November 23, 2010
Draft 10 of Consolidation Task Force Report

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Executive Summary

Introduction:
For years, Oregon has grappled with the complex issue of consolidating local government services as a way to save taxpayer dollars. In today's economic conditions that importance is even more elevated than in the past. Historically, 9-1-1 consolidation efforts have generally been successful through a combination of local initiative and resources in conjunction with limited state resources. Mounting budget pressures at the state and local levels have triggered a renewed interest in promoting shared services, either through the use of various policy tools, or potentially creating financial incentives to drive increased consolidation. Evidence concludes that consolidation has and will continue to work. Additionally, anecdotal evidence suggests that local initiatives do exist to develop future consolidation plans. The question at hand is how do we get there and what is the right number. This report was in response to provisions within SB 5536 from the 2009 legislative session which directed:

"The Military Department will conduct a study of the relative merits of Public Safety Answering Point (PSAP) consolidation throughout the state with the intent of reducing redundancy and creating a more cost-efficient delivery system"

In response to this direction and to provide a thorough report it necessitated the Oregon Military Department (OMD) to convene a broad-based group of stakeholders that includes public safety, local government and private sector partners and formed the Consolidation Task Force (CTF) to identify potential cost savings and overall impacts of consolidation. Since a PSAP (primary 9-1-1 answering point) is funded by rate and taxpayers via state and local systems, it is subject to both state and local operational requirements, and all facets of a PSAP rely directly on the other, there is no simple methodology for dissecting the inner-workings of PSAPs in Oregon.

PSAP's offer two key public safety services: taking calls, including 9-1-1 calls, and dispatching or transferring calls for dispatch by one or more public safety agencies. In addition, many PSAP's direct their personnel to provide additional services for their respective communities including administrative phone lines.

Background:
Historically, the PSAPs have undergone a substantial reduction as law codified the responsibilities. In 1981, the Oregon Legislature issued a mandate for statewide 9-1-1 services and instituted a 3% surcharge on subscriber telephone lines to support over 280 Primary and Secondary PSAP's. In 1991 the legislature increased the surcharge to 5% and mandated Enhanced 9-1-1 service to provide the callers address and the responsible first responder displayed to the PSAP call-taker in support of 64 PSAP's. In 1995 the 5% surcharge was converted to an approximate equivalent of a .75 cent surcharge to each phone device per month to provide the 9-1-1 program a more stable and predictable revenue source. Today, the revenue pays on average 30% of the operating budget for 49 PSAP's and the remainder is local revenue generated by local taxpayers through general fund, user fees or taxing districts.

Revenue:

On average the revenue generated from the .75 cent surcharge is approximately 10M per quarter and 80M per biennium. The distribution is defined in ORS 403.235 and ORS 403.240 which states 60.5 % to the PSAP's and the remainder is 35% to an Enhanced 9-1-1 Equipment account, 4% to OEM and .5% to Department of Revenue. In addition, ORS 403.115 mandates that 9-1-1 be the primary emergency telephone number within Oregon and consequently the ORS and subsequent OAR 104-080-0040 tied how the .75 cent surcharge will be used at the local level. A simplistic explanation is the 9-1-1 excise tax pays for the service and equipment that assists a PSAP to answer a 9-1-1 call. Once a PSAP receives a 9-1-1 call requesting help the information must be quickly relayed to police, fire, and medical providers. That transfer and directing the responding emergency service agency is now a dispatch function and in theory this is where state money ends and the local resources are employed to support the total Emergency Response function. It is important to distinguish between answering and dispatch as it applies to the funding to adequately paint the picture of the overall PSAP operation and the complexity of the decision making cycle for consolidation at the state and local level. As mentioned above, roughly 30% of the total cost of operations is supplied by the .75 tax collected by the state. The remaining costs are borne by the local government to support the total Emergency Response System in 49 locations statewide.

Another revenue opportunity that should be highlighted is taxing 'all' phone devices that can communicate with a PSAP. Currently, there is no mechanism for providers to collect from prepaid phones. Prepaid is approximately 20% of the wireless industry and growing. This continues to cause a significant strain on Oregon's 9-1-1 system. The continued growth of prepaid telecommunications without a proper 9-1-1 tax collection mechanism will lead to an overall degradation of service levels.

Expectations:

Much of current technology that exists today such as text messaging, video, and photos are not able to be received by PSAPs with their current technical capability. Providing these types of services to PSAP's is commonly referred to as Next Generation or NG 9-1-1 and will accommodate a growing expectation by our citizens to provide emergency services by common mobile phone device applications. The cost for NG 9-1-1 is not fully realized. The Office of Emergency Management is developing the contract proposals and a phased implementation plan to allow for the cost burden to be borne by the State under the Equipment Replacement Account which under the law receives 35% of the total revenue received under the current tax. This NG 9-1-1 contract will provide the state with a Private Managed 9-1-1 Emergency Services Internet Protocol Network, which will replace today's State Frame Relay Network. The new NG 9-1-1 network will allow NG 9-1-1 equipment at the PSAPs to connect to it and receive 9-1-1 requests for help via text messages, video and photos. There currently is no known cost amount of this network, since the Request for Proposal (RFP) has not been released yet. This RFP is projected to be released in 4th quarter of 2010. Our historical data from the State of Washington for phase 1 (July 2009) cost of a NG 9-1-1 network was $1.2 million. Phase 1 included connecting only the first seven PSAPs in the state to this new network and this cost only included monthly recurring charges for the first seven months of the contract. However, replacing an antiquated State Frame Relay Network to an Internet Protocol capable network will create new demands on the PSAPs. Alternatively, due to the cost of the new equipment, it is likely that moving to NG 9-1-1 will foster the migration to the centralization and

sharing of equipment in a regional concept which will assist future consolidation efforts. Of paramount importance is insuring the sanctity of the equipment account to meet our citizen's expectation. Any re-programming of funds from this account will delay this action as well as further delay any potential consolidation efforts.

Conclusion:

9-1-1 emergency communications services are a vital part of Oregon's public safety infrastructure. This report documents how consolidation has worked in the past, how multiple yet potentially unreliable revenue sources and broad governances or stakeholders does not create a single point of decision making, and the emerging technological advancements paired with rising public expectations provides a level of complexity that does not readily lend itself to a simple answer of who should or will consolidate their PSAP operations.

A well thought-out and strategic manner can lead to greater efficiencies and improved public safety. The barriers to implementing shared service arrangements are significant. This study shows that there are jurisdictions where recent consolidation occurred at substantial expense to the local jurisdiction without any intervention from the state. At the same time, there are other jurisdictions where it is less likely to occur. Consolidation is unlikely to occur under a state mandate. OMD feels the primary area for focus is the immediate need to develop the NG 9-1-1 system throughout the state to take advantage of technology to better utilize resources which could allow for "virtual consolidation" of various equipment supplied by the State for operations which in turn would likely reduce overall costs. Technology could also be used to build in needed redundancy which allows for critical live backup facilities. As a normal course of action it is very possible that the sharing of technology, equipment, and procedures could allow for easier consolidation of multiple agencies instead of solely utilizing virtual consolidation. According to the stakeholders comprised primarily of local 9-1-1 PSAP's it is their belief that there will be little if any cost savings by whole-sale consolidation. Rather, they conclude, that consolidation must be driven by local officials' interest in improved service and maintaining high standards of public safety.

Consolidation Task Force (CTF) Mission & Purpose

This task force was created by the Oregon Military Department as a direct result of the Oregon State Legislature's budget note requirement contained in SB 5536 (2009).

"The Military Department will conduct a study of the relative merits of Public Safety Answering Point (PSAP) consolidation throughout the state with the intent of reducing redundancy and creating a more cost-efficient delivery system. The Department is to report to the 2010 Special Legislative Session."

The Oregon Emergency Management State 9-1-1 Program 2010-2014 strategic plan contains the following goals:

- Enhance the quality of the statewide 9-1-1 system to ensure all citizens and visitors have access to public safety services that are reliable, redundant, secure, and diverse.
- Enhance Network capabilities statewide for emerging technologies, disaster recovery, and multi-jurisdictional cost efficiencies. Ensure the financial stability of the State 9-1-1 Program and public safety communications systems to sustain their long-term viability as state-of-the-art communications networks.

These goals were identified as significant considerations to provide guidance to the CTF in it's effort to respond to the Legislature's budget note.

In addition to the State 9-1-1's strategic plan the Oregon Military Department reviewed one of the program's largest stakeholders the Oregon Chapters of APCO/NENA's (Association of Public Safety Communications Officials/National Emergency Number Association—a professional organization comprised of 9-1-1 professionals employed by cities, counties and special districts) recently adopted strategic plan's visions for a progressive and comprehensive emergency number system which includes the following items:

- An efficient and adequately funded system
- Regionalized Public Safety Answering Points (PSAPs) at multiple locations
- Standardized and regionalized training throughout the State of Oregon
- Regionalized technology

In 1994 a consolidation study was prepared and presented to the 1995 Legislative Assembly. Since that time technology has rapidly advanced, public employee costs have increased significantly, program revenues have grown considerably, and efficiencies have been gained through consolidation efforts. As the 9-1-1 system prepares to enter a new era of next generation technology the Oregon Military Department feels it is appropriate to research and analyze potential consolidation efforts and identify barriers to future consolidation. The taskforce's mission and purpose is to provide the Legislature with a clear understanding of the 9-1-1 system as it operates today, how technology will play a role in future operations, and the tools to analyze the potential for additional consolidation and enhancements within the system.

Consolidation Task Force Workgroup

The CTF workgroup consisted of members broken down as follows:

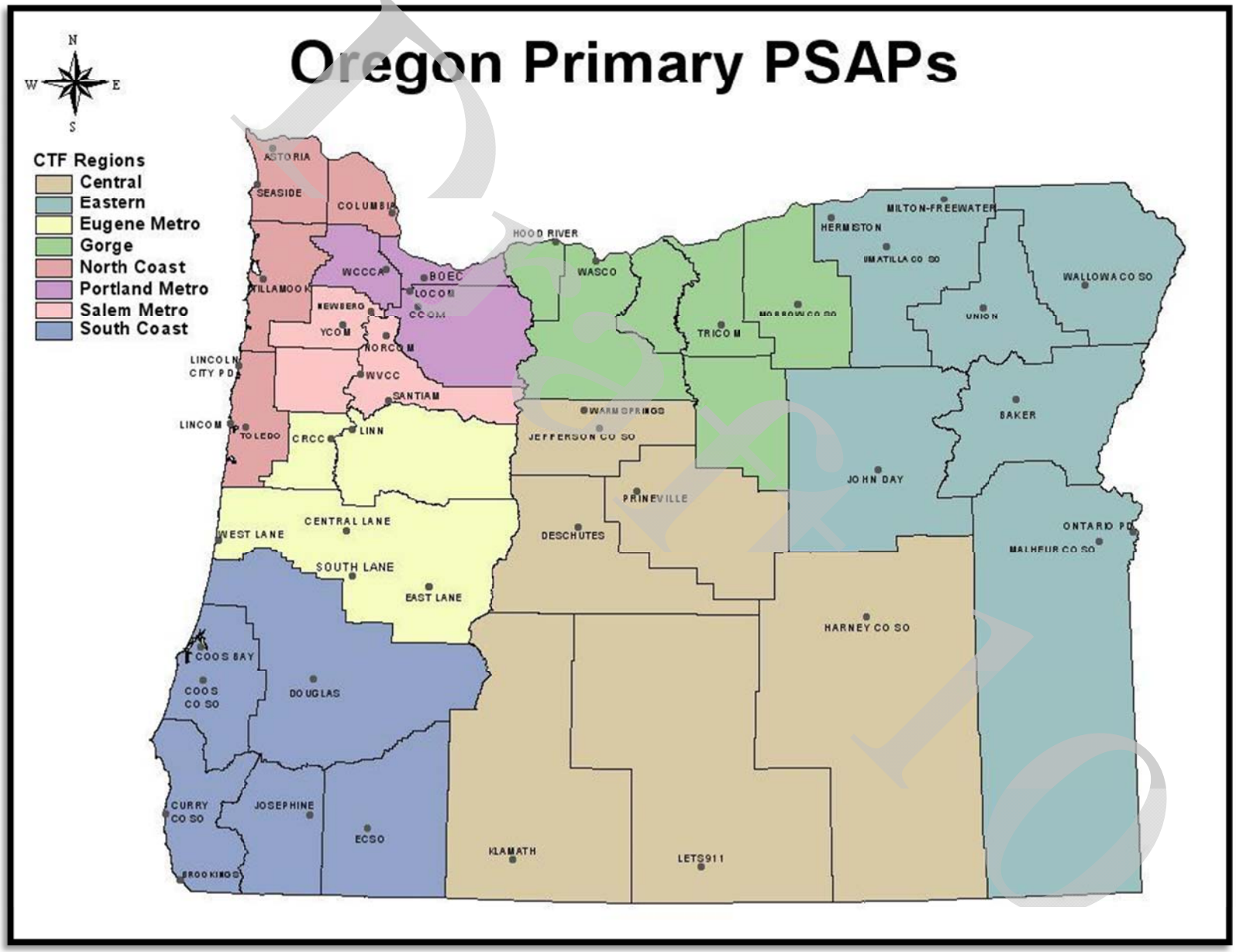
- 8 PSAP representatives with the highest potential involvement/vested interest in potential consolidations in their area, broken down by districts based on the AOC regions (see map on following page) as listed here:
    - **Region 1/Eastern -** Kathy Lieuallen
      Baker Grant Malheur Umatilla Union Wallowa
    - **Region 2/Central -** Tobie Reynolds
      Crook Deschutes Harney Jefferson Klamath Lake
    - **Region 3/Gorge -** Marita Haddan
      Gilliam Hood River Morrow Sherman Wasco Wheeler
    - **Region 4/South Coast -** Margie Puckett
      Coos Curry Douglas Jackson Josephine
    - **Region 5/Eugene Metro -** Oakridge PD Chief Gomez
      Benton Lane Linn
    - **Region 6/Salem Metro -** Rob Poirier
      Marion Polk Yamhill
    - **Region 7/North Coast -** Jeff Rusiecki
      Clatsop Columbia Lincoln Tillamook
    - **Region 8/Portland Metro -** Leslie Taylor
      Clackamas Multnomah Washington

- 6 Representatives from key stakeholder organizations:
    - **Oregon Association of Chiefs of Police (OACP) –** Myrtle Point Police Chief Rakosi
    - **Oregon Fire Chief Association (OFCA) –** Eugene Fire Chief Groves
    - **Oregon State Sheriffs Association (OSSA) –** Curry County Sheriff Bishop
    - **Association of Oregon Counties (AOC) –** Paul Snyder
    - **Special Districts Assn of Oregon (SDAO) –** Sally Jones
    - **League of Oregon Cities (LOC) –** Scott Winkels

- **2009 Oregon APCO/NENA:** President – Laura Wolfe, BOEC
- **Lobbyist - OR APCO/NENA:** Hasina Squires
- **Liaison from Governor's Office:** (invited, but not filled)
- **Oregon Military Department (OMD)**:
    - John Sneed 01/21/2010 - 02/18/2010
    - Ken Murphy 02/18/2010 – 06/01/2010
    - Dave Stuckey 06/01/2010 – Current

- **Private Stakeholders:**
    - Verizon Wireless - Richard Kossesan
    - Qwest - Ginny Lang
    - AT&T - Elise Brown

Meetings were held in person and via conference call an average of two times a month beginning in April 2009.


Oregon Primary PSAPs
N
W
E
S
CTF Regions
Central
Eastern
Eugene Metro
Gorge
North Coast
Portland Metro
Salem Metro
South Coast
ASTORIA
SEASIDE
COLUMBIA
WCCCA
BOEC
TILLAMOOK
LOCOM
NEWBERG
CCOM
YCOM
NORCOM
LINCOLN CITY PD
WVCC
SANTIAM
LINCOM
TOLEDO
CRCC
LINN
WEST LANE
CENTRAL LANE
SOUTH LANE
EAST LANE
COOS BAY
COOS CO SO
DOUGLAS
CURRY CO SO
JOSEPHINE
ECSO
BROOKINGS
HOOD RIVER
WASCO
TRICOM
MILTON-FREEWATER
HERMISTON
UMATILLA CO SO
WALLOWA CO SO
UNION
BAKER
WARM SPRINGS
JEFFERSON CO SO
JOHN DAY
PRINEVILLE
DESCHUTES
ONTARIO PD
MALHEUR CO SO
HARNEY CO SO
KLAMATH
LETS911

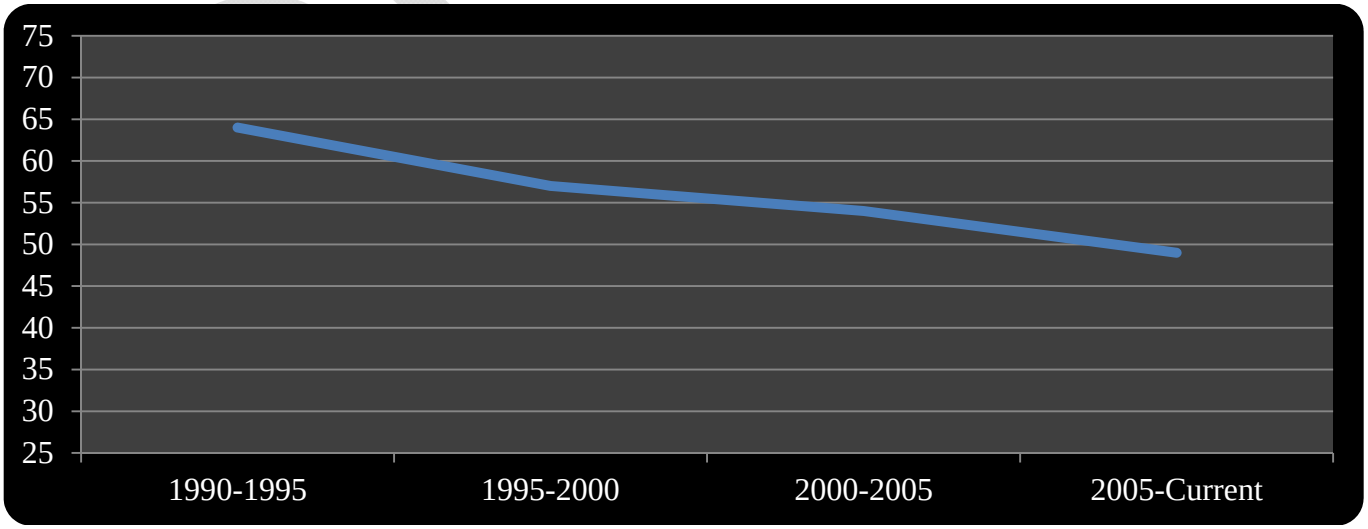
Historical overview of Oregon consolidations

The Oregon 9-1-1 Program Efficiency Study Final Report May 11, 1994 conducted by OEM/OSP reports that prior to Oregon's 1981 mandate for statewide 9-1-1 service, public safety communications took the form of a combination of state and local government operated emergency communication centers. At that time only a few 9-1-1 centers existed, each operated and funded by local government. The number of dispatch and/or 9-1-1 centers pre-mandate is estimated in the vicinity of 280.

Below is a breakdown of the change in the number of PSAP's occurring between 1990 and the time of this report (2010). These are broken down by regions, as defined in the membership section of this document.

*There have been **16 PSAP consolidations** documented between 1990 and 2010. However, the breakdown and graph below show all changes. In 2003, Region 3 had an increase in the number of PSAPs, with the addition of TRICOM. The total **change** in the number of PSAP's is 15.

Region	1990-1995	1995-2000	2000-2005	2005-Current
1	11	11	9	9
2	7	7	7	7
3	3	3	4	4
4	11	9	8	7
5	6	6	6	6
6	9	6	6	5
7	7	7	7	7
8	10	8	7	4
Total	**64**	**57**	**54**	**49**



Consolidation Reasons

Over the years, there have been many reasons for consolidation. Many of the participants are no longer available to obtain the information, and some information has been collected from parties that were involved with the agencies at the time, but not key players in the consolidation planning process. Each of the reasons below was offered as a selection, and more than one reason was typically selected. Although documentation is limited as to the reasons for past consolidations, this committee asked agency officials to select any factors contributing to their decision. The chart below reflects those anecdotal responses.

Staffing:
The belief there was a built in redundancy of duties and that consolidation had the potential to decrease total number of personnel.

Service Level:
The belief the service to the citizens and the agencies served would be improved by combining the agencies and streamlining duties, reducing or eliminating transfers of 911 calls, improving response times, improving call processing, and standardizing training of PSAP employees.

Technology sharing/savings:
The potential for cost savings in technical equipment, support, and maintenance agreements by sharing equipment. Smaller agencies often benefit from a larger agencies financial ability to purchase state of the art equipment.

Legislative direction or anticipated direction:
Action taken by politicians, and/or rumors of further actions to be taken by politicians, to force consolidation.

Local cost savings anticipated or realized:
The belief that a single, consolidated Center would provide overall cost savings for the public and individual user agencies. In 2009, the State of Minnesota formed a work group to create a guidebook for consolidation studies (see appendices for link). This document includes the following statement regarding cost savings under the section titled "Why Consider Consolidating": "Another primary reason cited for consolidation is cost savings. While cost savings are possible, two points are critical. First, not all consolidations result in cost savings. A common misconception is that consolidating will result in significant personnel reductions thus significant cost savings. Consolidations do not normally involve large staff reductions. The real cost savings come from the elimination of redundant and expensive technology such as CAD, 911 answering equipment, radio consoles, and logging recorders. The single set of technology and systems found in a consolidated environment reduces costs associated with procurement, connectivity, and maintenance costs.

Second, in those scenarios where cost savings are achievable the actual realization of the savings may not occur for several years. The consolidation process can be expensive and can generate substantial one-time start-up and capital costs for facility and technology needs. These costs delay the actual cost savings."

A Case Study - 2010 Jackson County Consolidation

During the construction of this report, Southern Oregon Regional Communications (SORC) and Rogue Valley Consolidated Communications (RVCCOM) finalized consolidation into a single entity in Jackson County, renamed Emergency Communications of Southern Oregon (ECSO). This consolidation was completed on July 1st, 2010. Because this consolidation was occurring during the writing of this report, the information is timely, yet some facts, such as any future savings, cannot yet be determined.

SORC/RVCCOM Local Revenue

RVCCOM was historically a division of the City of Medford, under the Medford Police Department and funded approximately 41% by their portion of the 9-1-1 tax revenue, with the remaining 59% coming from the City of Medford general fund.

SORC was an intergovernmental agency, as defined under Oregon Revised Statute 190, funded approximately 21% by 9-1-1 tax revenue, and the remaining 79% through User Fees paid by public safety agencies subscribing for dispatch services.

The consolidated PSAP (ECSO) is an independent government entity formed under ORS 190 and funded as described above with 9-1-1 tax revenues, and User fees.

Consolidated cost analysis

As part of the consolidation efforts, the City of Medford contracted with Mahoney Associates Consulting, LLC to conduct a consolidation cost analysis. This independent study revealed three main areas of consideration:

- Indirect Overhead Costs: According to the Mahoney study *"the only cost savings the City could expect would be those indirect costs associated with Technology Services resources used to maintain and administer the CAD system (approximately $75,000)."* It should be noted for the CTF report; any cost savings that may occur in this area will be at the local level, not a savings for the state 9-1-1 program. . (Note: Medford will not be reducing personnel in Legal, Finance, and the Human Resources Department that were used to support RVVCO. Consolidation does result in reducing the growth needs of future support services for the city of Medford).
- User Allocation: based on the User allocation formulas for the two separate Centers, the Users from RVCCOM can expect to receive decreases in allocations between 20% and 26% with the consolidation. However, under the same methodology, the City of Medford will see an approximate $57,000 bottom line financial impact.
- One-time Consolidation Costs: While the one time consolidation costs and the grants and earmarks used to pay for these are discussed in the consolidation study, for the CTF report purposes, these are broken down in the "one-time consolidation costs" section discussed later in this document.

SORC/RVCCOM 9-1-1 Tax Revenue

The following chart is a cost assessment from the State 9-1-1 Program (OEM) on estimated differences realized when co-locating SORC and RVCCOM. Although these costs are based on initial co-location rather than consolidation, there will be little, if any, changes in direct expenditures from the State 9-1-1 Program. This is largely due to the fact the same population is served, with the same number of 9-1-1 workstations, circuits, and trunks as well as equivalent maintenance costs for CPE.

Annual Costs (*5yr. Average*)	**Estimated Co-location Costs**	**Estimated Differences**
Customer Premise Equipment (CPE)		
SORC $ 146,895.72	$283,193.48	None
RVCCOM $ 136,297.76		
Customer Premise Equipment (CPE) Maintenance		
SORC $ 21,700	$41,500.00	None
RVCCOM $ 19,800		
Circuit Charges		
SORC $ 145,361.28	$265,311.25	None
RVCCOM $ 119,949.97		
Network Costs		
SORC $ 21,603.36	$43,206.72	None
RVCCOM $ 21,603.36		

Personnel

Combining personnel increased the responsibility of the Administrative staff, who previously only had to support 17 (SORC) or 24 (RVCCOM) personnel. In RVCCOM's case, they only had three administrative personnel, but shared the support positions such as Human Resources, Finance, and Technology Services, with the rest of the City. In the new Consolidated Center, administration increased from ten to thirteen to answer this need. The additional three positions allowed for a QA position, training manager, and an Administrative Assistant supporting management.

- **Support Personnel**

Under a city structure, support positions such as human resources, administrative support, and finance, are shared between various departments. Under the SORC structure, because there were only 24 total employees, the seven administrative positions were able to disperse the duties of human resources, finance, and supervision amongst those seven personnel. In a consolidated Center with 53 employees, seven positions are not adequate to perform all of these duties.

- **Quality Assurance/Performance Management**

Quality Assurance is a risk management tool the Executive Group felt should not be ignored. Consistent QA is a proven way to mitigate risk, ensuring accurate help to the citizen and limiting liability at the same time. While it is imperative to have QA, it is also time consuming. For example, to complete a medical QA requires listening to a call multiple times and scoring as per industry standards. After the QA person scores and comments on the call, the dispatcher is brought in to listen to the call and review the score.

Historically, both SORC and RVCCOM failed to meet the desire of the County QA Committee (appointed by the County Commissioners) to provide reports and quality control of medical calls, and failed to meet the requirements for industry accreditation. The recommendation for an agency the size of the consolidated 9-1-1 Center in Jackson County is 25 medical calls per week (NAEMD recommendations). Police and Fire calls have similar needs for performance management. Due to these needs, a QA position was added to the number of administrative positions.

Admin (Wages & Benefits)	Total Positions	Total Cost
SORC	7	$ 701,653
RVCCOM	3	$ 198,927
Combined	12	$1,201,728 (Increase of $202,239)
Dispatchers (Wages & Benefits)	Total Positions	Total Costs
SORC	17	$1,140,582
RVCCOM	24	$1,815,000
Combined	41	$2,825,584 (Decrease of $129,998)

One-Time Consolidation Costs

Much of the one-time costs for consolidation were covered by grants, or Federal earmarks received by participants in this consolidation. The cost of moving a 9-1-1 Center is significant, from building an adequate facility, to moving existing equipment, or purchasing upgraded equipment to make the Center function properly. In the Jackson County example, without the generosity of the County funding the new facility, as well as the Federal Earmarks received by the City of Medford along with other grants received in the County, consolidation would not have been possible for many years.

New Building

With any PSAP consolidation, one of the first considerations is whether or not either Center has an adequate facility to consolidate into. The facility must be large enough, stable enough, and secure enough to house the consolidated PSAP. The building must meet minimum requirements for wiring and cabling, as well as meeting essential service standards for earthquakes, security, etc. Currently, most PSAP's in the state of Oregon do not meet essential service standards. In the example of the SORC/RVCCOM consolidation project, neither facility was able to meet these needs so Jackson County generously agreed to build a sufficient building with county funding. This facility was completed on November 16, 2009, at a cost of $7,078,488.91. The County General fund contributed $6,819,638.91, the State of Oregon contributed $250,000 in the form of a Public Safety Interoperability Communications Grant and Oregon Energy Trust contributed $8,850 toward energy efficient lighting etc. These numbers do not include other grants acquired by the City of Medford.

In the past, SORC was able to lease space in a county building for $1 per year. RVCCOM resided within the city building and did not pay a lease payment, but did share in maintenance costs via charge-backs.

Lease Payments	Separate	Together
SORC RVCCOM	$1.00/Annual – no increase None	 $31,166 – increase annually by CPI
Utilities (Gas, electric, sewer, water, etc)	Separate	Together
SORC RVCCOM	$18,000 (included maintenance by County) • *See explanation below	$86,000 – approx.
Janitorial	Separate	Together
SORC RVCCOM	$6,420.00 • *See explanation below	 $28,680 annually

*It is difficult to determine the actual savings that may be seen in the future for the City of Medford. Services such as utilities, janitorial, and technology services are shared amongst multiple divisions within the city. As stated in the consolidation study referred to earlier in this document (Mahoney study), the only cost savings the City may see, are those indirect costs associated with Technology Services resources used to maintain and administer the CAD system (approximately $75,000)." These savings would be seen on a local level, not out of the State 9-1-1 fund.

Equipment Costs for New Facility

The one-time moving costs to relocate RVCCOM and SORC into the new facility located at the airport were projected to be $727,000. Jackson County contributed $110,000 in grant monies towards these costs leaving a balance of $617,000. Medford Police received a Federal Earmark for a $700,000 to defray the remaining moving costs thereby leaving no financial impact to either Center.

Console Furniture	Total Cost	Paid By
16 Positions	$153,082	Part by Homeland Security Grant Part by Federal Omnibus Earmark
Combiner System	Total Cost	Paid By
Enables SORC radios and 4 of RVCCOM radios to be housed in same facility. Note that RVCCOM radios are only for back-up purposes	$73,271.25	Paid by Jackson County
Network Consolidation	Total Cost	Paid By
CAD and Admin PCs for 16 dispatch positions, switches, servers, etc.	$110,271	Paid by Federal Omnibus Earmark
Gold Elite Radios	Total Cost	Paid By
3 New positions and upgraded 5 positions	$263,544.38	$64,433 paid by Jackson County $199,111.38 paid by Federal Omnibus Earmark
Tower, Generator	Total Cost	Paid By
150 Foot Tower, Foundation and 600kw Generator	$250,000	Paid by PSIC grant (Jackson County paid 20% match)
Admin Phone System	Total Cost	Paid By
Shortel Admin Phone System	$36,371.97	Paid by Federal Omnibus Earmark

Computer Aided Dispatch (CAD) Consolidation

In any consolidation between PSAP's, computer systems need to be combined into a single system. In Jackson County, the cost to combine the two existing CAD systems into a single CAD was quoted during the writing of this report at just over $510,000. It is believed future savings will be realized in ongoing maintenance with a consolidated CAD system; however, since this consolidation was just reaching completion during this report, those figures cannot yet be determined. As referred to in the above consolidation study section, these savings would be on a local level only since 9-1-1 funds are not used to support CAD functions.

Jackson County Consolidation Summary

In February 2010, within one week of SORC and RVCCOM co-locating into a single room, non-monetary efficiencies were already being seen. A case in point was an incident within the city limits of Medford in which a car salesman was providing a test drive and was shot during an attempted abduction/car-jacking. After shooting the salesman and leaving him in a church parking lot, the suspect fled in the vehicle into the County jurisdiction. Being in the same room allowed the dispatchers to quickly communicate with each other and ensure field units were informed in real time of any updated information. With this coordination, the suspect was quickly taken into custody by Deputies. Both Jackson County Sheriff Winters and Medford Police Chief Randy Schoen publicly expressed the noticeable improvement in communications during this multi-agency event.

A second example was seen by multiple fire agencies working a 4 alarm structure fire on May 5th, 2010. Although consolidation was not yet complete at this time, the dispatchers were co-located in the same room, and able to communicate verbally back and forth to coordinate the event without having to call and transfer information as more resources were needed. Management from both centers received comments from field units about the improved communications.

Although, as of this writing, it is too early to tell if there will be any financial saving realized with this consolidation, it does appear there are efficiencies seen in service levels. To date, all savings seen, or anticipated, have been on the local level with little or no affect on the state 9-1-1 tax. Using figures from the Consolidated Center proposed budget for FY 2010-2011, and the actual figures from 9-1-1 funds received for the previous year, the percentage of total budget covered by the 9-1-1 tax drops from 39% (RVCCOM) and 21% (SORC), to 18% for a single consolidated 9-1-1 PSAP in Jackson County.

It is important to note, the PSAPs in Jackson County were fortunate in receiving the generosity and support of the County bearing all of the financial responsibility of building a new facility to make consolidation possible. This is not always possible in many other areas around the State of Oregon.

A Case Study
2003 Municipal Consolidation Between
The City of Lake Oswego and the City of Milwaukie Public Safety Answering Points

PSAP Background:

The City of Milwaukie Public Safety Answering Point consolidated with the City of Lake Oswego Communications Center on April 1, 2003. The City of Milwaukie had been investigating the merits of consolidation for a number of years in response to both political and operational needs. The City of Milwaukie and the City of Lake Oswego began exploring opportunities for sharing service components in the late 1990's. Initially, their first cooperative effort involved an IGA for sharing a computer manager and a backup plan. From 1999 to 2003 when consolidation took place, numerous conversations occurred over consolidation of services between the two entities. This case study is a look at the documents from 1998 to 2003 addressing this consolidation effort.

As of this writing the City of Lake Oswego operates a consolidated dispatch center serving the cities of Lake Oswego, West Linn, and Milwaukie with portions of Lake Oswego in Multnomah, Clackamas, and Washington counties. The dispatch center serves the Lake Oswego Police and Fire Departments (including contract areas outside the city limits but served under fire protection agreements with the City of Lake Oswego), the West Linn Police Department, and the Milwaukie Police Department.

Legislative Background:

Dating back to the legislative request in 1991 and again in 1993 for a study of efficiency in the 9-1-1 reporting system in Oregon, many organizations delivering 9-1-1 service have acknowledged that the legislative oversight of the 9-1-1 tax revenue prompts questions about efficient use of the tax revenue. Fiscal responsibility is certainly an important goal at all levels of government balanced with service delivery. In the preface to the final report dated May 11, 1994, titled "9-1-1 Efficiency Study Final Report" this objective is clearly stated, "Members of the legislature and representatives of local government have questioned the fiscal appropriateness of 60 primary public safety answering points and the manner in which agencies participate in 9-1-1." At the time of this study there were 5 public safety answering points in Clackamas County: Canby, Gladstone, Lake Oswego, Milwaukie, and Clackamas County.

In 1995 the legislative requirement in Section 14, Chapter 276, Oregon Laws 1995 required Public Safety Answering Points (PSAPs) in counties that have multiple primary PSAPs to provide a written report to Oregon Emergency Management (OEM) demonstrating the benefits of having multiple primary PSAPs in those counties. The benefits to be demonstrated for multiple primary PSAPSs are defined in the law as "providing better service or cost savings that has been verified." These reports were due by December 31, 2000. As Chief Larry Kanzler, Milwaukie Police Chief, stated in the delivery of the City of Milwaukie's State-Mandated 9-1-1 Survey Response on June 23, 2000, "I hope that this information effectively describes the need for local 9-1-1 dollars going back to the representative PSAP and that consolidation, at the cost of service, is unacceptable." At the time of this study, there were 4 public safety answering points in Clackamas County: Gladstone, Lake Oswego, Milwaukie, and Clackamas County.

As a result of legislative action on HB3977 in the 2001 session, Chief Larry Kanzler made this statement to the City Council of Milwaukie on December 17, 2002, "There are no viable alternatives. Either Milwaukie takes a proactive approach and selects the dispatch center to be affiliated with, or the implications of HB 3977 will designate a dispatch center to support Milwaukie. If we allow our dispatch service provider to be designated by the State of Oregon, who has no vested interest in the delivery of services to our community, the destiny and livability of our community is being decided by non-decision on our part." The City of Milwaukie consolidated operations with the City of Lake Oswego on April 1, 2003. In the following legislative session, *HB 3154 effectively repealed HB 3977, on January 1, 2004.*

While the October 2000 report by Gary E. Boyd & Associates, Inc. along with William L. Doolittle & Associates, Inc. titled "Multi-PSAP County Report Evaluation Study" identifies redundancy as a potential advantage of a Multi-PSAP County model on page ES-3, "Nevertheless, there remain special situations where, for example, multiple PSAPs in a county can provide valuable backup and redundancy to each other, or where the benefits of further consolidation beyond that already achieved are marginal in comparison to the costs." The current directive in the budget note contained in SB 5536(2009) is specific to reducing redundancy, "The Military Department will conduct a study of the relative merits of Public Safety Answering Point (PSAP) consolidation throughout the state with the intent of *reducing* redundancy and creating a more cost-efficient delivery system."

LOCOM/City of Milwaukie Local Revenue Then and Now

Both organizations were divisions within their municipal police departments. LOCOM is a division of the City of Lake Oswego Police Department. Funding has been from the City of Lake Oswego Public Safety Fund, and starting in 2009 the General Fund. In the 2000 study, Lake Oswego reported 19% of its total funding was provided by the 9-1-1 tax revenue. The City of Milwaukie supported their own police dispatching within the communications division of the police department. In the 2000 study, the City of Milwaukie reported 14% of its total funding was provided by the 9-1-1 tax revenue.

In the 2000 study the worksheets provided to participants had 2 components regarding funding: one was percentage of overall revenue of the PSAP was provided by the 9-1-1 tax; two was 9-1-1 tax revenue as a percentage of (just) 9-1-1 costs. The City of Lake Oswego reported 97% of its 9-1-1 tax revenue as a percentage of 9-1-1 costs; the City of Milwaukie reported that 71% of its 9-1-1 tax revenue as a percentage of 9-1-1 costs.

Today, the Lake Oswego Communication center reports the 9-1-1 tax revenue averages approximately 21-24% of overall funding over the last 4 years (the 07-08 fiscal year was not considered because of the one-time special distribution.)

LOCOM - Milwaukie Consolidated Statistics

PSAP YEAR	LOCOM 2000	MILWAUKIE 2000	COMBINED 2004 (net loss or gain)	COMBINED 2010 (net loss or gain)
9-1-1 Funding				
9-1-1 Circuits	4	3	7 (0)	8 **(+1 wireless)**
Call taking/ Dispatch Positions	4	2	6 (0)	6 (0)
LOCAL FUNDING AND PER CAPITA 9-1-1 DISTRIBUTION				
Non-emergency Lines	20	12	24 **(-8)**	28 **(-4)**
Operations Staff	12.5	6.5	15.5 **(-3)**	15.5 **(-3)**
Administrative Staff	1	1	1 **(-1)**	1 **(-1)**
Technical Staff	1	0	1	2 **(+1)**
Overall Funding				
Budget	$1,065,338	$547,506	$1,762,000 (+$149,156)	$2,029,000

Shannon – is there a funding piece that goes with this from the state?

Consolidation Factors

- **Personnel –** staffing levels, employee turnover, local geographic knowledge, number of staff on duty
- **Technology** – radio system, computer aided dispatch, mobile data, statistical reporting, and backup plan
- **Service** – customer service, reputation among internal and external users
- **Support** – ancillary support for law enforcement, public works, code enforcement, warrant confirmation, LEDS entries and teletypes
- **Fiscal Impact –** projected costs and/or savings at the local level

At the time of consolidation, the City of Milwaukie did not have a computer aided dispatch system and therefore did not have mobile data computers in the field. They were a user on the Portland 800 MHz system radio system. They staffed with a single dispatch employee for a majority of hours of the day. Some of the documented benefits of consolidation were: additional staffing (LOCOM routinely staffs at least 3 positions); the addition of computer aided dispatch and mobile data in the field; along with the accommodation to remain on the Portland Radio system.

In a report to the Milwaukie City Counsel in March and again in May of 2000, Chief Kanzler stated, "My recommendation to the City council then as it is now, is to enter an intergovernmental agreement (IGA) with the City of Lake Oswego to provide dispatch services for the City of Milwaukie." But even with the endorsement of the Chief of Police, he indicated the following in his delivery of the state-mandated 9-1-1 survey on June 23, 2000, "The report clearly identifies Lake Oswego as the agency capable of providing the best service for our particular needs and at a significantly reduced cost from our current operating cost. None-the-less, the Milwaukie City Council received significant public comment demanding that Milwaukie retain its dispatch center. Although a final Council decision is yet to be made, cost savings over accountability and control will cause a great deal of controversy."

LOCOM Consolidation Standing in 2010

In 2009, the City of Lake Oswego and the City of Milwaukie amended their original 5 year intergovernmental agreement for another 5 years. Today the relationship continues to be strong and has built further functionality with regional dispatch partners using federal grant funding for a CAD to CAD interface allowing calls for service to flow more seamlessly between dispatch organizations enhancing interoperability of data; backup plan development, implementation, and testing for a fully functional backup agreement with Clackamas County Communications (CCOM).

The service model at LOCOM is still critical. In addition to answering 9-1-1 and non-emergency phone lines, staff dispatches police and fire services on both the Clackamas 800 radio system and the Portland 800 radio system, provides for mobile data in the field, makes entries into the Law Enforcement Data System, holds warrants for all three municipalities, and supports animal control, code enforcement , and parking enforcement. LOCOM continues to provide for in-person call answering of all 9-1-1 calls whether they are wireline or wireless (in the Portland Metro area all adjoining dispatch centers utilize a cell filter on wireless calls requiring the caller to press an additional number or make a voice statement to have their call delivered into the system and some centers utilize an automated attendant to queue 9-1-1 calls for the next available call taker.) At the time of this case study there are 2 public safety answering points in Clackamas County: Lake Oswego and Clackamas County.

Funding: Brief History of Funding for PSAP/Dispatch Centers

Background

- In 1981 the Oregon Legislature issued a mandate for statewide 9-1-1 services and instituted a 3% surcharge on subscriber's telephone lines. At that time there were over 280 Public Safety Answering Points (PSAPs) in Oregon with only a few providing basic 9-1-1 service and none providing Enhanced 9-1-1 service.
- The 1991 legislature increased the surcharge to 5% and mandated Enhanced 9-1-1 service (9-1-1 caller's address and responsible police, fire and EMS provider displayed to the call-taker).
- In 1995 the 5% surcharge was converted to an approximate equivalent 75 cent surcharge to provide the 9-1-1 program with greater revenue stability and predictability.

Revenue Distribution

- Sixty and one-half percent (60.5%) of the revenues are distributed to counties and cities for operation of the state's 49 PSAP's. Distribution is in proportion to population, except that no county receives less than 1% of the distribution. The funds may not be used for PSAP operations unless they are directly related to 9-1-1.
- Thirty-five and one-half percent (35 %) of the revenues are managed by Oregon Emergency Management (OEM) a Division of Oregon Military Department to pay for PSAP common network services, Federal Communications Commission Phase I and II wireless services, costs associated with the Enhanced 9-1-1 program which includes network, database, equipment and other costs related to providing state-wide wire line and wireless 9-1-1 services.
- Four percent (actual costs or no more than 4% maximum) of revenues may be used by the Oregon Emergency Management to pay for OEM 9-1-1 program administration and Telecommunicator training at the Department of Public Safety Standards and Training (DPSST).
- One-half percent (actual costs or no more than 0.5% maximum) of the revenues are distributed to the Department of Revenue for administrative processing cost recovery.

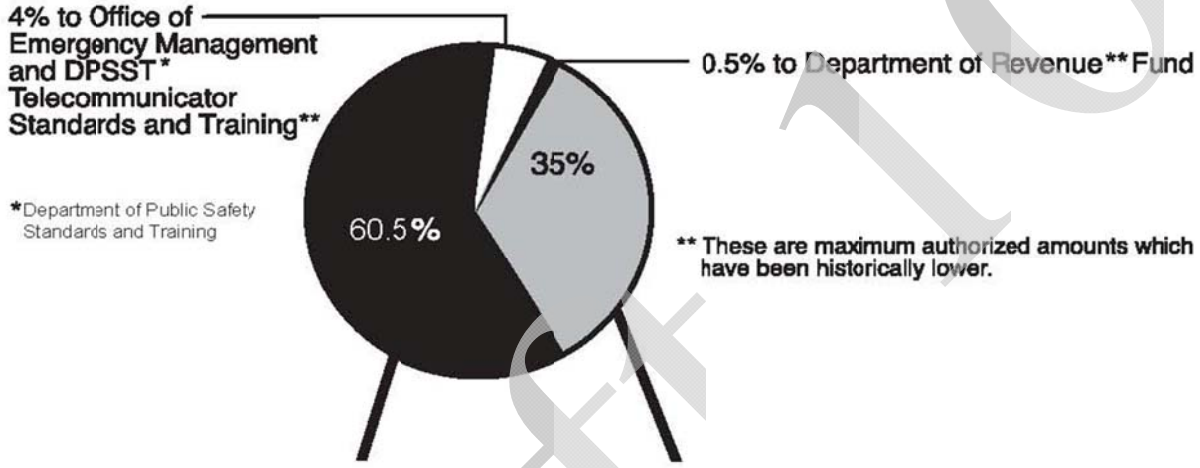
Revenue Change

- The Oregon Legislature during its 2002 third special session, redirected $9 million from the Emergency Communications Account to the state's General Fund to help reduce the state budget shortfall. This represented an approximate 14% revenue reduction during the 2001-2002 bienniums.
- During the 2009 legislative session (SB 581) $3.61 million in state Enhanced Account and Equipment Replacement funds were redirected from the 2007-2009 biennial budget. Despite the fact that these funds were not part of the city/county distribution of revenues this diversion removed funding from PSAP equipment upgrades and network costs.
- An estimated $817,000 in Emergency Communications Account interest earnings from the 2009-2011 biennial budget will be diverted. This practice will continue unless statutory changes are made eliminate this interest earnings diversion. PSAPs would have received approximately 58% of these funds.

The Funding of 9-1-1 Public Safety Answering Points (PSAPs) in Oregon

(2009)

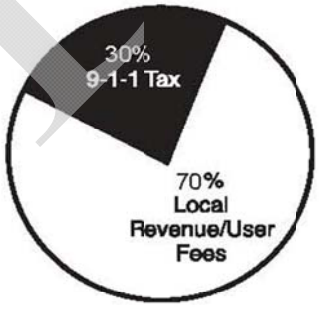
Allocation of the 75¢ Tax on Access to 9-1-1 Services



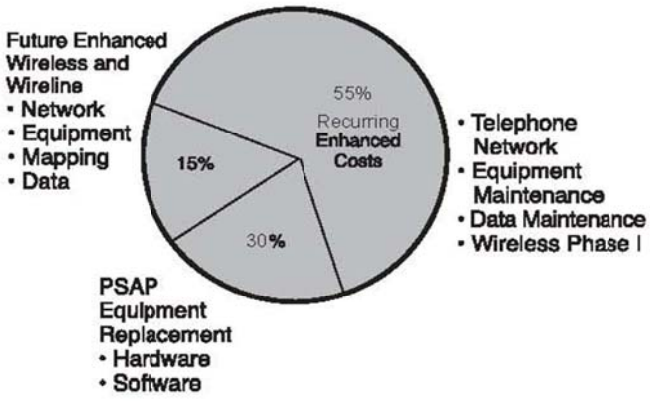
60.5% to 9-1-1 PSAP Operations

35% to Enhanced 9-1-1 Subaccount

Typical 9-1-1 PSAP Operating Costs are Funded



Enhanced 9-1-1 Subaccount Expenditures



How much of a PSAP's overall budget is covered by the 9-1-1 tax?

PSAP's across Oregon vary in their dependence on the 9-1-1 tax distribution. The variances may depend on the local agencies ability to pay, or the governance structure of the PSAP. Governance structures range from City or County government, Special Districts, or ORS 190. These will be discussed in more detail later in the report.

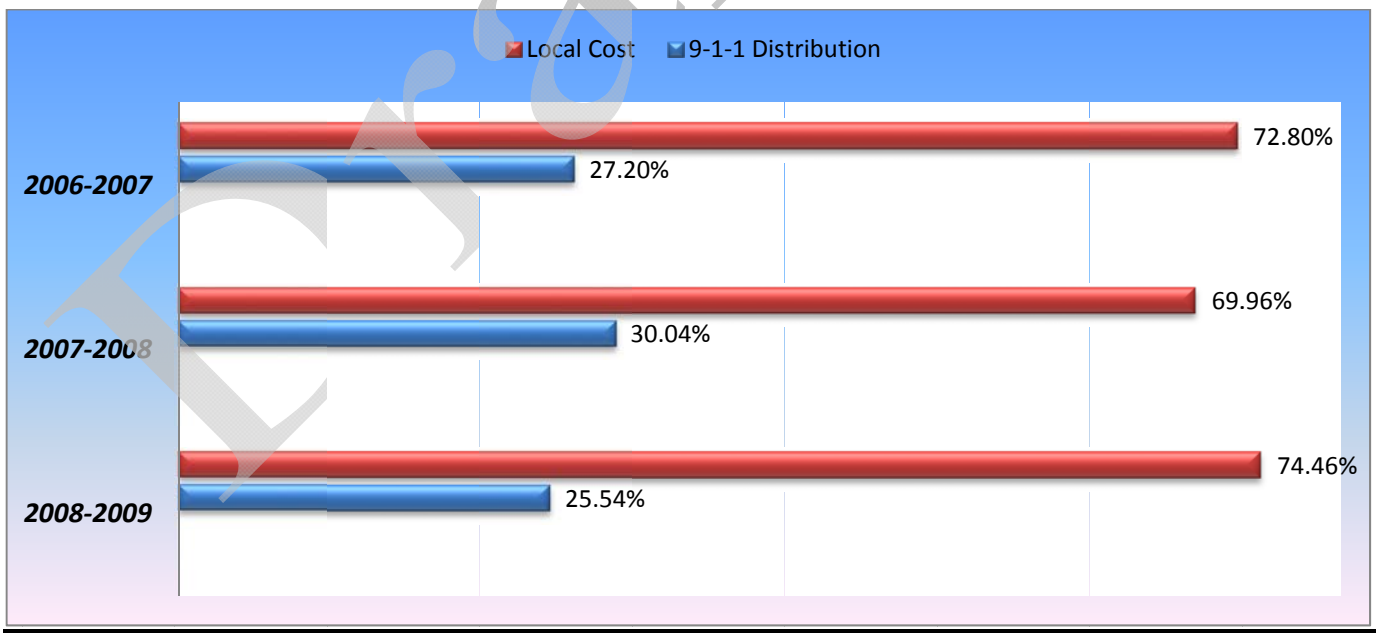
The revenues provide approximately thirty percent (30%) of each 9-1-1 PSAP's total budget. Approximately seventy percent (70%) of costs are paid for by local taxpayers through general fund, user fees or taxing districts

Example:

During the fiscal year 2007-2008, across the 50 PSAP's, the percentage of budget covered by 9-1-1 Tax distribution ranged from 4.50% to 94.10%, for an average of **30.04%.** This leaves the remaining 69.96% of the budget to be covered by local jurisdictions. ****The 2007-2008 fiscal year includes a special distribution sent to PSAP's from money recovered during OEM's move to the Oregon Military Department.***

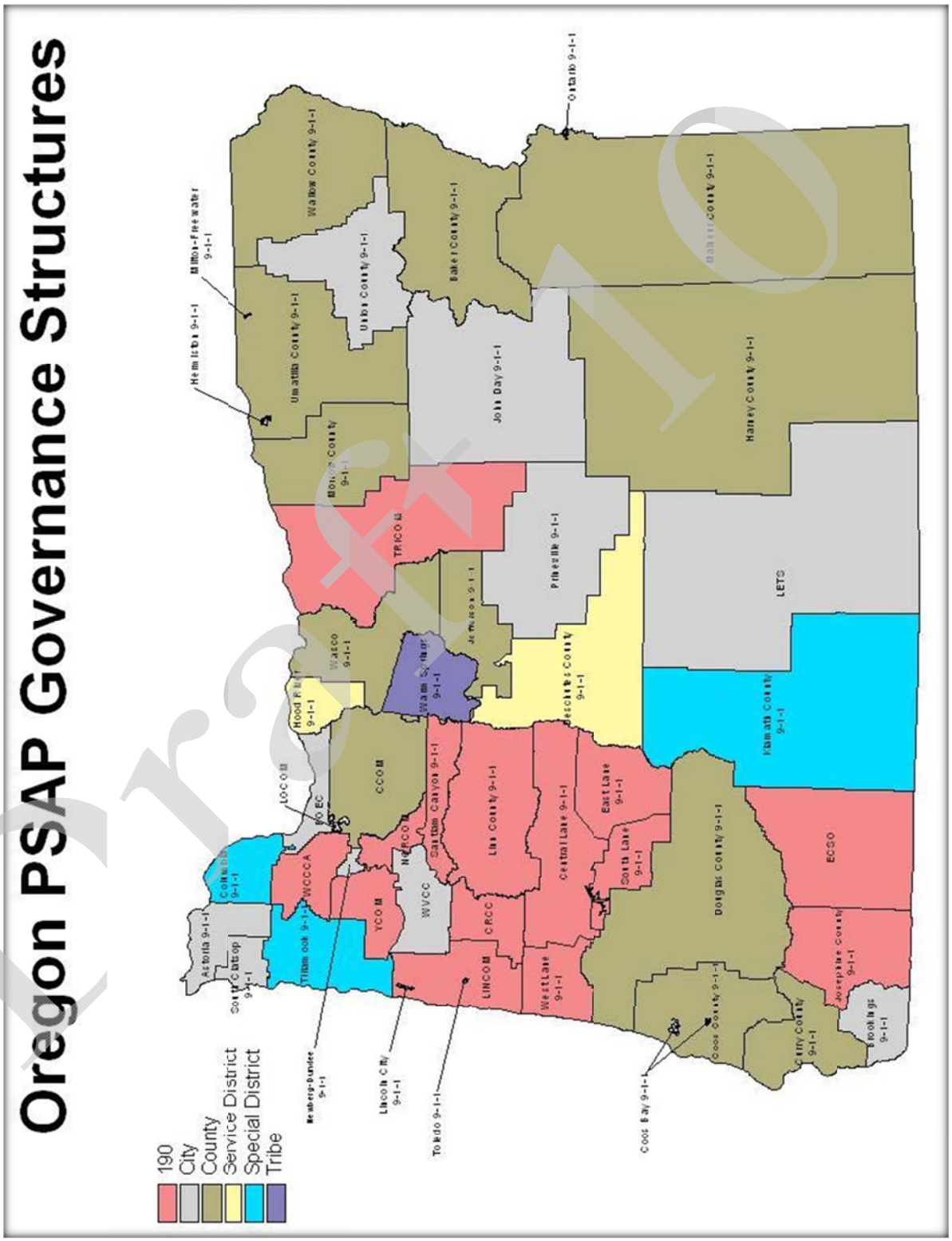
During the fiscal year 2006-2007, these percentages ranged from 4.8 to 88.8%, for an average of **27.20%.** (72.80% local coverage)

** Percentages are based on total PSAP revenue attributed to 911 Excise Tax Distribution. The inability to determine accurate percentages using overall 9-1-1 tax (including equipment covered by the equipment replacement fund) is due to the fact not all PSAPs build equipment costs into their budgets.*



***2008-2009 data was determined by OEM through budget reports with information provided by the PSAPs, of which 48 of the 50 PSAPs participated.*

Governance Structure



Oregon 9-1-1 PSAP/Dispatch Center Governance & Funding Structures

Oregon consolidated 9-1-1 organizations are structured in the following six different ways:

1. **ORS 190**
2. **City - ORS 190**
3. **County - ORS 190**
4. **Emergency Communications Special Districts**
5. **Emergency Communications Service District**
6. **Tribe.**

ORS 190, City-ORS 190, and County-ORS 190

Oregon Revised Statute (ORS) 190 authorizes governments to provide services to each other defined by intergovernmental agreement. PSAP and dispatch center organizations formed under the authority of ORS 190 are unique to each jurisdiction and are the most common form of governance for consolidated 9-1-1 organizations in Oregon.

By intergovernmental agreement authorized under ORS 190, cities and counties provide services to other local public safety agencies such as fire districts, law enforcement or ambulance services. Such is the current situation in Clatsop County where Seaside 9-1-1 and Astoria 9-1-1, as departments each within a city, provide 9-1-1 call answering and dispatch services to their own police as well as the sheriff, fire, ambulance, public works, and other public services. Such is also the current situation in Clackamas County, where a department within the county provides services to city police, fire districts and other local agencies.

Another common structure authorized under ORS 190 is when an independent separate agency is created by intergovernmental agreements to provide services for a group of agencies. Washington County Consolidated Communications Agency (WCCCA) is one example. This type of organization may enter into contracts for a variety of services and may buy, own, sell or lease property.

Governance for all three types of communications agencies formed under the authority of ORS 190 is identified by the agreements entered into by the parties. Usually a governing body will consist of representatives of the organizations that are being served and provide the funding, primarily by user fees. User fees are often based on activity statistics offset by 9-1-1 excise taxes, and may incorporate other considerations such as property values or population served. This type of organization, as a separate agency, has no authority to apply for or accept many grant awards, so depends upon on one of its user agencies to submit and administer grants on its behalf.

Emergency Communications Service District & Emergency Communications Special District

The primary difference between a service and a special district is its governance – a service district is governed by the county commission, a special district is governed by an elected board of directors. Both have statutory advisory committees to provide advice and direction to the governing boards and budget committees.

Communications Districts may be user fee funded or funded by voter approved permanent tax rate and/or renewable local option levy. Distribution of 9-1-1 excise tax revenue comes from cities and county governments within the district jurisdiction. Capital funding may also be secured by general obligation bonds, revenue bonds or certificates of participation. Taxing authority is subject to limitations such as compression, enterprise zone & urban renewal district revenue diversion and other revenue losses. Expenditures are limited to the specific purpose of the district, as defined by statute.

Emergency Communications Service District: this type of organization is authorized under ORS198 and 403 and is governed by the county court or board of county commissioners. Statute requires that an Advisory Committee consisting of the chief executive of each private or public safety agency within the jurisdiction of the district must meet at least quarterly and provide advice and direction to the governing board.

Emergency Communications Special District: this type of organization is authorized under ORS198 and 403 and is governed by 5 or 7 member Board of Directors elected by geographic zone (based on precinct/population) within the jurisdiction (may be countywide, part of a county, more than one county). Statute requires that an Advisory Committee consisting of the chief executive of each private or public safety agency within the jurisdiction of the district must meet at least quarterly and provide advice and direction to the governing board.

Special Districts are distributed proportional amounts of rents, royalties, natural resource revenue and other receipts distributed among taxing entities within a county. Special Districts may enter into contracts to provide or receive services, and may buy, own, sell or lease property. Public budget, archive, records, meetings, ethics and other governmental function laws and rules apply the same as for cities or counties. Special Districts are authorized to apply for and receive grant awards.

Tribe

Oregon has one PSAP located on tribal lands, serving the sovereign nation of the Warm Springs Tribes. The PSAP is governed by the Warm Springs Tribal Council which works with OEM/OMD to assure state-of-the-art technology and procedures consistent with the rest of the Oregon 9-1-1 PSAP and public safety dispatch system. Funding is provided by the tribes, offset by 9-1-1 excise taxes shared with the tribes by Jefferson and Wasco Counties.

Regional Partnerships

Regional partnerships have developed for many reasons ranging from interoperability to improved business practices to cost savings. 9-1-1 centers across the State have invested in regional solutions to improve the quality and timeliness of public safety in Oregon. Many 9-1-1 centers share infrastructure components including: regional radio systems, computer aided dispatch systems, records management systems, and backup plans.

Portland Metropolitan Area

The Portland metropolitan area dispatch centers including the City of Portland, the City of Lake Oswego, Clackamas County, the Port of Portland, Washington County Consolidated Communications Agency, Columbia 9-1-1 Communications District, and Clark Regional Emergency Services Agency in Vancouver, WA, formed a consortium starting in 2003, but finalized through an intergovernmental agreement in 2006. The purpose of the consortium is to coordinate collaborative efforts including but not limited to planning, training, interoperability of voice and data communications systems, operational and physical backup and redundancy, and joint efforts to obtain and manage resources such as grants to support the Consortium efforts and projects in the region. The largest project to date has been the installation of an enterprise service bus which is capable of moving the data associated with 9-1-1 calls seamlessly between dispatch centers disparate computer aided dispatch systems.

Washington and Clackamas County radio users including public safety providers ranging from municipal police and fire departments, fire districts, public works entities, and other governmental entities have partnered to share a radio system controller and system oversight with intergovernmental agreements. Along with shared oversight of this radio system, they also enjoy seamless interoperability with the City of Portland 800 Radio system. Currently in the Portland Metro area there is a Regional Radio Partnership Group, encompassing the radio systems in Washington and Clackamas Counties, City of Portland and Clark County Washington, to study the feasibility of replacing all the radio systems with one serving the entire area. All of the existing individual radio systems are at end of life and need replacement. The regional group is hoping to find a financial solution that meets everyone's needs while ensuring interoperability and growing regional partnerships.

Other examples of partnerships in the Portland Metropolitan area include a shared CAD system between Washington and Clackamas County. This allows both agencies to share costs associated with any maintenance and allows for enhanced interoperability. The City of Lake Oswego Communications has established Continuity of Operations and full backup operations between the City and Clackamas County Communications.

Central Oregon

In Central Oregon, Prineville 9-1-1 and Jefferson County 9-1-1 have shared radio infrastructure, CAD, records and mapping systems. The agencies have developed joint policies and procedures to allow for seamless call handling and dispatching of emergency calls. Additionally both agencies serve as live backup centers which allows for reduced costs in Continuity of Operations planning. As technology and funding allows the two agencies are looking to reduce costs by sharing software and enhance their call sharing and backup capabilities.

Southwest Oregon

In Southwest Oregon there is a seven county microwave project which will allow emergency responders the ability to "roam" seamlessly to communicate with a Public Service Answering Point (PSAP) in Benton, Douglas, Coos, Curry, Lane, Linn and Josephine counties. Dispatchers could be raised on a single frequency and direct emergency responders for further assistance and coordination. The radio system switch is administered through Central Lane Communications in Eugene with the microwave portion of the system managed by OWIN.

Further partnerships in the valley area include the Lane Regional Interoperability Group (LRIG) system. This P25 UHF Trunked Simulcast system is a partnership between the cities of Eugene and Springfield, Lane County and Eugene Water and Electric Board.

Willamette Valley

Willamette Valley Communications in Salem and Central Lane Communications in Eugene completed a Department of Homeland Security funded feasibility study in 2010 to look at the potential to provide backup to one another's 9-1-1 and consolidated dispatch operations. As with the backup agreements in place in Clackamas County and also Jefferson County, Marion County and Lane County now have a study with detailed steps that can strengthen the options of having a live backup center in coming years. In addition to equipment sharing and other interoperable and Continuity of Operations plans various agencies throughout the state are sharing in costs associated with required training and certification. An example of this partnership is seen in Eastern Oregon where Baker County hosts various Emergency Medical Dispatch classes and other DPSST approved training. The agencies in Eastern Oregon are able to pool resources and cut down on expenses associated with either traveling to the Willamette Valley or hosting the same training at each of their individual PSAP's.

Conclusion

The above are just some of the many examples of partnerships being formed throughout the state with local and state partners. These partnerships have evolved over time as communities are working together to enhance the quality of emergency response being provided to all the residents and visitors of our State. The 9-1-1 centers in Oregon are active partners in these regional partnerships seeking out cost effective solutions to interoperability and improved service delivery.

Certification and Training:

In 1991 Oregon recognized the critical roles of Telecommunicators in the public safety network and began requiring dispatchers to hold a basic level of certification. ORS 181.644 requires all Telecommunicators and Emergency Medical Dispatchers be certified through the Department of Public Safety Standards and Training (DPSST). The minimum training standard for all 9-1-1 dispatchers in Oregon includes 80 hours of classroom training through DPSST. This training sets minimum standards and ensures at the basic level all Telecommunicators are able to provide the same information statewide. This training covers many aspects of public safety from criminal law and law enforcement/ fire and emergency medical services overviews to stress management and call handling techniques. Once a Telecommunicator completes the 80 hour training academy they must then complete additional agency level training along with the requirement to complete a DPSST Field Training Manual. Agency training can last anywhere from a few weeks to over a year depending on the agency and duties required.

The agency level training goes into specific details on call handling, agency policies, local ordinances, radio procedures, etc. The Field Training Manual provides the opportunity for continuous appraisal and documentation of employee development and appropriate performance including reasoning, judgment and the application of related technical skills necessary to perform as required. Completion of the DPSST Field Training Manual will reinforce and complete the DPSST Basic Telecommunicator Course. The manual must be completed within 18 months of an employee being hired.

To help ensure basic training with DPSST, the state 9-1-1 Program within Oregon Emergency Management has an Intergovernmental Agreement with DPSST to provide Telecommunicator and emergency medical dispatch training. The state 9-1-1 program pays DPSST a specific amount out of the 9-1-1 tax receipts to ensure this training occurs. For the 09-11 biennium this amount was $476,702. All agency level and ongoing required training is paid for at the local level.

Ongoing training is established through DPSST and the Department of Human Services, Public Health Division (OAR 333-200-080 1 e). All Telecommunicators must complete annually, 12 hours of ongoing education and Emergency Medical Dispatchers must complete an additional 4 hours of annual training. All Telecommunicators in Oregon must retain the DPSST Basic certification. Dispatchers are eligible to earn Intermediate and Advanced certifications as established by DPSST. The costs associated with training staff at a higher level is the responsibility of the agency or individual dispatcher.

Service Delivery

The expectations of Telecommunicators in Oregon, and across the country can vary based on the specific needs of the area. In Oregon, the Department of Public Safety Standards and Training (DPSST) conducted a Job Task Analysis compiling a list of expected duties for Telecommunicators and Emergency Medical Dispatchers. Due to the size of this list, we have not included the duties in this document. More specific information may be found on the DPSST website at _____

In addition to the duties listed from the DPSST Job Task Analysis, based on local needs, PSAPs with limited personnel may leverage 9-1-1 funds with significant local revenue (tax base, user fees) to provide their communities with a broad range of public safety services such as records management, public access to facilities and jail monitoring.

Technology

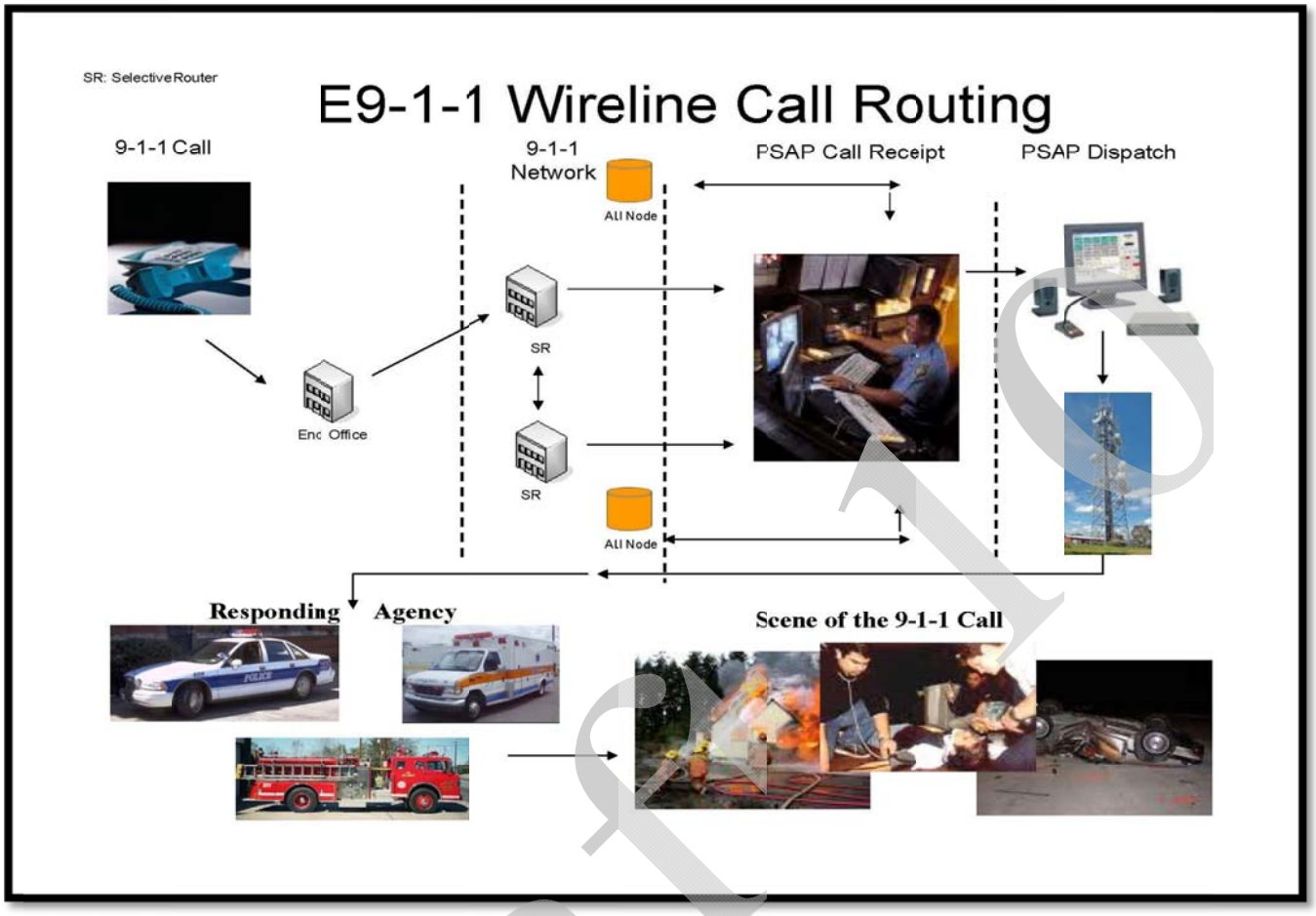
ORS 403.115 mandates that 9-1-1 be the primary emergency telephone number within Oregon. This ORS requires a Public Safety Answering Point (PSAP) to answer the 9-1-1 call and either dispatch, relay, or transfer the 9-1-1 call to an appropriate public or private safety agency. The PSAP must have a minimum of at least two 9-1-1 circuits (phone lines) from each telephone central office within the PSAP's jurisdiction along with two call-taking work stations.

When a citizen or visitor to Oregon calls 9-1-1 they expect their call for help to be routed to a PSAP for answering and processing. Later in this section the specifics of how a 9-1-1 call is routed and processed will be explained, but basically a land line call arrives at a PSAP displaying information including the caller's name and address. If the call originates from a wireless carrier, it will include the name of the carrier, the phone number for the carrier, and the cell phone number, and either their approximate location (Latitude/Longitude) or nearest cell tower location.

The majority of 9-1-1 calls are processed by the call taker and help is dispatched to the location if deemed necessary. In some cases, especially when a call is answered by bordering jurisdictions, the caller may need to be transferred to another PSAP or a secondary call center for processing.

The call taker will enter the caller's information and emergency request into a Computer Aided Dispatch system (CAD) for documentation and processing. Based on the request for police, fire, medical, or other public safety resources (i.e. public works, animal control, search and rescue, etc) the call will be dispatched to the proper agency. The dispatcher will typically utilize a combination of radio's, paging devices (alpha numeric pagers, cell phones, etc), and computers.

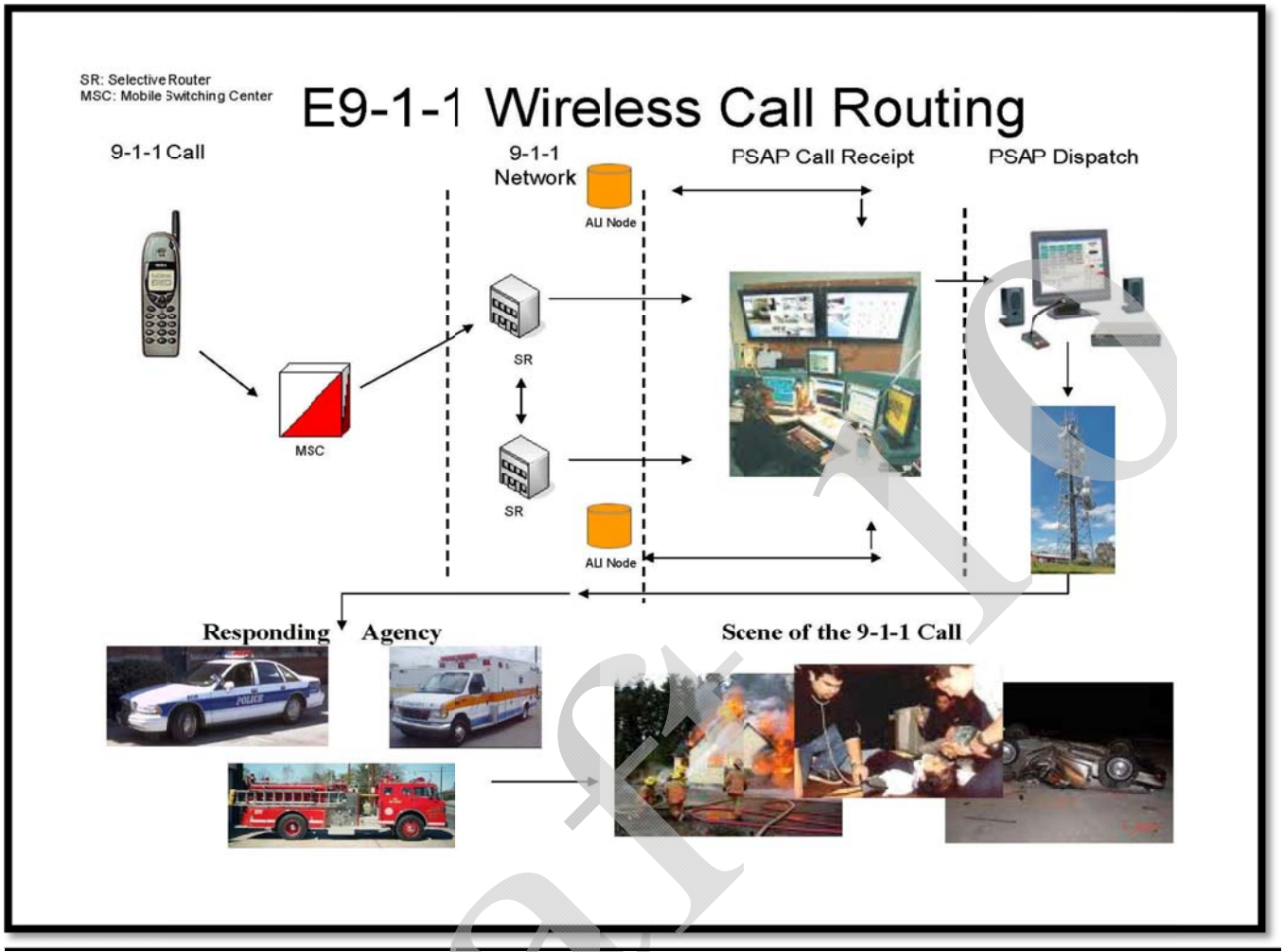
The next three pages include diagrams of call routing for wire line, wireless, and VoIP calls. It should be noted, only the portion up until "PSAP receives the call and transfers or relays the information to the responding agencies" is considered the 9-1-1 portion for purposes of the 9-1-1 tax revenue. Once it hits the PSAP, communicating ongoing information out to the responding agencies is the dispatch portion which is not funded under the tax.

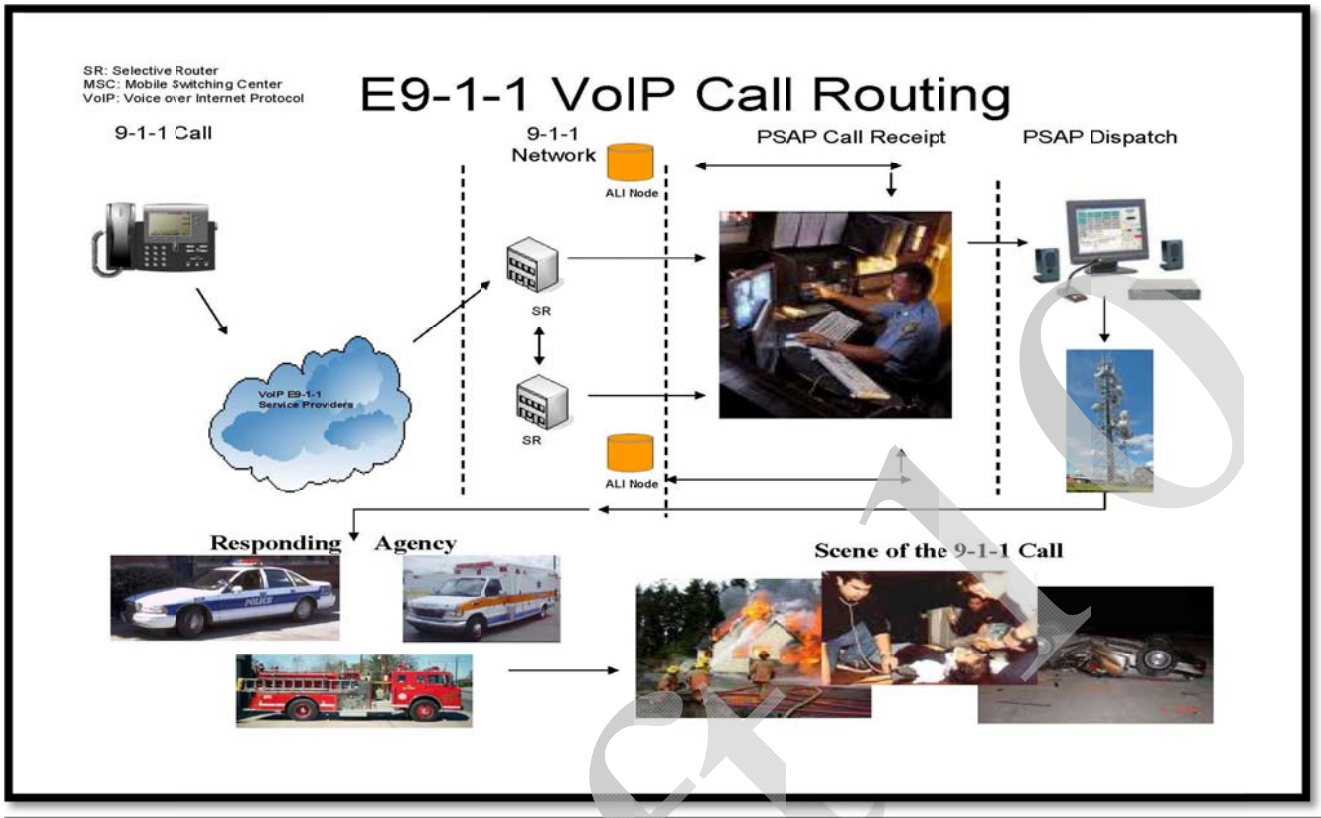


Wireline communications is the term for communications that require a physical connection, such as wires or cables, between users. A call made from the common household "land-line" telephone is an example of a wireline call.

As the picture above depicts, when a caller dials 9-1-1 from a wireline telephone, the following steps take place (this all transpires in seconds):

- **The call is connected to the telephone company's central office switch**
- **The central office transmits the originating phone number (or Automatic Number Identification "ANI") to the selective router.**
- **The selective router searches its database for the originating telephone number (ANI) and matches that number to the appropriate Emergency Service Number (ESN).**
- **The ESN determines which 9-1-1 center receives the call.**
- **The 9-1-1 center (PSAP) receives the call**
- **Simultaneously, the originating telephone number (ANI) is transmitted to the database provider.**
- **This database matches the ANI to a physical location (Automatic Location Identification "ALI")**
- **The location information is transmitted to the 9-1-1 center and displayed to the call taker.**
- **The call taker then communicates all of the above information to the dispatcher, who dispatches and relays all pertinent information to the responding units (Police, Fire, or Medical).**


SR: Selective Router
MSC: Mobile Switching Center
E9-1-1 Wireless Call Routing
9-1-1 Call
9-1-1 Network
PSAP Call Receipt
PSAP Dispatch
ALI Node
SR
MSC
SR
ALI Node
Responding Agency
Scene of the 9-1-1 Call



VoIP is short for Voice over Internet Protocol. VoIP is a category of hardware and software that enables people to use the internet as the transmission medium for telephone calls by sending voice data in packets using IP rather than by traditional circuit transmissions of the PSTN. One advantage of VoIP is that the telephone calls over the internet do not incur a surcharge beyond what the user is paying for in internet access, much the same way that the user doesn't pay for sending individual e-mails over the internet. VoIP Phone calls can be made to anywhere or anyone: Both to VOIP numbers as well as people with normal phone numbers.

- **A VOIP user calls 9-1-1**
- **The VOIP 9-1-1 call routes over the VOIP service providers' network and then to a E911 selective router.**
- **The selective router searches its database for the originating telephone number (ANI) and matches that number to the appropriate Emergency Service Number (ESN).**
- **The ESN determines which 9-1-1 center receives the call.**
- **The 9-1-1 center (PSAP) receives the call**
- **Simultaneously, the originating telephone number (ANI) is transmitted to the database provider.**
- **This database matches the ANI to a physical location (Automatic Location Identification "ALI"). The location information must be updated by the VOIP user as they change locations, as VOIP can be a mobile service.**
- **The location information is transmitted to the 9-1-1 center and displayed to the call taker.**
- **The call taker then communicates all of the above information to the dispatcher, who dispatches and relays all pertinent information to the responding units (Police, Fire, or Medical).**

Mandated/Recommended Equipment in OAR

ORS 403.115 mandates a PSAP have a minimum of at least two 9-1-1 circuits from each telephone central office servicing their jurisdiction, two call-taker work stations, and associated telephone equipment capable of displaying the caller's information (Automatic Number Identifier (ANI) /Automatic Location Identifier (ALI). OAR 104-080-0040 further requires PSAP's to have Telephone Typewriter (TTY) equipment for the hearing impaired, Uninterruptible Power Supply (UPS) for Customer Provided Equipment (CPE), building security, and a telephone device with ANI/ALI display.

Not all mandated equipment is eligible for partial or full payment out of the 9-1-1 tax fund as described in the individual equipment sections listed below:

- ***State Frame Relay***

  To process a 9-1-1 call PSAP's must be able to receive all routed calls within their jurisdiction. This requires a statewide infrastructure to first receive the call and then transfer if necessary (State Frame Relay Network).

  When a 9-1-1 call is routed to the PSAP it is received by telephone system equipment including customer premise equipment (CPE). This equipment receives the call and thus processes it to a call taker's workstation. The phone switch equipment of the CPE equipment will receive the call and begin decoding the ANI tones. Upon presentation to the work station an automatic request and subsequent retrieval of the caller's ALI information is made and both the ANI/ALI are presented back to the call taker's end equipment where it will be verified for accuracy.

  Depending on the size of the PSAP the call may be passed from the phone switch to a queuing distribution system so that calls are evenly distributed by priority and operator availability. Calls can also be transferred to other PSAP's and or location by the use of preprogrammed speed dial lists and the supporting State network. Other systems may interface to the phone system as well in order to collect statistical information, allow mapping of the caller's location and or records the actual audio of each of the incoming calls. Every PSAP varies in size and requirements. The supporting customer provided equipment (CPE) installed is based upon a number of factors, such as call volume, population of jurisdiction, upgradability and future growth.

- The State Frame Relay Network ties all 49 PSAP's and Oregon Emergency Management together via a high speed connection. Cisco Routers provide connectivity to the ALI (Automatic Location Information) Database for each serving Telco. There are two routers for CenturyLink (located in Hood River and Sheridan), two for Verizon (located in McMinnville and Beaverton) and two for Qwest (located at the Belmont and Cypress Central Office). A diagram of the State Frame relay is provided on page 35

- ***Customer Premise Equipment (CPE) also referred to as "On-Premises Equipment"***

  CPE is paid in full out of the 9-1-1 tax fund. OAR defines CPE as the following equipment:

  (a) Those devices required to decode network signaling allowing the display of ALI/GALI;
  (b) The station terminal equipment required for display of decoded signaling and voice contact with the calling party in a synchronous manner.

- ***Uninterrupted Power Supply (UPS System)***
  All PSAP's shall have either a building UPS or individual UPS units at each work station. OAR requires a UPS system to power customer premise telephone equipment to ensure 9-1-1 calls are not lost or disconnected in the event of a power loss. The UPS should be capable of powering the essential customer premise equipment for a period sufficiently long to enable a generator to stabilize and maintain power or until commercial power is restored. 9-1-1 tax funds will purchase and maintain a portion of UPS units but will not fund generators.

- ***Circuits:***
  Each PSAP works with OEM, Stat. Auth: ORS 403.120(1)(a), and their local telephone service provider to determine the number of incoming 9-1-1 circuits. The number of circuits required is based upon the number of end central telephone offices in a PSAP's jurisdiction, anticipated wired and wireless call volumes, and the population density for the County or specified jurisdiction. The larger the population served by a PSAP the greater number of circuits required. Some PSAP's also separate9-1-1 landline circuits from their wireless circuits in order to avoid call congestion to a PSAP. The P.01 Grade of Service, OAR 104-080-0010(15), is used to measure and maintain an adequate number of 9-1-1 circuits at each PSAP. "P.01 Grade of Service" means emergency telecommunications service in which no more than one call in 100 attempts will receive a busy signal on the first attempt during the average busiest hour.

  In addition to the local 9-1-1 circuits the State of Oregon OEM Office also provides a separate telephone network (presently a frame relay network) that allows a PSAP to retrieve the caller's information such as address, emergency service zones, time stamps, and location information (ANI/ALI). This information is essential in order to dispatch an emergency responder to a site. It is also important to note that the caller's information is stored in secure databases located in geographically diverse locations around the country. Each time a 9-1-1 call is made to a PSAP a request is automatically generated over this statewide telephone network. The information is retrieved and returned to the 9-1-1 Operator's equipment within a few seconds. All costs associated with these circuits and CPE equipment is covered by the 9-1-1 tax collected by the State.

- ***Recording systems/Loggers***
  OAR 104-080-0040 (2) states "*Logging recorder equipment is recommended: (a) It is recommended each PSAP have a logging recorder in operation equipped to record all voice conversations of each call as well as the date and time of each call' (b) It is recommended each call taker station be equipped with an instant playback type recorder to record each incoming 9-1-1 call. At least 10 minutes of storage capacity should be included. It is highly recommended that the recorder be of a digital voice storage type with no moving parts.*

  Although logging recorders and instant playback are recommended in OAR, they are not funded by 9-1-1 revenue. Most PSAP's have logging recorders that record and store all incoming and outbound calls, as well as radio traffic (primary police and fire radio channels). Agencies typically also record all non-emergency and 10 digit emergency lines. These calls are also stored for a specified retention period and become public records. Often times recorded calls are requested for legal reasons and can also be used for operator evaluations and training purposes.

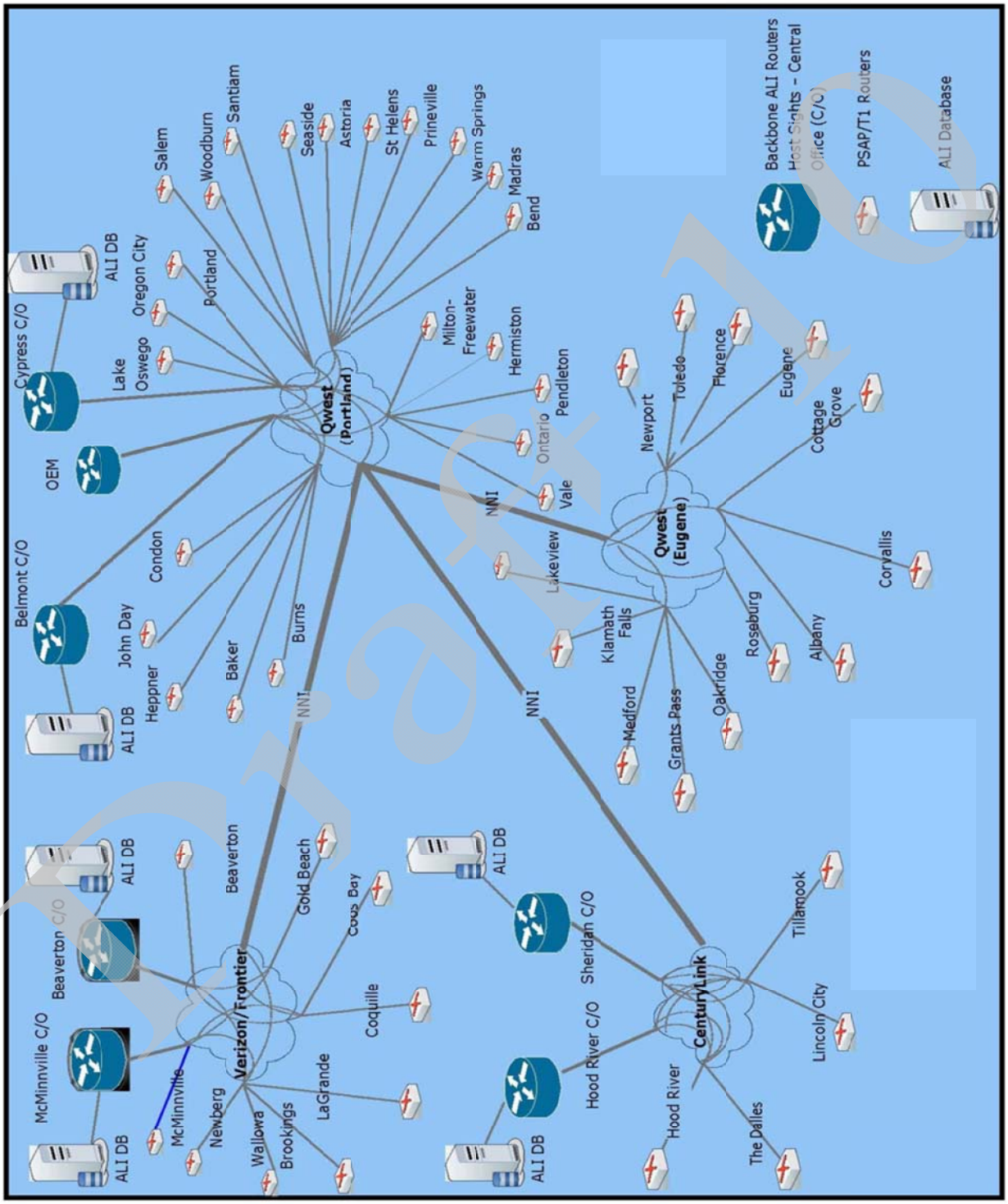
Phone or radio equipment at each work station might also be equipped with instant playback capabilities. Operators can play back missed information instantly to try and decipher hard to hear calls when the reporting party is no longer available.

Citizens, the media, courts, and other governmental agencies have an expectation that all communication via telephone or radio to and from a PSAP is being recorded. As it relates to 9-1-1 calls, some PSAP's begin recording the circuits prior to the call being answered by the call taker since the recording equipment is actually hooked at the demarcation. This is the point where the 9-1-1 circuit enters the PSAP and allows the recording to hear the tones from the central office and any statements made by the callers before a call taker actually selects the call processing. These recordings, where in place, have been very useful for court proceedings. All costs associated with recording systems are funded completely by the local PSAP's.

- ***Telephone Typewriter Equipment/TTY***
  All 9-1-1 telephone systems in Oregon are required to have a TTY machine or integrated solution to comply with the American Disabilities Act for the hearing impaired.

- ***Call Taker Stations/Console furniture***
  Each PSAP is required to have a call taker work station. Although the telephone equipment used to answer the 9-1-1 call is covered by the 9-1-1 fund, there is no funding provided for the actual work station furniture. Each PSAP determines what equipment is best for their operational needs when designing and installing the call taking work stations. Each position needs to be large enough to support multiple monitors, computers/keyboards, radio and telephone equipment, and other tools needed to perform their jobs.

- ***Building Security***
  Although building security is mandated, this expense is not covered by 9-1-1 tax revenue. Security, of course, varies through the PSAP's from locked exterior doors to cameras, access controlled facilities and secured computer rooms. Per OAR 104-080-0040 (4) "*each primary PSAP shall have building security to restrict intentional disruption of operations. All 9-1-1 processing and control equipment shall be accessible only to authorized personnel. Display and printing equipment shall be located so that the information is limited to those with a need to know.*" 104-080-0040 (5) further states "*all exposed 9-1-1 circuit facilities and E9-1-1 customer premise equipment (CPE) rooms at the primary PSAP shall be protected and internally marked to prevent accidental damage or tampering. For this section "protected" includes maintaining the ambient room temperature per the CPE manufacturers' requirements.*"


Backbone ALI Routers
Host Sights - Central Office (C/O)
PSAP/T1 Routers
ALI Database
Cypress C/O
ALI DB
Lake Oswego
Oregon City
Salem
Woodburn
Santiam
Portland
Seaside
Astoria
St Helens
Prineville
Warm Springs
Madras
Bend
Milton-Freewater
Hermiston
Pendleton
Ontario
Qwest (Portland)
OEM
Belmont C/O
ALI DB
John Day
Condon
Heppner
Baker
Burns
NNI
Vale
Lakeview
Klamath Falls
Medford
Grants Pass
Oakridge
Roseburg
Albany
Corvallis
Cottage Grove
Eugene
Florence
Toledo
Newport
Qwest (Eugene)
Beaverton C/O
ALI DB
Beaverton
Gold Beach
Coos Bay
Coquille
LaGrande
Wallowa
Brookings
Newberg
McMinnville
McMinnville C/O
ALI DB
Verizon/Frontier
ALI DB
Sheridan C/O
Hood River C/O
ALI DB
Hood River
The Dalles
Lincoln City
Tillamook
CenturyLink

Expected Equipment

The telephone system and supporting customer provided equipment is mandated in order to operate a PSAP. What is not covered in ORS/OAR is what is often expected from citizens and emergency response agencies. While some expected equipment is an allowable expense out of the 9-1-1 tax, either fully or partially, current funding is not sufficient to support this expense.

- ***Computer Aided Dispatch (CAD) system***
  Call takers enter information provided by the caller and telephone equipment into a Computer Aided Dispatch (CAD) system for dispatch purposes. The dispatcher uses the CAD system to determine appropriate nearest responders and to document what happens to a specific call. The dispatcher utilizes CAD and radio to dispatch and update responders to calls for service (both emergency and non-emergency). The CAD database contains time stamps including dispatch, responder enroute and responder arrival times. Dispatchers often use a mapping system, associated with the telephone equipment and/or CAD which displays the caller and incident location. Depending on the equipment in place the mapping system will also show where currently active calls are located on the map, where new calls are being entered, callers' locations, and, if equipped by individual agencies, the location of public safety vehicles using Automatic Vehicle Locations (AVL).

  Based on the size of an agency the CAD system is tailored to assist with many functions of call taking, dispatching, and alerting. An example of both call taking and dispatching functions processed through CAD is Emergency Medical Dispatching (EMD). OAR requires 9-1-1 call takers are trained in EMD. Some CAD systems use a software interface to help guide the call taker through EMD and prioritizes the call so the appropriate number and type of emergency responders are dispatched. All costs associated with CAD systems, with the exception of mapping, are covered by the local PSAP's.

- ***Mapping***
  Although having a mapping system is not required by ORS, all PSAP's have a basic mapping system. Mapping allows for caller's contacting 9-1-1 from a wired line or a wireless phone to be identified on a map that is located at the call takers work station. Wireless providers are required to provide the latitude and longitude coordinates of the caller, which allows the caller's location to be physically mapped down to within 50 to 300 meters of the caller. Citizens have grown to expect this information to be displayed in the PSAP so that they can be located. The costs associated with the basic mapping are covered via the 9-1-1 tax. Some PSAP's have expanded the mapping system to work with their CAD systems as well so it will display greater detail including calls for service, geographical data and first responder locations.

- ***Community Alerting Systems***
  Local public safety agencies and many citizens have an expectation that PSAP's have a community alerting system, often called "Reverse 9-1-1", which allows emergency notification from public safety agencies to a specified area. These warnings could be alerts to look for suspects or lost and missing subjects, safety information such as instructions on what to do if there is a hazardous materials spill, a warning to boil contaminated water, or other important information. All costs associated with this system are paid for by the local PSAP's.

- ***HOSCAP***
  Some PSAP's who dispatch for ambulance transport agencies are expected to have the Oregon Hospital Capacity (HOSCAP) status provided via the State of Oregon Health Alert Network System. HOSCAP provides information for transporting agencies on the capacity of various hospitals in the state along with trauma status and capacity for trauma calls.

Radio Systems

Once a PSAP receives a 9-1-1 call requesting help the information must be quickly relayed to police, fire, and medical providers. The majority of emergency calls are relayed to responders via various radio systems and networks. In addition to actual radio tower sites and infrastructure built out by local jurisdictions, each PSAP must have equipment at the dispatch workstations to transmit and receive over the radio systems. Specialized radio consoles allow PSAP dispatchers the ability to communicate on several radio frequencies, alert first responders and perform other tasks necessary for communications and interoperability.

Dispatch workstations typically have cabling that directly connects the radio portion of the workstation to customer premise equipment (CPE) on site, which then connects to radio towers on site and/or at remote sites via microwave. Equipment rooms, located in close proximity to the radio towers, contain radio base stations, comparators and antenna combiners which are connected to the antennas on the towers for receiving/transmitting messages between dispatch and first responders. UPS systems and generators are typically located at radio sites to ensure operation in the event of a power outage. Local public safety agencies are responsible for purchase and maintenance of dispatch workstations and all associated radio equipment.

There are five distinctive frequency bands that are used primarily by public safety across the United States and most radio manufactures only produce single band radios. Therefore, an agency with a VHF Low radio system will usually only be able to communicate with another agency using radios in the same range (providing common frequencies have been pre-programmed in the radios).
The five primary public safety bands are:

1. VHF Low which operates in the 25 – 50 MHz range;
2. VHF High which operates in the 138 – 174 MHz range;
3. UHF which encompasses the 400 MHz band, 406 – 470 MHz;
4. UHF which encompasses the 700 MHz band, 698 – 806 MHz*;
5. UHF which encompasses the 800 MHz band, 806 – 869 MHz

*In July 2007, the Federal Communications Commission (FCC) revised the 700 MHz band plan and service rules to promote the creation of a nationwide interoperable broadband network for public safety and to facilitate the availability of new and innovative wireless broadband services for consumers. The Commission designated the lower half of the 700 MHz Public Safety Band (763-768/793-798 MHz) for broadband communications.

In addition to using a variety of public safety bands, there are different types of radio systems and features in use throughout the State of Oregon.

- **Simplex or line-of-sight**
  This type of radio communication typically does not rely on any infrastructure of major costs, such as base stations and towers.* In this mode of communication, users simply communicate from one radio to another providing that the exact frequencies have been pre-programmed in each of the radios (mobile and portable). This is commonly referred to as "talk-around" mode.

  The significant drawback to this type of radio operation is that it only provides radio coverage in a very limited area. While this is inefficient for dispatch operations, simplex operations are used extensively for fire ground, and often for law enforcement special operations, where in-building signal penetration, or operational security is critically important.

  Both *conventional* and *trunked* radio repeater systems often provide a talk around capability that operates on frequencies that bypass the repeater infrastructure.

  **Some public safety agencies still use simplex radio systems for dispatch purposes. Radio base stations, antenna towers and related infrastructure are typically required if dispatch is on the system.*

- **Conventional Radio System**
  A conventional radio system is simply a system where a radio repeater, installed in a location with line of sight to a large geographic area is shared among a number of users. A repeater system extends the line of sight operating range of communications beyond that achievable directly between users on the ground. Conventional radio repeater systems can be either analog or digital.

  A conventional radio repeater system typically consists of one or more channels, each made up of a pair of frequencies (input & output) and a user selects the frequencies being used by changing channels on his or her radio. Conventional radio repeater systems are inefficient when used by a large number of users.

- **Trunked Radio System**
  A trunked radio repeater system operates using the same fundamental principles that a conventional system does, with the exception that a computer connected to a control channel controls operating frequencies. The system automatically recognizes a user's radio and assigns privileges based on information contained in a database. When a user presses the push-to-talk button on a radio, the radio "requests" permission to transmit. If granted, the system allocates frequency resources and directs the user radio to available frequencies.

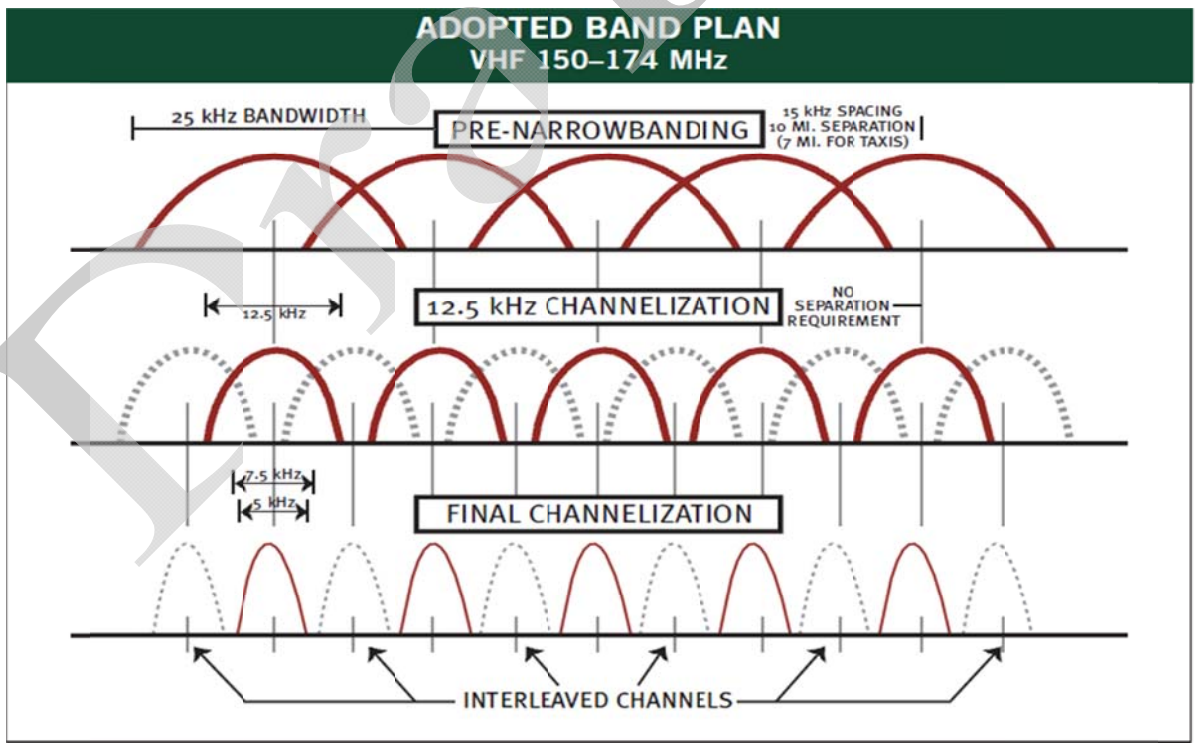
  In a trunked radio system, when a user selects a channel, the user is actually selecting a set of privileges that the user's radio is authorized to communicate with. The computer retains this information in a database. A group of users with common privileges is commonly referred to as a "talk group". The user's request to participate in a talk group is automatically conveyed to the system via the control channel, and all other group participants are also automatically directed to operate at the proper frequencies.

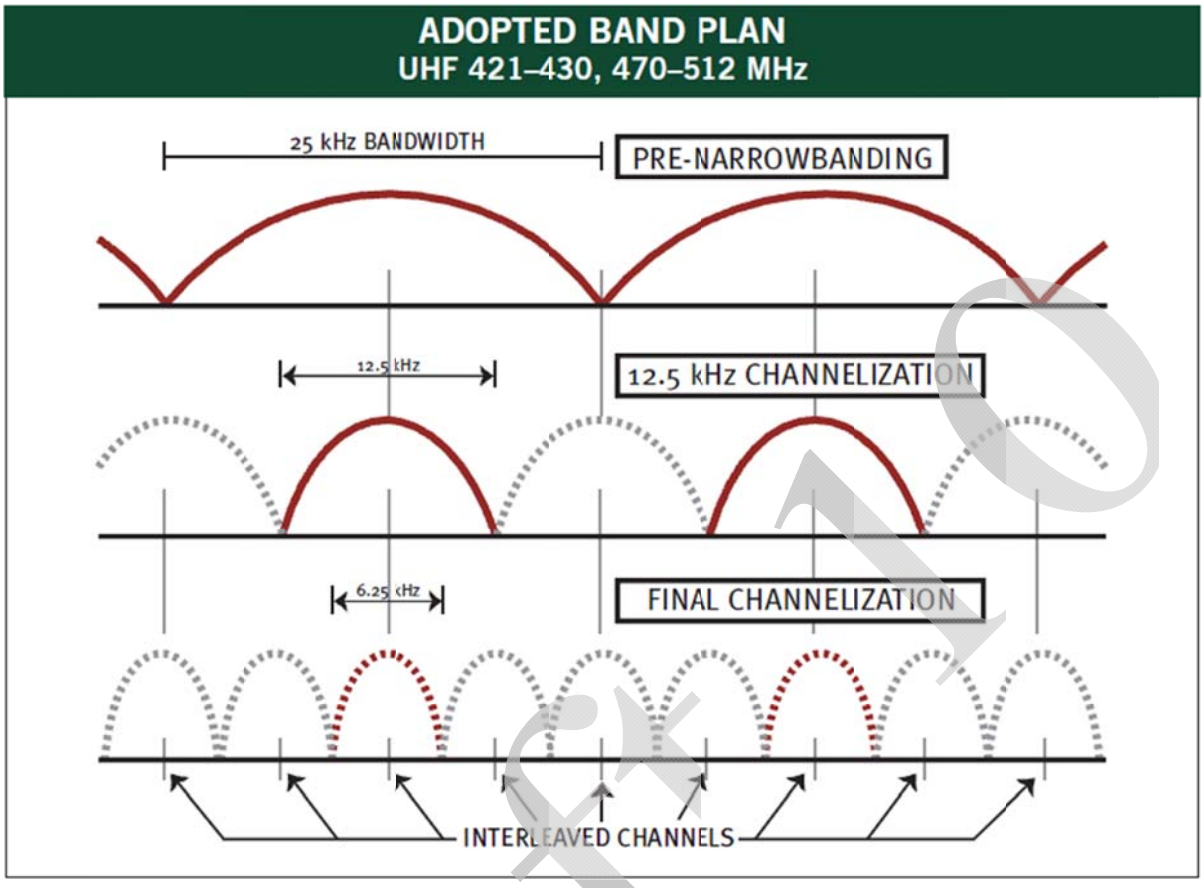
Trunked radio systems make orders of magnitude more spectrally efficient, supporting many more users via fast computer control of the same frequency resources. They are also generally much more complex and costly to operate than conventional radio repeater systems.

- **Mandatory Narrowbanding**
  Public safety agencies licensed in the VHF and UHF bands traditionally have used radio systems that operate on channel bandwidths of 25 kHz. "Narrowbanding" refers to a requirement by the FCC that — on or before January 1, 2013 — all existing licensees implement equipment designed to operate on channel bandwidths of 12.5 kHz or less. These agencies will need to convert their existing wideband (25 kHz) systems to narrowband (12.5 KHz) operation. Any radio equipment, including dispatch that is not capable of operating on channels of 12.5 kHz or less will need to be replaced. The FCC expects that licensees ultimately will implement equipment that is designed to operate on channel bandwidths of 6.25 kHz or less. However, there currently is no deadline set for making this transition.

  The FCC explains the purpose of mandatory narrowbanding is to promote more efficient use of VHF and UHF bands. Today, these bands are highly congested, and there often is not enough spectrum available for agencies to expand their existing systems or implement new systems. As licensees convert to equipment that operates on narrower channel bandwidths, new channels will become available for licensing by agencies that need them.

The following charts illustrate how the channelization plans for the VHF and UHF bands are changing as a result of narrowbanding.





Mandatory narrowbanding is not covered by the 9-1-1 tax collected by the State. Implementation of new radio systems to meet this requirement requires a large expenditure of funds including planning, engineering, frequency coordination, purchase of new radio equipment, programming and installation.

Next Generation 9-1-1 Network:

The evolution of emergency calling beyond the traditional voice 9-1-1 call has caused the recognition that our current E9-1-1 system is no longer able to support the needs of the future. Next Generation 9-1-1 (NG9-1-1) networks replace the existing narrowband, circuit switched 9-1-1 networks which carry only voice and very limited data. Currently there are difficulties in supporting such things as text messages for emergencies, images and video (including support for American Sign Language users), and easy access to additional data such as telematics data, building plans and medical information over a common data network.

The Department of Justice (Department) is considering revising the regulation implementing title II of the Americans with Disabilities Act (ADA) to address in what manner public entities that operate 9-1-1 call-taking centers (also known as Public Safety Answering Points (PSAPs)) should be required to make changes in telecommunication technology to reflect developments that have occurred since the publication of the Department's 1991 regulation. Under its existing title II regulation, the Department requires that PSAPs provide direct, equal access to telephone emergency centers for individuals with disabilities who use analog text telephones (TTYs).\1\ Many individuals with disabilities now use the Internet and wireless text devices as their primary modes of telecommunications.

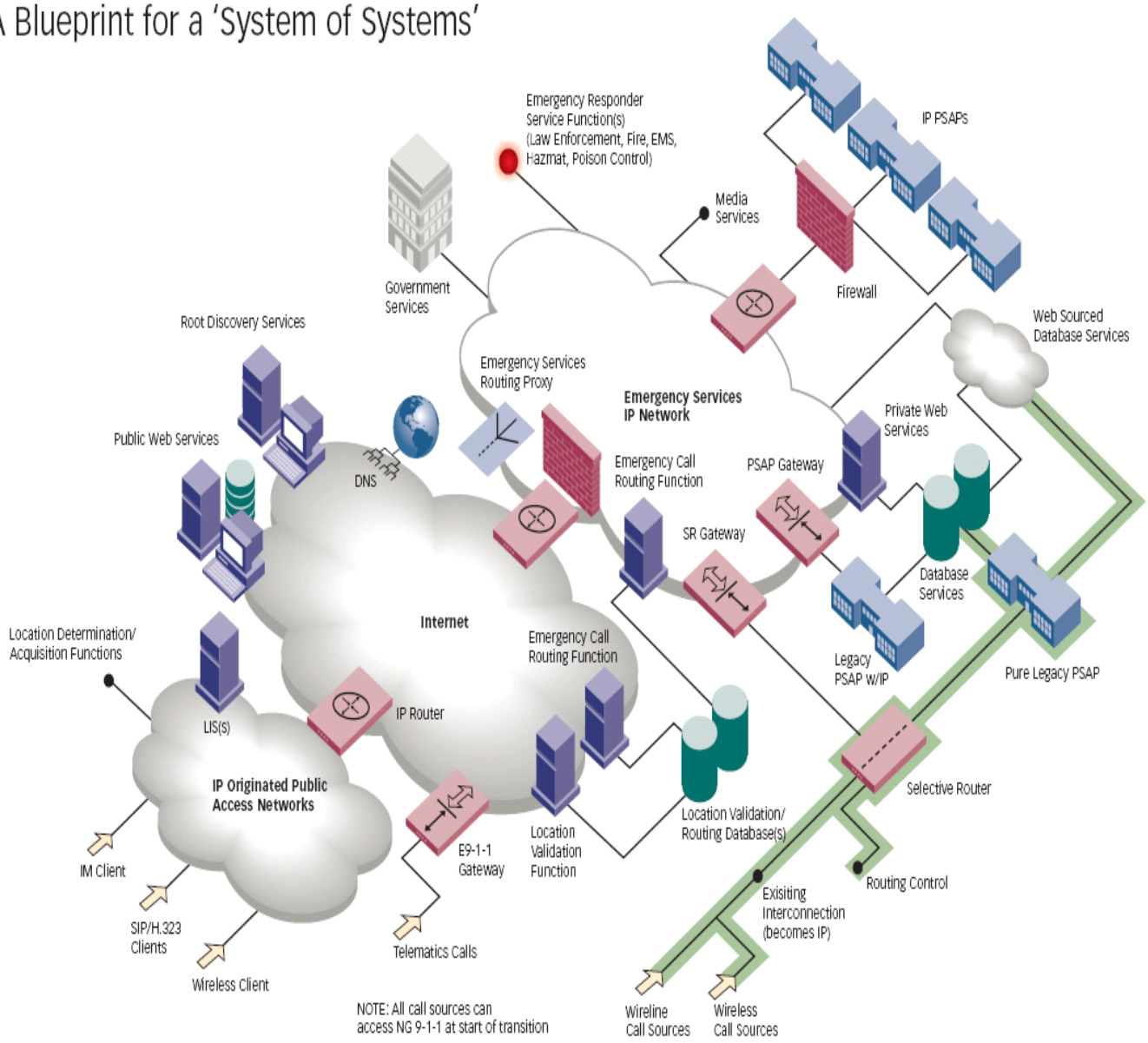
In addition, the need for inter-communications across states, between states, and across international boundaries requires that we create a more flexible 9-1-1 system design with much greater data handling capabilities.

A highly standardized system is essential and critical to seamlessly support communications and data transfer across county, state, and international borders, and across the multitude of emergency response professions and agencies, from traditional PSAPs to Poison Control Centers, trauma centers, Coast Guard, and disaster management centers.

Implementation of the NG9-1-1 will foster the migration to the centralization of equipment and sharing of host equipment. 9-1-1 calls will continue to be received locally, but the host equipment can be shared across multiple PSAP’s.

The Future of 9-1-1 and Emergency Communications

A Blueprint for a 'System of Systems'



Conclusion

9-1-1 emergency communications services are a vital part of Oregon's public safety infrastructure, and Public Safety Answering Point (PSAP) consolidation has been a topic of discussion for a number of legislative sessions.

In 2000, the State of Oregon, (Oregon Emergency Management, then under the Oregon State Police) hired consultants Gary Boyd & Associates, Inc, and William L Doolittle & Associates, Inc to conduct a multi-PSAP County report/evaluation study. At the time of this study, there were 55 Primary PSAP's in Oregon (today there are 49 PSAPs).

In 2010, under the guidance of a budget note from the Legislative Fiscal Office to the Oregon Military Department, the Oregon PSAP Consolidation Task Force (CTF) was formed. The task force was made up of representatives from PSAP's throughout Oregon, Police and Fire Associations, League of Oregon Cities, Association of Oregon Counties, Special Districts Association, Oregon Emergency Management, Oregon Military Department, and representatives from telephone utilities. Invitations were also sent requesting legislative representation.

Throughout much of this Consolidation Task Force (CTF) report, the task force has come to several of the same conclusions found in the report from 2000. To elaborate requires background information regarding types of consolidation:

1. There are two different types of consolidation.

a. "Brick and Mortar" in which the centers are consolidated into a single agency, in a single building, with all personnel and responsibilities employed by a single entity.

b. "Virtual Consolidation" in which agencies may remain in separate buildings, and even maintain their individual entities, however they partner with other agencies to share technology. Many Regional Partnerships already exist within the state, and are outlined further within this latest report. Shared technology can be expanded even further with the implementation of "next-gen" as explained on page 44 of this report.

In 2001 the legislature passed HB 3977 which required PSAPs in a county with more than one PSAP to jointly submit a written plan for consolidation to the Office of Emergency Management. Although that legislation was the driving force behind several consolidations, in the following session the legislature removed requirements of the bill. However, consolidation efforts have not ceased. Between 2001 and today, six consolidations have occurred and the task force is aware of three locations in which PSAP's are in functional or operational consolidation talks. Current talks are based on the desire to reduce cost, increase efficiency, and eliminate duplication of service and occur without legislative mandates.

At the local level "consolidation" almost always begins with the desire to "save money". The issue quickly evolves into whether "saving money" now, or "saving money" in the future is the ultimate goal. Further research is required to identify the financial forecast, individual to the locale.

Savings at the local level are usually realized when a smaller center joins a larger center. Most of the time, this means a loss of jobs because the traffic load at the larger center does not require all staff from the consolidating agency. Additional savings are seen by one agency no longer needing to equip a dispatch center with radio, logging recorder, and computer aided dispatch equipment. However, when two small agencies consolidate together the savings are not as large since it is possible that one of the agencies would need to expand to accommodate the other. A detailed study would need to be conducted to evaluate any potential savings or expenses for consolidation at various locations throughout the state.

A common topic that emerges at the onset of consolidation discussions is "services" -- and whether or not critical service levels will be affected by consolidation, and if those affects will be positive, tolerable (worth the change), or not tolerable at all. Often the definition of positive, tolerable and not tolerable rests with the local public safety executive and his/her level of perceived "control" over how services are delivered to their community and the field units of their departments, and how that may affect their ability to control the reputation of services their department delivers to the public. This perception, by nature, often is the "deal maker" or the "deal killer" of any discussions surrounding consolidation or partnership.

Although they clearly rely on each other, it is important to understand the distinction between 9-1-1 and dispatch services for the purposes of this report. 9-1-1 or Primary Public Safety Answering Point (PSAP) answers the 9-1-1 call. This is the portion paid for by the rate payers through the 9-1-1 tax. On average, the tax covers approximately 28% of the PSAP costs. The remaining funding is paid for by the local jurisdiction(s). Dispatch involves then transmitting that call to the responding agencies and tracking those field units throughout the emergency. A dispatch center that does not receive 9-1-1 calls directly, but receives the information from a 9-1-1 center is referred to as a Secondary PSAP. Secondary PSAP's do not receive 9-1-1 tax revenue from the state.

This distinction is important to outline since Oregon law describes a distinct separation of these services due to what is covered by the rate payers through the 9-1-1 tax. However, most citizens do not see a separation of these services and fully expects that the first person who answers their call for help will dispatch appropriate services based on their local jurisdictions resources. These resources and how they are deployed are controlled at the local level with the majority of the local PSAPs operational costs provided by local funding.

Parties involved in this Taskforce generally agree consolidation can be a positive change in many cases, and in some, it is becoming a financial reality. However, financial savings are not always realized, nor is it always the driving force behind consolidation. The conclusions in this report are similar to those in the Boyd/Doolittle report, and the reports agree on the following topics:

- Optimal number of PSAP's:
  - The variety of circumstances throughout the State makes a "one size fits all" approach impossible. The Boyd/Doolittle report states "The consultants conclude that the optimum number of PSAPs in a county depends on local circumstances, and that no single approach fits all cases."

- State or Local Issue

o With locals paying the majority of the costs for complete dispatch services they have the ability to write policies and procedures that work specific to their employees and citizens. It is possible this control would be lost by consolidation with another jurisdiction and would potentially see a change in service delivery that is not wanted at the local level. Because of this concern, some agencies may choose to maintain their own dispatch by becoming secondary PSAPs and having the 9-1-1 call transferred to them by the Primary PSAP. From Boyd/Doolittle "Effective consolidation requires consolidation of both 9-1-1 call answering and radio dispatch simultaneously.... The consultants conclude that consolidation should be recognized as an issue of local governance and accountability."

- Importance of Consolidation

o Boyd/Doolittle concluded "the remaining consolidation opportunities are relatively low priority issues compared to the other challenges facing the State's 9-1-1 program." At the time of the Boyd/Doolittle report, the higher priority issues were wireless 9-1-1 (the ability to located cell callers when they call 9-1-1), support for the coordinate-based location information, 9-1-1 system performance and reporting, and influencing national efforts towards standardization and policy-setting for 9-1-1 communications.

o Today, the challenge facing 9-1-1 is Next Generation 9-1-1 commonly referred to as NextGen. This next phase of 9-1-1 capability includes the ability to text and/or send photos to 9-1-1. Multiple recent studies indicate a large portion of the population already believes this is possible. A recent Red Cross article recently published stated 70% of the population believes they would receive help within one hour if they "tweeted" 9-1-1. In the same report, nearly half of the users of social media sites already believe emergency services monitor sites like Twitter and Facebook and are ready to respond. Other states around the nation are in beta testing to receive text, video, and still pictures through the 9-1-1 system. The Taskforce believes implementation of NextGen is the absolute highest priority and is already expected by our citizens. Implementing NextGen will not only save lives, but also provide the opportunity for shared resources, thus leading to further opportunities for consolidation, whether Brick and Mortar, or Virtual. Without NextGen, Oregon will quickly fall behind the rest of the nation in our ability to efficiently serve the 9-1-1 caller.

Next Gen should be expedited in Oregon to best serve our citizens. Consolidation should be a lower priority to Next Gen, as Next Gen will allow for additional consolidation opportunities, and because as this report indicates, consolidation in Oregon is already occurring naturally.

Considering the number of studies that have been conducted on local and state levels, including studies currently under way, it is evident consolidation is an issue that continues to be worked on, and has, and is, occurring naturally. This is evidenced by the decrease over the years to the current number of 49 total Primary PSAP's.

Finally, the recommendations in Boyd/Doolittle included the statement "the State should regard consolidation of communications centers as an issue for local determination and should not mandate consolidation of primary PSAP's."

The research in this report supports this statement, as well as the need to focus the 9-1-1 finances towards NextGen, allowing for optimal service to the citizen, as well as increased opportunities towards consolidation.

Glossary

Automatic Location Identification (ALI): The automatic display at a public safety answering point of the subscriber telephone number, the service address for the telephone and supplementary information.

Automatic Number Identification (ANI): The automatic display at a public safety answering point of the subscriber telephone number. "Pseudo-ANI (pANI)" means the number assigned to a wireless 9-1-1 call identifying the tower or sector from which the call originated. It is used for the routing of 9-1-1 Wireless calls to the designated E9-1-1 Primary PSAP.

Automatic Vehicle Location (AVL): Automatic Vehicle Location

Basic 9-1-1: The emergency telephone system in the US that automatically connects 911 callers to a designated primary Public Safety Answering Point (PSAP). Call routing is determined by the Central Office from which a call originates, and may, or may not support ANI and/or ALI.

Central Office: The Local Exchange Carrier facility where access lines are connected to switching equipment for connection to the Public Switched Telephone Network.

Community Notification System:

Computer Aided Dispatch (CAD): Computer Aided Dispatch; Computer Assisted Dispatch. A computer based system, which aids PSAP Telecommunicators by automating selected dispatching and record keeping activities. The use of this system includes but is not limited to, entering call information, dispatching and tracking field units, generating information in records management systems, receiving and distributing information between dispatch and the MDT's.

Customer Premise Equipment (CPE): Communications or terminal equipment located in the customer's facilities – Terminal equipment at a PSAP.

Demarcation: the point at which the telephone company network ends and connects with the wiring at the customer premise. A demarcation point is also referred to as the demark, MPOE (minimum point of entry or main point of entry).

Enhanced 9-1-1 (E9-1-1): The delivery of automatic number and location identification of a 9-1-1 call for service.

Emergency Service Number (ESN): A 3-5 digit number that represents one or more ESZs. An ESN is defined as one of two types: Administrative ESN and Rouging ESN.

Emergency Service Zone (ESZ): An ESN is a 3-5 digit number representing a unique combination of emergency service agencies (Law Enforcement, Fire, and Emergency Medical Service) designated to serve a specific range of addresses within a particular geographical area, or Emergency Service Zone (ESZ). The ESN facilitates selective routing and selective transfer, if required, to the appropriate PSAP and the dispatching of the proper service agency (ies).

Geographic Information Systems (GIS): A mapping system utilized in support of E9-1-1 for the manipulation and display of mapping data at the PSAP.

Master Street Address Guide (MSAG): A database of street names containing address ranges with their associated communities that denote emergency service numbers for 9-1-1 purposes. "Mapped Master Street Address Guide (mMSAG)" means a geographically referenced database of street names that include the following attributes; street name, to and from address ranges, city name, county name, and emergency service number. This database is used to plot the location of a 9-1-1 call provided the appropriate location information is available.

MDT/MDC: Mobile Data Terminal or Mobile Data Computer. The computers in responding field unit vehicles providing information to responders, and allowing responders to send and receive data.

National Warning System (NAWAS): A system used to convey warning to United States based federal, state and local governments, as well as the military and civilian population. The system is used to disseminate warning information concerning natural and technological disasters. This includes but is not limited to acts of terrorism including Weapons of Mass Destruction (WMD), earthquakes, floods, nuclear incidents/accidents, severe weather, tsunamis, and winter storms/blizzards.

NextGen 9-1-1 (NG9-1-1): NG9-1-1 is the next evolutionary step in the development of the 9-1-1 emergency communications system known as E9-1-1 since the 1970s. NG9-1-1 is a system comprised of managed IP-based networks and elements that augment present day E9-1-1 features and functions and add new capabilities. NG9-1-1 will eventually replace the present E9-1-1 system. NG9-1-1 is designed to provide access to emergency services from all sources, and to provide multimedia data capabilities for PSAPs and other emergency service organizations.

P.01 Grade of Service: Emergency telecommunications service in which no more than one call in 100 attempts will receive a busy signal on the first attempt during the average busiest hour**.**

pALI: An ALI record associated with a pANI, configured to provide the location of the wireless cell or sector and information about its coverage or serving area (footprint).

pANI: A telephone number used to support routing of wireless 9-1-1 calls. It may identify a wireless cell, cell sector, or PSAP to which the call should be routed. Also known as routing number.

Phase I Wireless 9-1-1: The delivery of a wireless 9-1-1 call with callback number and identification of the cell-tower from which the call originated. Call routing is usually determined by cell sector.

Phase II Wireless 9-1-1: The delivery of a wireless 9-1-1 call with Phase I requirements plus location of the caller within 125 meters 67% of the time and Selective Routing based upon those coordinates.

Primary PSAP: A primary public safety answering point or local E9-1-1 jurisdiction.

Selective Routing: The capability of routing an E9-1-1 call from a central office to a designated PSAP based upon the telephone number and/or the location of the calling party.

State Frame Relay: A dedicated digital transport service that routes information via switched packets.

References/Links

APCO/NENA strategic plan
http://oregonapconena.org/documents/The%20Plan.pdf

Minnesota Guidebook:
www.911.state.**mn**.us/PDF/**PSAP_Guidebook**.pdf