The Evolution of Emergency Dispatch in Oregon

The idea of a universal emergency telephone number was originally established in Great Britain. Since 1937, any individual in the United Kingdom has been able to dial 999, receive a response and have his or her request for assistance quickly and efficiently directed to the proper agency. In developing similar systems, other countries have their own three-digit numbers that an individual can call for emergency assistance.

Hermiston. The years from 1971 to 1976 saw the development of fifteen 9-1-1 systems throughout Oregon. By 1980 this number had grown to 37.

My first encounter with 9-1-1 happened in the early 70’s while working as a patrolman at the Forest Grove Police Department. Chief Al Bomberger wanted to be the first community in Washington County to have 9-1-1. It was a far cry from what we see today in a Public Safety Answering Point (PSAP). There were four 9-1-1 trunks, and each trunk had a princess telephone associated with it. When the ringer sounded, you would answer the first phone. If no one was on the line you answered the second, and so on until you found the active line.

It was clear to some that Oregon needed to stop this quilt-work approach to implementing 9-1-1; rather, it should be adopted as the statewide number for reporting emergencies.
It was clear to some that Oregon needed to stop this quiltwork approach to implementing 9-1-1; rather, it should be adopted as the statewide number for reporting emergencies. Three attempts were made over a four-year period from 1975 to 1979, to pass legislation mandating 9-1-1 as the statewide emergency number.

Unhappy with the progress made over almost ten years of active planning, in 1979 the Clackamas County Board of Commissioners formed a task force to study the problem and report their recommendation for establishing 9-1-1 countywide. Within a short period, the task force identified that the only way to establish 9-1-1 countywide was through state legislation.

A member of the task force was Ed Lindquist, who at the time was not only a fire captain with Clackamas County Fire District #1, but was also a member of the Oregon House of Representatives.

Ed was approached by the task force and asked if he would sponsor a bill to be introduced during the 1981 session which would mandate the implementation of 9-1-1 in Oregon. He said yes, and the rest is history.

One of the requirements was to find someone with experience in 9-1-1 implementation and legislation to assist in drafting a bill.

They found such a person in Maury Astley, Executive Vice President of the Oregon Independent Telephone Association. Maury’s experience before coming to Oregon included six years as 9-1-1 Coordinator for General Telephone in the state of California, together with four years on the California State 9-1-1 Advisory Committee. Because of his background Maury proved to be an invaluable asset to Oregon legislators interested in drafting a successful mandate.

With Lindquist’s ability to relate to and anticipate the needs of the public and private safety agencies as well as cities, counties, and other governmental agencies, and Astley able to identify the specific requirements for statewide implementation, the necessary forum to assemble a workable bill was established. Equally important to the success or failure of the bill was the support of Pacific Northwest Bell through their Public Affairs Representative, Gary Wilhelms, who served as a member of the Oregon House of Representatives from 1973-1979, House Minority Whip in 1977, and House Minority Leader in 1979. Between Astley and Wilhelms, all telephone utilities in Oregon were represented.

With all fronts covered (public and private safety agencies, local government, and telephone utilities), and everyone
involved in support of a statewide mandate, House Bill 3178 was born. On July 31, 1981 it was signed into law by the Honorable Governor Victor Atiyeh, with a mandate for implementation statewide by January 1, 1991.

Local planning efforts were necessary to develop plans to implement 9-1-1 in their jurisdictions. During the ten-year period from 1981 to 1991, the number of communications centers dropped from 293 to 91. Between 1991 and 2002, the number of communications centers in the state further declined from 91 to 72. Today there are 43 PSAPs.

In 1991 Oregon became the sixth state in the nation to have border-to-border 9-1-1 service. This was basic 9-1-1; the PSAP received the call and a telephone number associated with the call. The caller had to be able to tell the calltaker where they were located.

In 1991, after border-to-border implementation of 9-1-1 service was completed, there was another legislative mandate to implement enhanced 9-1-1 statewide by January 1, 2000. This mandate also included an increase in the 9-1-1 tax from 3% to 5%. The 2% increase was dedicated to funding the upgrade to enhanced 9-1-1 and the development of Telecommunicator training standards and certification.

In July of 1993 Oregon became the first state in the nation to establish minimum Telecommunicator and Emergency Medical Dispatcher standards and certification requirements with annual maintenance requirements through a program managed by the Department of Public Safety Standards and Training. Class #100 graduated on July 29, 2016, bringing the total Telecommunicators trained through this program to just over 2,000.

In January of 2000 Oregon became one of the first states in the nation to implement Enhanced 9-1-1 border to border. This was a giant leap forward in the technology available in the PSAP. Now the 9-1-1 call arrived with the name, address, and phone number of the caller, as well as notification of appropriate police, fire, and EMS responders for that location.

Other technologies were impacting PSAPs during this time. We began moving away from a paper-driven call-taking process to Computer Assisted Dispatch (CAD) systems. These systems automated a lot of the work that Telecommunicators had to do to get a call for service dispatched to the responders, saving not just seconds, but minutes. We moved from rural route and box addresses to a common addressing scheme which allowed us to introduce accurate location mapping into call processing.

**The Advent of Wireless Telephones**

In the early years of 9-1-1, I don’t believe any of us understood the impact wireless telephones were going to have on the PSAP. In 1991 the U.S. population was 253 million, and there were 7.5 million wireless subscriber connections. The number of wireless connections grew exponentially over the years. In 2015 the U.S. population was 320 million, and according to the Cellular Telephone Industries Association, wireless subscriber connections had grown to 378 million active devices.

A more significant number is that 48.3% of households have abandoned their wireline telephones and only use wireless service. This move has caused some real challenges for PSAPs, as location accuracy inside structures has been sketchy at best. I have numerous examples of people calling from inside structures and the location sent to the PSAP was inaccurate. We took one call from a citizen in Forest Grove reporting a street fight in front of her home, and the location received at the PSAP plotted her location 48 miles east of her home. Fortunately, in the vast majority of these wireless calls, the caller is able to give us the location from where they are calling.

I asked one of our Telecommunicators to make some test
calls on his cell phone from his residence, which is an apartment complex a short walk from the dispatch center. He made seven calls and all calls incorrectly mapped to the same area, 1,800 feet away from his location.

The FCC recently took action on this issue, requiring wireless carriers to provide a dispatchable location within 50 meters (164 feet):

- 40% of calls within 2 years (April 2017)
- 50% of calls within 3 years (April 2018)
- 70% of calls within 5 years (April 2020)
- 80% of calls within 6 years (April 2021)

We also saw a move away from contract wireless service to pre-paid wireless phones which were not paying Oregon’s 9-1-1 phone tax. Oregon Association of Public-Safety Communications Officials/National Emergency Number Association (APCO/NENA) began discussing the need to include pre-paid wireless in the tax in 2010. It was estimated that $6.8 million was being lost annually due to the move to pre-paid phones. In 2011 and 2013 legislation was introduced to require pre-paid wireless phones to pay the tax. Both attempts were unsuccessful. In 2014 HB 4055 was passed which did the following:

- Beginning on January 1, 2015, prepaid devices remitted the tax based on one of two methods outlined in the statute. This “carrier remit” collection methodology remained in place for nine months and generated an additional $400,000 in 2015. In the 2015-2017 biennium, the provisions of HB 4055 are expected to generate an additional $1.4 million.
- Beginning on October 1, 2015, the tax on prepaid devices was to be collected at “point-of-sale.” Retailers will be permitted to retain 2% of the tax to offset the administrative costs of this collection methodology.
The last quarter of 9-1-1 tax received was the first quarter which included point-of-sale receipts for pre-paid phones. Revenue was up almost $195,000 over the previous quarter, or a little less than 2%. It’s too early in the process to determine if it will increase over time.

Next Generation 9-1-1

With the movement to wireless devices, people started questioning why they could not send a text message to 9-1-1. Shouldn’t I be able to send photos and video of an incident to 9-1-1 as well? We do this daily with friends; it seems like we should be able to do it when there is an emergency. Our hearing-impaired community has been pushing for years to be able to text their 9-1-1 center instead of relying on TTY devices or relay services. This push to be able to communicate with 9-1-1 via text, photo, and video, as well as the aging of current wireline 9-1-1 networks brought about the move to Internet Protocol (IP) based Next Generation 9-1-1 or NG911.

The Oregon 9-1-1 Program Office is currently in the process of replacing their legacy frame relay 9-1-1 network with an IP-based network. This project is scheduled to be completed by the end of October of this year. While this network replacement work will put Oregon in a position to move to NG911, there is still much work that needs to be accomplished by the industry in order to realize a fully operational NG911 system. Therefore, the Oregon 9-1-1 Program Office has no timeline for implementation of NG911 in Oregon.

Due to an unknown timeline for bringing NG911 online, and public and political pressure to have texting to 9-1-1 available in their communities, the Portland Dispatch Center Consortium (PDCC) is working on a pilot project to make their PSAPs capable of receiving 9-1-1 text messages. PDCC members are PSAPs in Multnomah, Washington, Clackamas, and Columbia counties, and Clark County, Washington. This pilot also includes PSAPs in Astoria and METCOM in Marion County, with Willamette Valley Communications (Salem, Polk, and Lincoln Counties) to follow closely by the end of 2016. Work on this project has been taking place for the past year and is expected to go live in August 2016, with a strong public education campaign to follow starting after Labor Day.

2016 and Beyond

The move to NG911 will be like moving from the telegraph to the telephone. While it will have a nominal impact initially, as citizens become more familiar with these new capabilities their use will increase, similar to how PSAPs were impacted by the increased use of cell phones over the years.

It is difficult to estimate what the impacts of NG911 will be on the Public-Safety Answering Point (PSAP). Cheryl Bledsoe, Clackamas County Communications and I authored a document for our user community titled, “What Does Next Generation 9-1-1 Mean to Me – A Discussion Document.” The purpose of this document was to prepare our users for what we believe will be an increase in operational cost for the PSAP. If you would like to receive a copy of this document, email me at lhatch911@outlook.com.

So there you have it, 45 years of the history of 9-1-1 in Oregon. We moved from having to dial different seven-digit telephone numbers for law enforcement, fire, and emergency medical service (EMS) to where we are today. It is critical to recognize the role public safety and their counterparts have played in this process as well as other partners in law enforcement and fire/EMS. None of this would have been possible without the partnerships developed, and for that we thank them and look forward to moving into the future together.*

Written by Larry Hatch. Larry served as police chief and assistant fire chief for the city of Gaston, Oregon from 1973-1975, then joined the Forest Grove Police Department where he was a patrol officer and later a patrol sergeant. In addition he was the Service Division commander with responsibility for the Forest Grove Dispatch Center. In 1987 he was selected to serve as Assistant Director of the Washington County Consolidated Communications Agency, where he remained until his retirement in 2015.

Excerpts for the article were also taken from “The History of Oregon’s 9-1-1 Program” by David C. Yandell, Manager, Communications/9-1-1 Program, Emergency Management Division, Executive Department, State of Oregon, from July 26, 1982 to July 1, 1998.