to plot the call data on maps that showed which law enforcement agencies were responsible for which areas, and then use the results to determine where cellular 9-1-1 calls from each sector should go. Even with the project only partly done, it has shown results. The 4.9 million unanswered calls per year statewide in 2007 have dropped to 639,000 since the RED Project began. Unanswered calls are expected to decrease further as the project is completed. And this is happening while the total number of wireless calls continues to grow.

<http://www.emergencymgmt.com/safety/California-Analyzes-Cell-Phone-911-Project-Red.html?page=2&>





## Weather Events

Natural disasters or other large weather events are also responsible for an increase in call volume to PSAPs. In some cases the increased call volume or the impacts of the bad weather on the 9-1-1 call center may cause calls to route to a PSAP other than the PSAP that would normally receive the call. For example, a hurricane might flood a PSAP causing the calls to be rerouted to a neighboring PSAP.

- Huntsville/Madison County, Ala. May 12 2011.  
Emergency officials say that as storms raked Alabama on April 27, 2011, the Huntsville-Madison County 9-1-1 Center was slammed with emergency calls from distant counties, including some south of Birmingham. Officials are trying to determine how emergency calls from Blount, Cullman, Jefferson and Tuscaloosa counties wound up in Madison County. They say the likely answer is that cell towers elsewhere were overloaded.  
<http://www2.oanow.com/m/news/2011/may/12/911-officials-wonder-why-alabama-calls-were-bounce-ar-1835622/>
- Jasper County, Joplin, Mo. Tornado. May 22, 2011.  
“We were overloaded. We have 8 trunks and Joplin’s PSAP has 6. Our trunks ring back and forth between each PSAP when the other is busy or overloaded after 20 seconds ringing and pending in the queue. As you can imagine, they would ring, sit in queue for 20 seconds and then auto re-route to the opposite PSAP, where both of us were overwhelmed. Within the first hour, 1741 to 1841, we had handled 399 9-1-1 calls and 179 Admin calls. Within 24 hours, we had taken 1,371 calls” –  
SOURCE: Toni Dunne spoke and/or emailed with April Tarrant, Jasper County 9-1-1 Director in June 2011.
- Springfield, Ore. March 15, 2011.  
Many of the people affected by Sunday, March 13<sup>th</sup>’s storm might have turned to 9-1-1 for help, but some people say they received a busy signal when trying to call.  
Dispatchers with 9-1-1 say the area’s emergency lines backed up with calls about fallen debris. Dispatchers fielded nearly three times as many calls. On March 6<sup>th</sup>, they received 132 calls and on March 13<sup>th</sup>, they received 484 calls. The 9-1-1 center says it received so many calls that every employee was called into work. The center even had to activate an auxiliary call bank to handle all of the calls. <http://kezi.com/news/local/207108>
- New York, N.Y. January 31 2011.  
Almost a decade after September 11, 2001, callers to 9-1-1 in a high volume scenario may still find that the system continues to fail New Yorkers when they need it most. On an average day, 9-1-1 handles 30,000 calls without a problem. But when there are large-scale emergencies that prompt wider calls for help, the system still can’t handle it. Callers are more likely to get a busy signal or a recording. The high volume of calls during the

December blizzard showed that there are still major 9-1-1 capacity problems in New York City. During the height of the blizzard, NYPD Commissioner Ray Kelly admitted that high call volumes into 9-1-1 were causing backlogs. "You call 9-1-1 and you get a busy signal and that can happen at peak times, at unusual situations like the snow storm, you are certainly going to get the possibility of getting a busy signal increases," Kelly explained. "By the night of December 26, over one thousand calls were in the queue waiting for a response," Goldsmith said. "This problem became exacerbated because well over 100 ambulances became stuck in snow conditions, further reducing EMS ability to respond to medical emergencies."

<http://www.wnyc.org/articles/wnyc-news/2011/jan/31/despite-911-system-upgrades-problems-persist/>

- Suffolk County, N.Y. April 13, 2010.  
More than 2,300 calls to Suffolk's **9-1-1** system went unanswered during last month's powerful nor'easter, the worst in a string of severe weather events that has prompted County Executive Steve Levy to order an update of emergency preparedness plans. In Suffolk, 2,387 calls logged during the storm did not get through to a **9-1-1** operator - that's 1 out of every 5 calls. In Nassau, 1,548 calls - or 1 in 7 - did not reach an operator.  
[http://article.wn.com/view/2010/04/13/Emergency\\_prep\\_update\\_eyed\\_for\\_eastern\\_Long\\_Island\\_n/](http://article.wn.com/view/2010/04/13/Emergency_prep_update_eyed_for_eastern_Long_Island_n/)
- Lawrenceville, Ga. September 23, 2009.  
A 39-year-old Lawrenceville woman who died Monday, September 21 after a flash flood swept her minivan off the road told her sister "the water is taking me" moments before her cellphone went dead. Seydi Burciaga was heading home around 5 a.m. after working an overnight shift when her Nissan Quest plunged into a huge pool of water on a dark stretch of Desiree Drive. At the time, she was within a few hundred feet of her house. Burciaga tried to call **9-1-1**, but she kept getting a **busy signal** because of high call volume, said her brother-in-law Manuel Gonzalez.  
The Atlanta Journal-Constitution/  
<http://www6.lexisnexis.com/publisher/EndUser?Action=UserDisplayFullDocument&orgId=574&topicId=100020422&docId=1:1043575744&start=2>
- Roanoke County, Va. May 16, 2009.  
Callers, experiencing an earthquake, couldn't get through or had to wait 10 minutes to reach Roanoke County's 9-1-1 center. Roanoke City dispatch says it is possible for the system to get so overloaded that callers can't get through. "We have 12 emergency trunk lines coming in, and you have to be very, very busy before you can overwhelm 12 lines," Pat Shumate, Roanoke County Chief Communication Officer, said. "Yeah, a person could conceivably get a busy signal, or it would just ring without being answered, but that could happen anywhere not just here in Roanoke," Mike Crocket with Roanoke City 9-1-1 said.  
<http://wslsroanokeva.ramp.com/v/41816823/possible-911-overload-after-roanoke-earthquake.htm>

- Pittsburgh, Pa. December 2009.  
"It would ring, there was a lot of static on the line, and then there was a **busy signal**," said Robert Kuhn, 53, of O'Hara. At the other end of the line, about 40 workers were struggling through one of the busiest hours ever at Allegheny County's **9-1-1** dispatch center. As hundreds of cars slid out of control on ice-slicked roads, drivers' and neighbors' calls for help swamped the Point Breeze dispatch center at the rate of about 17 calls per minute from 8 to 9 a.m. Those were just the ones that got through. An undetermined number, like Kuhn, never got through. Pittsburgh Tribune Review -- - [http://www.pittsburghlive.com/x/pittsburghtrib/news/pittsburgh/s\\_657738.html](http://www.pittsburghlive.com/x/pittsburghtrib/news/pittsburgh/s_657738.html)

## Non-emergency Calls to 9-1-1

In some areas of the country, callers don't have an easy means to access non-emergency city or county services. In some larger metropolitan areas 3-1-1 has been implemented as an easy way to access non-emergency services like utility companies or animal rescue, while keeping the 9-1-1 lines available for truly life-threatening emergencies.

Below are some examples of how non-emergency calls are adding to 9-1-1 center overload.

- Ohio (Cox Media Group). July 12, 2011.  
An annoying Chihuahua. A routine checkup. A basketball score. Misplaced "dope." These are not reasons to call 911. But emergency responders are being strained by inappropriate calls to 9-1-1 and ambulance runs, a Cox Media Group Ohio investigation has found. Butler County Communications Manager Bonnie Short said, "We get called here asking when Trick or Treat is. Or what the weather is like outside and if they should be driving." Short said one call that stands out for her is a man who called 9-1-1 to get someone to rid his house of a mouse. "His wife called him at work and she was terrified, so he called 9-1-1," Short said. She added the definition of an emergency is not the same for everyone.

<http://www.journal-news.com/news/hamilton-news/trivial-calls-to-911-costly-to-taxpayers-1205294.html>

- Tulsa, Okla. August 25, 2011  
While Tulsa has a modern 9-1-1 center there's a problem they can't control - people calling in when it's not really an emergency. The city estimates more than one-third of all the calls to 9-1-1 could be more effectively handled by another city department. That's led to talk of creating a new "3-1-1" number for city hall, with a switchboard connected to everything except police, fire and EMSA. It's been under discussion for 2 years - delayed by lack of funding and coordination between all the departments that would have to consolidate their call centers. Tulsa's 9-1-1 Center Swamped with Non-emergency Calls, News on 6, August 25, 2011.
- Wichita, Kan. July 5, 2011  
When a 26-year-old man was injured in a motorcycle accident late Monday, July 4<sup>th</sup> in northwest Wichita, numerous people called 9-1-1 to report it. But all they heard was a busy signal. "So many people were calling 9-1-1 to complain about fireworks that other callers couldn't get through," Lt. Kevin Vaughn said on Tuesday. "From midnight Sunday to 3 a.m. Tuesday, 3,555 calls came in to 9-1-1," he said. In a typical 24-hour period, the center averages 1,200 to 1,500 calls. "Out of those 3,555 calls," Randy Bargdill, director of emergency communications said, "nearly 20 percent were calls complaining about fireworks."

<http://www.kansas.com/2011/07/05/1921275/man-seriously-injured-in-motorcycle.html>

- Sedalia, MO April 11, 2011  
In the first three months of 2011, the Sedalia Police Department received more than 570 hang-up calls to **9-1-1**, which is an average of more than six calls each day. Sedalia Patrolman Sean Hiatt said on Saturday alone, the department received more than 25 **non-emergency 9-1-1** calls.  
<http://9-1-1.com/wordpress/2011/04/11/police-seek-to-curb-non-emergency-911-calls/>
- Calgary, Canada. April 14, 2011.  
Nearly half of the 9-1-1 calls Calgary emergency communications officers take these days aren't emergencies at all. Accidental and false 9-1-1 inquiries now account for up to 40% of all calls coming into the response center, creating a huge headache and cost to the tune of \$1 million annually.  
<http://ca.topmodel.yahoo.com/s/14042011/67/911-misuse-costs-city-1m.html>
- Luzerne County, Pa. June 15, 2010.  
A quarter of the 1,200 calls handled daily by Luzerne County 9-1-1 (PA) are not emergencies, a quality assurance and public awareness specialist said Monday, June 14th. "We field a lot of calls that do not constitute an emergency," Joseph Lynch said. Workers answer calls seeking phone numbers, requests for accident reports and garbage left curbside, in addition to some 900 calls a day that are emergencies - where life or property is threatened - Lynch said.  
<http://standardspeaker.com/news/quarter-of-luzerne-911-calls-non-emergency-1.846686>
- Chicago, Ill. July 26, 2010.  
The City of Chicago's 9-1-1 emergency service is struggling with 200,000 "non-service" calls each year, and Governor **Pat Quinn** signed a bill to boost penalties on individuals who place prank 9-1-1 calls. That totals more than 500 non-emergency calls a day.  
<http://www.examiner.com/political-buzz-in-chicago/chicago-deals-with-200-000-non-emergency-911-calls-gov-pat-quinn-boosts-911-prank-call-penalties>
- Broward County/Palm Beach County, Fla. Sept 2010.  
The Broward Sheriff's Office fields 2.5 million **9-1-1** calls annually, half of those are **non-emergency** calls. In Palm Beach County, the Sheriff's Office handles about 1 million calls a year, and 30% to 40% are **non-emergency** calls. "You get people who call and ask what time it is. Lonely old people want conversation," said Kim Rubio, Broward Sheriff's Office communications manager.  
<http://www.palmbeachpost.com/news/drunken-dialing-mental-confusion-can-prompt-frivolous-911-913380.html>
- Madison, Wisc. November 18 2009.  
The **9-1-1** center handled about 249,000 **non-emergency** calls, or about 39% of the 641,000 calls it received, in 2008.  
[http://host.madison.com/wsj/news/local/govt\\_and\\_politics/article\\_86f658b6-d4b9-11de-927d-001cc4c03286.html](http://host.madison.com/wsj/news/local/govt_and_politics/article_86f658b6-d4b9-11de-927d-001cc4c03286.html)

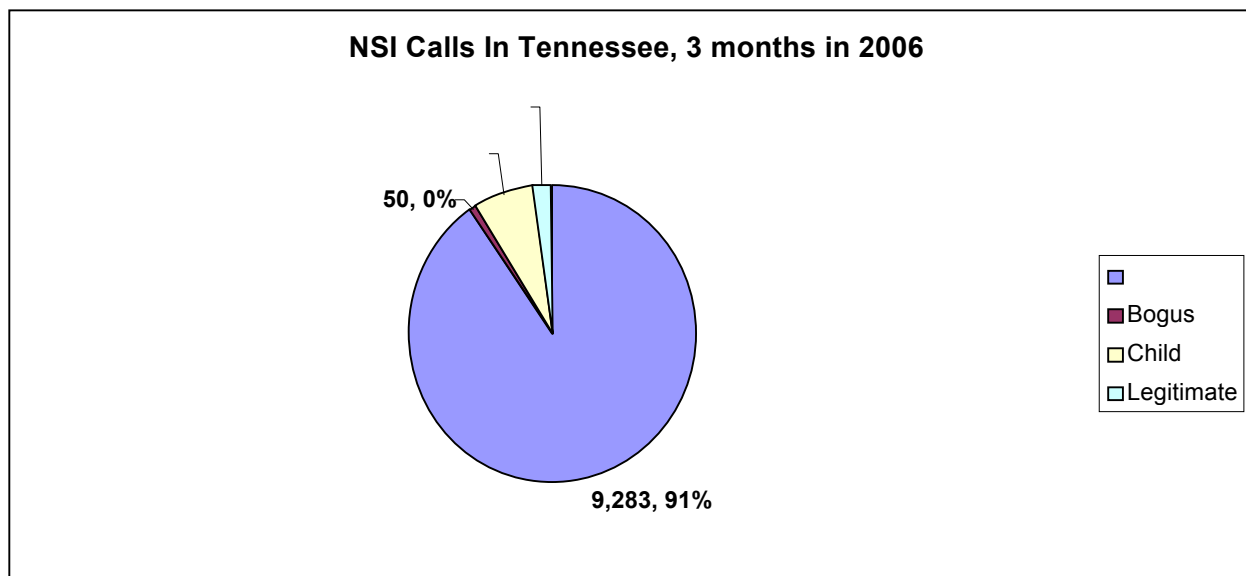
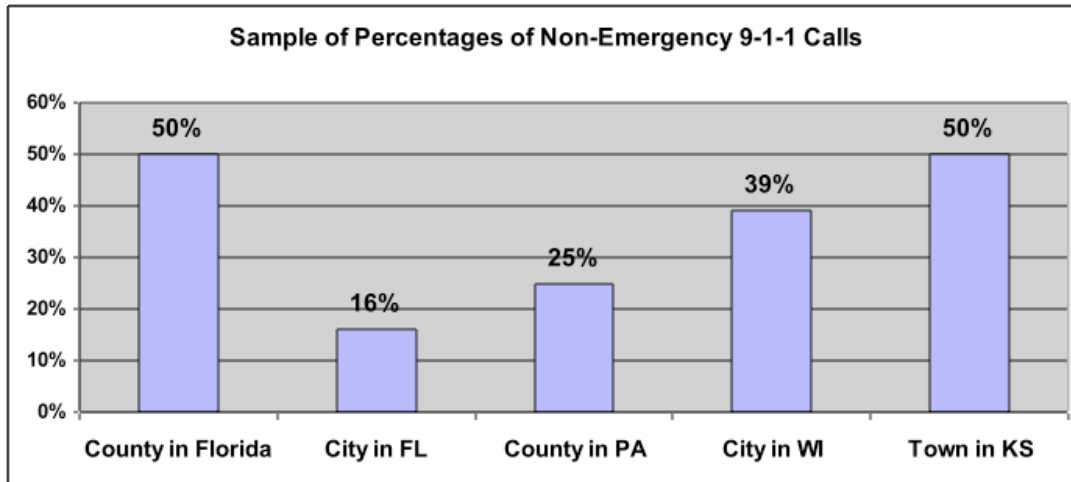
- Johnson City, Kan. August 25 2009.  
 Fifty percent of the 35,000 **9-1-1** medical calls in the county are not really emergencies. And for each **9-1-1** call resulting in EMS being dispatched, it costs between \$400 to \$500 to transport a person via ambulance to a hospital.  
<http://www.ems1.com/ems-products/ambulances/articles/585783-Report-20-percent-of-911-calls-are-non-emergencies/>
- St. Petersburg/Tampa, Fla. October 13, 2010  
 On a yearly average 15% of calls received in the St. Petersburg area and 16% of calls received in the Tampa area were calls that would have been better handled by a personal doctor or even a drugstore worker.  
<http://www.usfa.dhs.gov/pdf/efop/efo45007.pdf> (Copley (OH) Fire Dept. 2010. Identifying Causes for Emergency System Overload and Alternative Types of Medical Assistance.)
- Baltimore, Md. May 2008.  
 City emergency management crews complained about being stretched to the limit and expressed fear that the increasing number of non-priority medical calls is overloading the system and putting public safety at risk.  
<http://www.wbalTV.com/r/16178436/detail.html>

## Non-Service Initialized

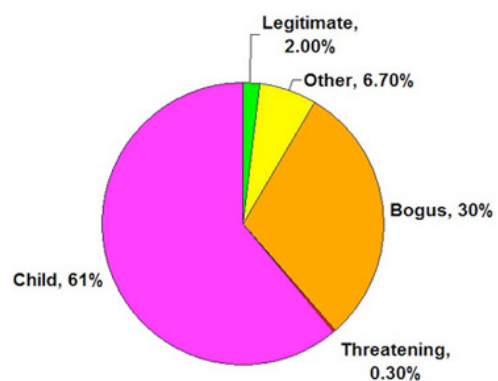
Wireless handsets are capable of dialing 9-1-1 even if the wireless service has been disconnected. A phone without an accompanying wireless service is referred to as a “non-initialized” phone. As the public became aware of this capability—along with the knowledge that the phone was difficult to locate—9-1-1 centers began to see an increase in abuse of the system.

- INDigital (Ind.). May 2011  
The overall volume of 9-1-1 calls from non-initialized handsets has increased to a range of approximately 8% to 30% of all wireless 9-1-1 calls statewide over the past 18 months. [http://www.indigital.net/images/ads/State\\_of\\_Indiana\\_IN911\\_Press\\_Kit\\_%5B11\\_in\\_May%2711%5D.pdf](http://www.indigital.net/images/ads/State_of_Indiana_IN911_Press_Kit_%5B11_in_May%2711%5D.pdf)
- Los Angeles, Calif. February 26, 2011.  
An East Los Angeles man is accused of making more than 18,000 crank calls to 9-1-1 over the course of six months. California Highway Patrol officers arrested 43-year-old Maurice Cruz and booked him for misusing the 9-1-1 emergency line. Authorities said Cruz used non-initialized cellular phones, making the calls difficult to trace. [http://abclocal.go.com/kabc/story?section=news/local/los\\_angeles&id=7982312](http://abclocal.go.com/kabc/story?section=news/local/los_angeles&id=7982312)
- Urgent Communications Article, “A Good Deed Gone Bad.” Sept 2008. In 2006, PSAPs in Tennessee reported more than 10,000 fraudulent 9-1-1 calls from non-initialized phones in a period of three months. In Florida, several PSAPs reported about 8,400 fraudulent calls from such phones in just one month. One PSAP in Maury County, Tenn., reported several instances of children making harassing 9-1-1 calls from non-initialized handsets. One child called the PSAP 84 times on a Saturday night, nearly immobilizing the PSAP's ability to respond to real emergencies. According to Richard Taylor, president of the National Association of State 9-1-1 Administrators (NASNA), the number of fraudulent calls from non-initialized handsets may be even higher than those reported because it's difficult for PSAPs to track these calls when they are dealing with real emergencies. But everyone in the 9-1-1 sector agrees that these calls pose a significant problem, he said. “Most of the percentages I've seen show that less than 3% of calls coming from these phones are legitimate,” Taylor said.
- In Tennessee, 40 of 95 counties kept records between October and December 31, 2006. Less than 2% of non-initialized calls were legitimate.





NSI 911 Calls



## Examples of Guidelines on When to Use 9-1-1

Although NENA has published guidelines on its website, there are no national standards for when to call 9-1-1. Locally, some municipalities publish guidelines on their websites as part of locally driven public education efforts. Examples include:

- **NENA: When should you use 9-1-1?**  
Nine-one-one is only to be used in emergency situations. An emergency is any situation that requires immediate assistance from the police/sheriff, the fire department or an ambulance. If you are ever in doubt of whether a situation is an emergency you should call 9-1-1. It's better to be safe and let the 9-1-1 call taker determine if you need emergency assistance.
- **Rhode Island: What is considered a 9-1-1 emergency?**  
A 9-1-1 emergency is defined as an incident, which requires immediate police, fire, or emergency medical attention. NEVER call 911 for information, directions, directory assistance, or as a prank. However, if in doubt whether questionable situations are indeed emergencies, DO NOT HESITATE to call 9-1-1.
- **Wyoming, Teton County 9-1-1: TETON COUNTY 9-1-1 – When do I call 9-1-1?** 9-1-1 should be dialed in emergency situations only. Examples include; medical emergencies, traffic collisions, Reddi reports (Report Every Drunk Driver Immediately) and other incidents when life or property is threatened. Do not hesitate to dial 9-1-1, if the communications technician determines your situation is not an emergency you may be asked to call back on the non emergency line
- **Connecticut State Police: Call 9-1-1 -** For all emergencies that require police, fire or medical assistance to protect lives or property, To report a crime in progress, To report a fire, If someone is injured or suddenly becomes ill, To report a missing person, in particular a child or elderly person who may be in danger. Do NOT call 9-1-1 - To ask for traffic status, To report a power outage To ask for directions.

## Lack of Public Education Leads to Unclear Expectations

9-1-1 Public Education programs, once supported by phone companies and government, are no longer in place and public expectations of the 9-1-1 system are no longer being managed through such programs. Most citizens are probably not aware of the challenges facing their local public safety entities.

In 2007, the Association of Public-Safety Communications Officials-International (APCO), with funding from the Public Safety Foundation of America (PSFA) created two video public service announcements as part of awareness campaign to educate the public on when to call 9-1-1, along with information crafted to ensure the calling public had a clearer understanding of what location information would be available to PSAPs when emergency calls are received from mobile phones. Disseminated across the country and played in various markets, this campaign received high marks for its content and delivery. Unfortunately, continually repeating such a campaign is a far too costly proposition for nonprofits to maintain.

- “Consumer expectations for accurate and timely response to 9-1-1 calls are based on the advanced features available on most communications devices, not on the reality of a faltering legacy system.” Congressional Research Service, Emergency Communications: The Future of 9-1-1, January 2010.
- “Through decades of experience, the 9-1-1 system has evolved to become a system heavily relied upon by the public. This reliance comes with certain expectations that have been set on a national level as well as on a local level ... Partial blame for this situation must be placed upon the emergency workers themselves. After years of proclaiming ‘when you need help, call 9-1-1,’ the public has become accustomed to the behavior that if something bad happens, you call 9-1-1 and let the professionals deal with it.” - Copley (OH) Fire Dept. 2010. Identifying Causes for Emergency System Overload and Alternative Types of Medical Assistance.
- “With its long history, consumers have become used to relying upon E9-1-1 emergency services and... have grown to have certain expectations regarding E9-1-1 services. A Report on Technical and Operational Issues Impacting the Provision of Wireless Enhanced 9-1-1 Services (a.k.a. The Hatfield Report)
- There are three respects in which 9-1-1 system performance currently fails to meet consumer and citizen expectations: (i) inconsistent 9-1-1 service across municipal, county, and state jurisdictions; (ii) inconsistent 9-1-1 service across different communications technologies and services; and (iii) the inability of our 9-1-1 service to handle calls from newer technologies routinely used by today’s consumers. (Health of the US 9-1-1 System. by ColoComm Group, LLC: Dale Hatfield, Brad Bernthal, and Phil Weiser. Sponsored by the 9-1-1 Industry Alliance (9iA).

## Insufficient Staffing

During these difficult economic times, agencies are experiencing financial shortfalls that are directly impacting 9-1-1 staffing. Due to funding cuts, inadequate PSAP staffing levels lead to frustrating delays for 9-1-1 callers. Add this to the already overburdened dispatchers who are trying to handle the ever increasing call volume and the results can be devastating. In some instances, even a fully staffed PSAP may not be able to handle the increased call flow from major events.

- Charleston, S.C. July 17, 2011.  
Nearly one out of every 10 Charleston County residents who called 9-1-1 in emergency situations over the past 12 months encountered situations in which their calls rang for more than 20 seconds before the overloaded dispatchers could pick up, records show. County officials say the longer delays typically happen when multiple people call about the same incident, which has become increasingly prevalent across the country now that most people have cell phones. Dispatch Center Director Jim Lake said the center plans to hire more staff to help alleviate the problem, and he wants to launch an information program to educate the public on how the 9-1-1 system works.  
<http://www.postandcourier.com/news/2011/jul/17/some-emergency-calls-just-dont-get-answered/?print>
- New Orleans, La. – May 19, 2011.  
The city's new 9-1-1 call center is understaffed, falling far behind the national average in response time, and callers sometimes must wait several minutes to reach an operator, according to a highly critical internal report. In some cases, people have waited more than eight minutes for their 9-1-1 calls to be answered. And several hundred people each month must wait more than a minute for anyone to pick up, the report says. The report shows that staffing cuts in mid-2010, when the new Landrieu administration found the city was facing an \$80 million budget shortfall, hampered the city's response to 9-1-1 calls. Overall, the city is falling far short of meeting the national standard for emergency call service. That standard suggests that at least 90% of emergency calls should receive attention within 10 seconds and at least 95% should be answered within 20 seconds. In New Orleans, about 89% of all 9-1-1 calls were answered within 20 seconds in December 2010. But in April 2010, before the staff cuts, 98% of emergency calls received a response within 10 seconds. In October, after a 44% decrease in staffing, fewer than 93% of all calls were answered within 20 seconds. Some callers had to wait 140 seconds or more, while one caller waited four minutes. The lag time got worse in December, when five callers waited at least eight minutes. The report shows that last October, more than 38,000 people dialed 9-1-1 in New Orleans, but more than 5,000 of those calls were not answered. In December of last year, the report indicates more than 38,000 people called 9-1-1 for help. Almost 7,000 of those calls were not answered. That means almost 20% of all people who called 9-1-1 didn't get an answer. And one month later - in January of 2011 - more than 35,000 9-1-1 calls came in, and almost 5,500 went unanswered. That's more than 15% of all calls.

[http://www.nola.com/politics/index.ssf/2011/05/new\\_orleans\\_911\\_call\\_center\\_ge.html](http://www.nola.com/politics/index.ssf/2011/05/new_orleans_911_call_center_ge.html)

- Austin, Texas. February 7, 2011  
More than 6,000 callers to Austin's 9-1-1 line received a recorded message instead of a live operator last year, according to the Austin Police Department's emergency communications manager.  
[http://www.statesman.com/blogs/content/shared-gen/blogs/austin/cityhall/entries/2011/02/07/911\\_officials\\_concerned\\_over\\_s.html](http://www.statesman.com/blogs/content/shared-gen/blogs/austin/cityhall/entries/2011/02/07/911_officials_concerned_over_s.html)

From April 6th to April 10th, there were 12,168 calls. Of those, 412 callers got a recording. On each of those days, people were also put on hold, waiting anywhere from 56 seconds to 2 minutes and five seconds. From April 13th to April 17th, there were 12,159 9-1-1 calls. 595 of those callers got a recording. They were on hold from a minute 20 seconds to 2 minutes 51 seconds. According to numbers given to us from the Austin Police Department, every single day so far this year, someone calling 9-1-1 for help received a recording.

[http://www.myfoxaustin.com/dpp/top\\_stories/Some-911-Callers-Are-Placed-on-Hold-in-Austin-20110427-ktbcw#axzz1WjVICCQT](http://www.myfoxaustin.com/dpp/top_stories/Some-911-Callers-Are-Placed-on-Hold-in-Austin-20110427-ktbcw#axzz1WjVICCQT) DATE: April 27, 2011

UPDATE: June 27, 2011. Austin 9-1-1 officials say they are so strapped for operators that they have routinely spent \$1 million or more for overtime and for temporary workers to fill shifts, even as thousands of callers waited on hold sometimes for minutes at a time because no one could immediately answer. The main worries among Public Safety Commission members have focused mostly on the thousands of calls that are placed on hold before an operator answers. Those calls represent a small fraction of the center's overall volume, but the number has continued to grow rapidly, reaching nearly 10,000 this year. The time callers were left on hold also has increased — reaching 19 minutes, 17 seconds in at least one instance in 2011.

<http://www.statesman.com/news/local/an-emergency-at-the-911-call-center-1564225.html?printArticle=y>

- El Paso, Texas. February, 24, 2011.  
It wasn't a busy signal, but a recorded message, that one ABC-7 viewer heard when she recently dialed 9-1-1 - and officials said it's part of procedure when all the emergency call takers are busy. ABC-7 listened to the recording. It says: "You have reached 9-1-1. Please do not hang up. Remain on the line for the next available operator." The recorded message is then repeated in Spanish. Saunders said his wife heard the recording six or seven times, before an emergency call taker picked up and help arrived.  
<http://www.kvia.com/news/26976203/detail.html>
- Washington D.C. February 27, 2011.  
The D.C. mayor's office was warned that furloughing 9-1-1 emergency call-takers could harm public safety – this weeks before nearly 200 calls went unanswered Feb. 22 because the furlough stripped the call center of employees. In December, the D.C. Council approved four furlough days for District employees, leaving them without pay on national holidays to save the city \$19 million. Police officers, and fire and rescue workers

were exempt, but dispatchers at the 9-1-1 call center were required to take the time off. In the weeks before the first furlough day, the union representing the call-takers pleaded with members of the Vincent Gray administration to exempt them, too. Those pleas went unanswered.

<http://psc.apcointl.org/2011/03/02/d-c-mayor-was-warned-of-safety-issues-before-furlough-triggered-dropped-9-1-1-calls/>

Original Source was the Washington Examiner, February 27, 2011

- Atlanta, Ga. – November 22, 2009.

Citing data from the Atlanta Police Department, the WSB-TV station reported last week that some callers have been placed on hold as long as 38 minutes before getting through to an operator in the city's 9-1-1 center. While delays that long are unusual, WSB found that the 9-1-1 system frequently diverts callers to an automated message asking them to wait for assistance. Standards set by the National Emergency Number Association say that 90 percent of 9-1-1 calls should be answered in 10 seconds or less. From May to July, however, at least 30,000 calls could not be answered that quickly, according to documents that WSB obtained from city officials. WSB, like The Atlanta-Journal Constitution, is owned by parent company Cox Enterprises. In August, according to a city performance management report, 9-1-1 operators answered just 1 percent of calls within 10 seconds. Ninety-six percent, however, were answered within 20 seconds.

<http://www.ems1.com/ems-products/communications/articles/606314-Data-on-Atlanta-911-calls-raise-concern/>

Original Source – Atlanta Journal Constitution

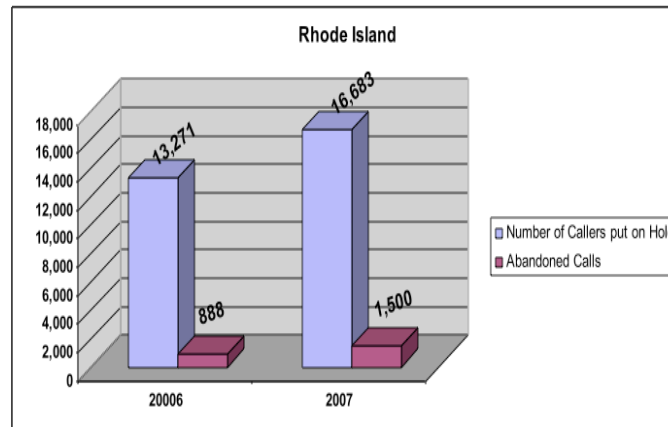
- Las Vegas, Nev. - October 24

The Valley's population boom is causing an overload of emergency phone calls in Las Vegas. Police say that, combined with a shortage in 9-1-1 operators, means calls are answered within the standard 10 seconds only 65% of the time. Police say the delays aren't caused by a lack of funding or poor planning; there are just not enough operators to keep up with the calls. The 9-1-1 center is budgeted for 87 operators, but only has 62.

<http://www.8newsnow.com/story/985181/local-911-system-overloaded>

- Rhode Island - February 20 2008.

Nearly 17,000 callers seeking emergency help by dialing 9-1-1 in Rhode Island in 2007 were put on hold, an increase of 26% from the previous year. After hearing a recorded message, "You have reached 9-1-1, please stay on the line," the callers had to wait from a few seconds to more than a minute before an operator picked up. Some callers hung up before anyone answered.



The delays occurred as the volume of emergency calls went up, while the amount of money allocated for the 9-1-1 service went down, according to data compiled by the Rhode Island E-9-1-1 Uniform Emergency Telephone System. The number of E-9-1-1 calls that were placed on hold in 2007 increased sharply from 2006. There were 16,683 calls placed on hold in 2007, compared with 13,271 in 2006, a 25.7% increase, according to figures provided by the E-9-1-1 center. On average, the center received 1,571 calls each day and an average of 46 calls a day were put on hold (3%). Callers hear a recording and are put on hold after six rings. The average hold time was 9.5 seconds, with one 9-1-1 call made July 4 placed on hold for 87 seconds. There were 16 days in 2007 in which a caller had to wait a minute or longer to speak to an operator. In 2006, the average hold time was 8 seconds. The longest a caller had to wait was 84 seconds. Along with the increased hold times, the number of callers who simply hang up before reaching an operator has gone up dramatically. There were 1,500 abandoned calls placed to 9-1-1 in 2007, compared to 888 in 2006, an increase of 69%.

[http://www.projo.com/news/content/BZ\\_9110219\\_02-20-08\\_VQ925EI\\_v23.3a8d868.html](http://www.projo.com/news/content/BZ_9110219_02-20-08_VQ925EI_v23.3a8d868.html)

- Phoenix, Ariz. November 3, 2008.

Phoenix fire dispatchers claim to be understaffed and that 9-1-1 calls from around the Valley are being put on hold. Frank Piccioli, a dispatcher and labor leader for the Local 2960 chapter of the American Federation of State, County and Municipal Employees, said Phoenix fire staffed four phone operators on Halloween night - down from the six to 10 preferred on busy nights. Piccioli pointed to two recent Scottsdale calls as examples of incidents that could have resulted in tragedy: Feb. 24: A woman called from a Scottsdale restaurant about someone who was choking. She was placed on hold. She called back and was again placed on hold. Piccioli said it was unclear what response was provided or what happened to the victim. July 20: A woman who called from south Scottsdale was put in a 9-1-1 queue as her husband lay unconscious near a pool. The call was picked up at one point by a supervisor, which is not standard practice. Scottsdale police phoned in information ahead of the woman because the call was on hold. The man survived, Piccioli said.

<http://www.azcentral.com/arizonarepublic/local/articles/2008/11/03/20081103alarmroom1103.html>

## Increasing Reliance on Emergency Services

For various reasons, some citizens are becoming more reliant on emergency services to become involved in personal situations, placing an increased demand on the system. The term “frequent fliers” is used to describe people that make repeated calls to 9-1-1 for problems that aren’t truly emergencies and could be handled by a routine visit to the doctor or pharmacist.

- In 2007, two Baltimore City residents were responsible for more than 60 emergency calls, another resident made 110 calls to 9-1-1, and yet another one made 147 such calls, the investigators say. Each 9-1-1 call requires EMS to dispatch an ambulance to the caller. Repeated 9-1-1 callers, Johns Hopkins researchers reasoned, may face problems such as lack of health insurance and access to routine medical care or an inability to navigate the labyrinth of healthcare services. Research supported this. <http://9-1-1.com/wordpress/2011/04/15/targeting-top-911-callers-can-trim-cost-improve-patient-care/>
- “As seen on the national level, the Copley Fire Department (CFD) has become susceptible to a problem that has become known simply as “frequent flyers”. Frequent flyers are those individuals who abuse the privilege of having an emergency medical response system available, using the system for non-emergent health care situations. Some of these individuals are known to use 9-1-1 for non-life threatening reasons frequently, sometimes even daily. Copley (OH) Fire Dept. 2010.” Identifying Causes for Emergency System Overload and Alternative Types of Medical Assistance.
- "Why do citizens request non-emergent medical treatment from Emergency Medical Services?" Through research, many reasons have been found to explain why the public turns to the 9-1-1 system to fulfill their medical needs for nonemergency situations. Issues such as socioeconomic factors, race-based disparities and availability of health care force some individuals to turn to emergency services when their situations would be much better treated by nonemergency health professionals (Patterson, 2006). Other reasons include the removal of liability, in the case of most nursing home facilities, the inability to make contact with a private physician, which includes the lack of suitable medical assistance after normal business hours. Copley (OH) Fire Dept. 2010.” Identifying Causes for Emergency System Overload and Alternative Types of Medical Assistance.
- Denver Post Dec. 29, 2009.  
Paramedics and emergency medical technicians here and around the country say a substantial number of emergency calls aren't emergencies at all but medical situations best handled in a doctor's office. "It's a problem, and it's getting worse," said Jerry Johnston, who just ended his term as president of the National Association of Emergency Medical Technicians and is an Iowa EMT. It's costly — an average



ambulance call is \$300 to \$400 — and it's potentially dangerous, Johnston said.” One gauge is that of the 84,837 emergency calls to Denver paramedics last year, about 30 percent didn't result in anyone being taken to a hospital.  
[http://www.denverpost.com/ci\\_14084125](http://www.denverpost.com/ci_14084125)

- Austin-Travis County, Texas. July 5, 2011. A 21-year-old woman called Austin-Travis County Emergency Medical Services 22 times between late February and early April. In a year's time, 10 patients called EMS for ambulances 831 times. They were among 367 "frequent users" who racked up nearly 8 percent of EMS's 83,477 ambulance runs between April 1, 2010, and March 31.

<http://www.statesman.com/news/local/austin-travis-county-ems-aims-to-match-habitual-1582075.html?printArticle=y>

## Hurricane Katrina

When disaster strikes, the potential for system overload issues increases exponentially. Hurricane Katrina exposed many problems in our existing 9-1-1 system that can be created by natural disasters or other large scale emergency situation.

- February 14, 2011.  
Laurie Flaherty from the National Highway Traffic Safety Administration – “During **Hurricane Katrina** 38 PSAPs were taken completely out of operation and those calls went nowhere,” she said. “With this new digital, IP-based system it is possible to reroute calls whether the case is an overrun of calls ... or the PSAP is taken out of operation.” Taken from a Communications Daily article “Move to Next-Generation 911 a Big Job, FCC Advisory Committee Told”
- September 6, 2005.  
Though the Jefferson Parish emergency communications system didn't go down completely, the damage from both wind and water was extensive. And while most police, fire and other "mission critical" radio systems have several layers of protection, the goal of any network is for it to never fall below what is known as "fail soft": the state where at least rudimentary communication exists. **Katrina**, it appears, has temporarily vanquished "fail soft" in many areas. The communications system in Plaquemines Parish, the most remote sliver of southeast Louisiana, appears to be "totally devastated," said Jeff Mattson, a Motorola spokesman. Plaquemines Parish's **9-1-1** center flooded along with the rest of the parish, and Motorola had a hard time even contacting emergency officials there. Plaquemines Parish is one of about 20 Motorola public safety customers in the **hurricane**-afflicted area. New Orleans is one of the few major population centers in the area that doesn't have a Motorola system. In Jefferson Parish, the **9-1-1** center and the sheriff's office had been reduced from talking on about 30 channels to four. Not only had wind toppled one of the parish's communication towers, but a land-based telephone line crucial to its **9-1-1** system had been knocked out by flooding.  
[http://articles.chicagotribune.com/2005-09-06/business/0509060092\\_1\\_motorola-schaumburg-based-gulf-coast](http://articles.chicagotribune.com/2005-09-06/business/0509060092_1_motorola-schaumburg-based-gulf-coast)
- November 8 2005.  
Early in the afternoon of August 29, as Hurricane Katrina bore down on the Gulf Coast, the phones inside the Louisiana State Police emergency operations center here began ringing with frantic pleas for help -- 467 that first day. As the floodwaters rose, so too did the calls -- from 1,875 on August 30, to 3,108 on August 31, 2005 and to 3,284 on Sept. 1. The vast majority came from 70 miles away in New Orleans, but what was strange was not the volume of calls or that they were made, but how they ended up so far away from the people who needed help. Floodwaters had forced 120 operators at the 9-1-1 center to abandon the New Orleans police headquarters. Emergency calls were supposed to be routed to the fire department but its main station was already abandoned.

<http://www.washingtonpost.com/wp-dyn/content/article/2005/11/07/AR2005110701334.html>

EXCERPTS FROM: Hurricane Katrina: A Nation Still Unprepared, Committee on Homeland Security and Governmental Affairs, May 2006

- Many police, fire, EMS dispatch centers, and 9-1-1 centers were rendered unusable by flood waters. The ACU-1000 interoperability devices, which provide limited interoperability by patching together different radio systems and were located within the Rosedale Fire Station, had to be abandoned because of flood waters, eliminating even that limited interoperable capability. Katrina's devastating impact on communications infrastructure around New Orleans forced first responders to rely on five or fewer mutual-aid channels – recognized by multiple agencies as channels to use when the coordinating electronics of the radio system fails – for voice radio communications. But around 4,000 people were competing to use that constricted capacity. The heavy congestion resulted in delays before communications could be established. In St. Bernard Parish, extreme winds damaged communications towers and antennas, while flood waters inundated the 9-1-1 call center and forced the evacuation of buildings housing communications for the Fire and Sheriff's Departments. All voice radio communications were lost except for very limited radio-to-radio communications. Plaquemines Parish lost the parish government communications tower and communications center. The Plaquemines Sheriff lost the 9-1-1 communications and dispatch center, and all towers. It would be three weeks before Plaquemines Parish had any means of communications. The Jefferson Parish Sheriff's Office lost the main tower supporting its communications system.
- During the Katrina crisis, 9-1-1 was unavailable for untold numbers of victims. At least 38 of the 9-1-1 centers in the region lost their ability to function during Katrina. When 9-1-1 systems go down, some call centers still reroute calls to other centers. However, telecommunicators on the receiving end did not have access to maps, data, and other information necessary to direct first responders to callers in need of help. Also, only the voice is rerouted, while critical data (e.g., electronic information about a call's point of origin) is not rerouted. Although in many cases, due to the widespread destruction in Louisiana, even voice signals could not be rerouted. The result: when citizens dialed 9-1-1, they got a busy signal. Meanwhile, the influx of thousands of first responders into the region greatly increased the workload for 9-1-1 call center operators who were themselves victims of the storm. Some left when their families evacuated. Those remaining operated under tremendous stress. A North Carolina 9-1-1 official helping the response effort in St. Tammany Parish, Louisiana, observed that no plan existed to bring additional, credentialed telecommunicators into the region, and that early Emergency Management Assistance Compact (EMAC) requests for inter-state assistance did not include 9-1-1 operators.

## APPENDIX A: NENA & CTIA 9-1-1 Statistics

### From NENA - 9-1-1 Call Volume:

- An estimated 240 million calls are made to 9-1-1 in the U.S. each year.
- According to the FCC, one-third are wireless calls; in many communities, it's one-half or more of all 9-1-1 calls.
- Population Covered: 99% (at least basic 9-1-1)
- Counties/Parishes Covered: 96% (at least basic 9-1-1)

### From CTIA - CTIA Wireless 9-1-1 and Distress Calls

| Topic                  | Dec-10 | Dec-05 | Dec-00 | Dec-95 |
|------------------------|--------|--------|--------|--------|
| E-9-1-1 Calls3 Per Day | >296K  | 260K   | 139K   | 55K    |

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