

# **IXP Communications Report**

## **Grants Pass Department of Public Safety**

### **September 2014**

#### **Introduction**

The City of Grants Pass communications center provides primary 9-1-1 and emergency call receiving for all of Josephine County and also provides dispatching services for all the public safety agencies in the county with the exception of the Sheriff's Office. These services are provided under a number of contractual agreements, including an agreement between the City and the Josephine County 9-1-1 Agency and agreements with the individual agencies that receive dispatching services. The records unit provides records and administrative support services only to the Grants Pass Police Department.

During this review process, on-site interviews and operational observations were conducted by experienced public safety communications personnel. These sessions provided an opportunity to observe how the communications center and records unit operate under routine workload levels and to interact with the on-duty staff to gain an understanding of how their work processes and systems operate. These observations and insights were then supplemented with an analysis of a variety of workload and performance data provided by the organization to frame the material provided in this report.

#### **Communications Center Workload and Performance Metrics**

Public safety communications centers fulfill a vital link between the public and first responders by answering the public's emergency and non-emergency calls for police, fire and emergency medical services. Therefore, the most common measures of communications center performance relate to how quickly these calls are answered by the communications center. There are two prevailing industry standards that serve as a benchmark in evaluating communications center performance:

- The National Emergency Number Association (NENA) Call Answering Standard (NENA 56-005) recommends that 90% of all 9-1-1 calls be answered within 10 seconds and that 95% of all 9-1-1 calls be answered within 20 seconds.
- The National Fire Protection Association (NFPA) Standard for the Installation, Maintenance and Use of Emergency Services Communications Systems (NFPA 1221) recommends that 95% of emergency calls be answered within 15 seconds and 99% of these calls be answered within 40 seconds.

The Grants Pass Department of Public Safety has established performance requirements that are more stringent than these national models, and provide standards of service for both emergency and non-emergency call answering:

- For 9-1-1 and other emergency calls for service (calls to designated 10-digit emergency phone numbers) the performance goal is 95% of calls answered within 10 seconds.
- For non-emergency phone lines the performance goal is 90% of calls answered within 15 seconds.

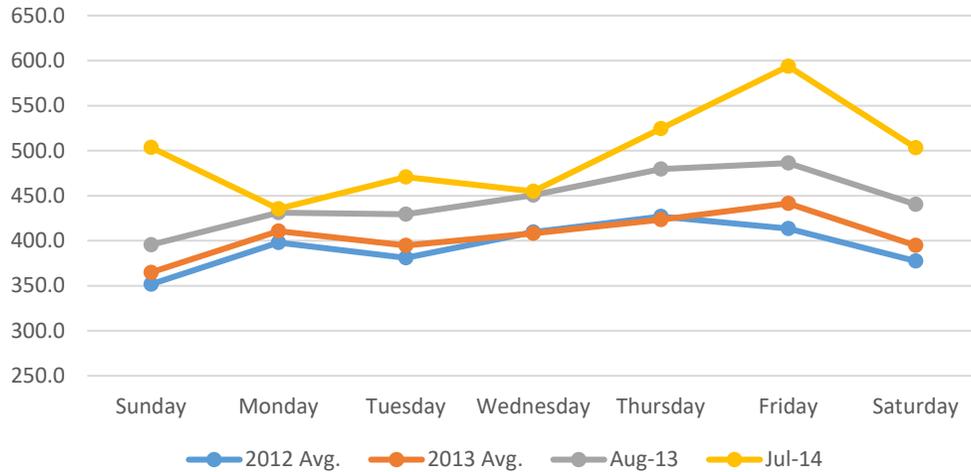
As shown in the table below, quarterly performance reports provided to the 9-1-1 Board indicate that the GPCC is routinely performing better than these standards. Reports from 2011, 2012 and 2013 indicate that over 97% of 9-1-1 and emergency calls are routinely answered within the 10 second goal and 98% or more of the non-emergency calls are answered within the 15 second goal. This exceptional performance is accomplished with a fairly limited communications staff (which varies between 2 and 4 personnel on duty depending on the day of the week and the hour of the day) by having the Records personnel answer the non-emergency lines during normal business hours and 9-1-1 calls for the Sheriff’s Office transferred to their communications center during normal business hours. After hours these calls are transferred to the Oregon State Police.

<b>Percentages of Calls Answered within Performance Goal</b>		
<b>Quarter</b>	<b>9-1-1 &amp; Emergency</b>	<b>Non-Emergency</b>
Q1 2011	98.3%	99.3%
Q2 2011	98.1%	99.2%
Q3 2011	97.7%	98.9%
Q4 2011	97.9%	99.0%
Q1 2012	97.9%	99.3%
Q2 2012	97.3%	98.7%
Q4 2012	97.5%	98.8%
Q1 2013	98.3%	99.1%
Q2 2013	97.6%	98.9%
Q3 2013	97.4%	98.8%
Q4 2013	98.1%	99.2%

The ability to sustain this level of performance into the future will depend on a variety of factors, including the number of calls handled by the communications center and the other duties and responsibilities performed by the communications center personnel. Annual data from 2012 and 2013, along with busy-month data from 2013 and 2104, was analyzed to develop daily and hourly call volume profiles. It is important to note that both inbound and outbound calls are used for this analysis since all require dispatcher time and attention, and once a dispatcher is engaged in a call (whether inbound or outbound) their ability to place that call on hold to answer the next inbound call is limited.

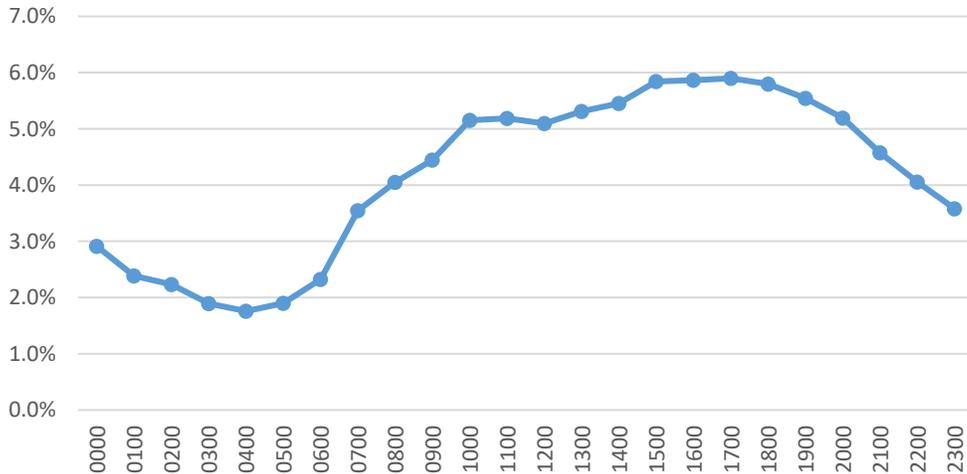
As shown in the chart below, the GPCC experiences their busiest days on Thursdays and Fridays, which is typical of virtually all public safety communications centers, with the annual averages for 2012 and 2013 being in the range of 400 to 450 calls per day. As expected, the busier summer months of the year have higher daily call volumes ranging between 450 and 500 calls per day. The exceptionally high call volume for Friday’s in July 2014 is likely explained by July 4<sup>th</sup> falling on a Friday in 2014.

Average Total Calls (Inbound & Outbound) by Day



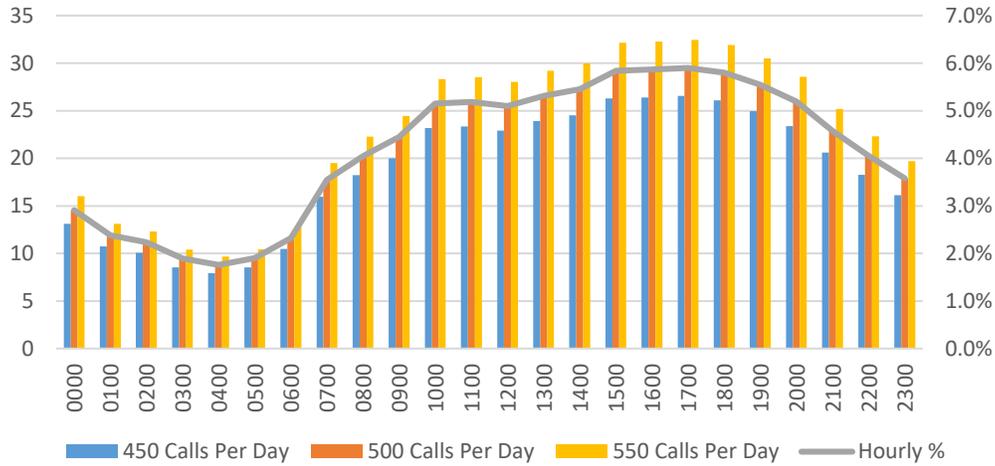
This total call volume varies during the day, with the highest percentage of calls received during the hours of approximately 0900 to 2300, as shown in the chart below which reflects the overall average call volumes for 2012, 2013 and the sample busy months in 2013 and 2014. This curve is also very typical of all other public safety communications centers.

% of Calls By Hour

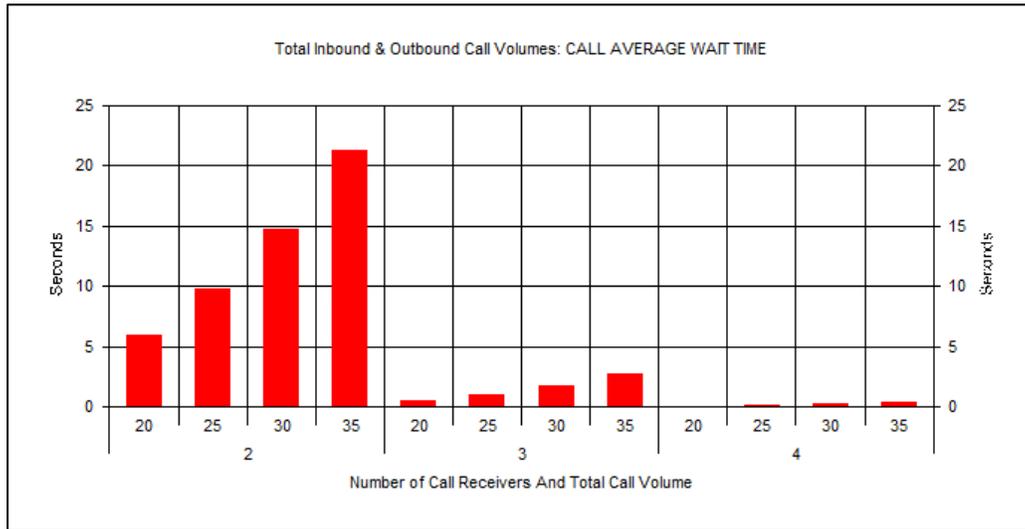


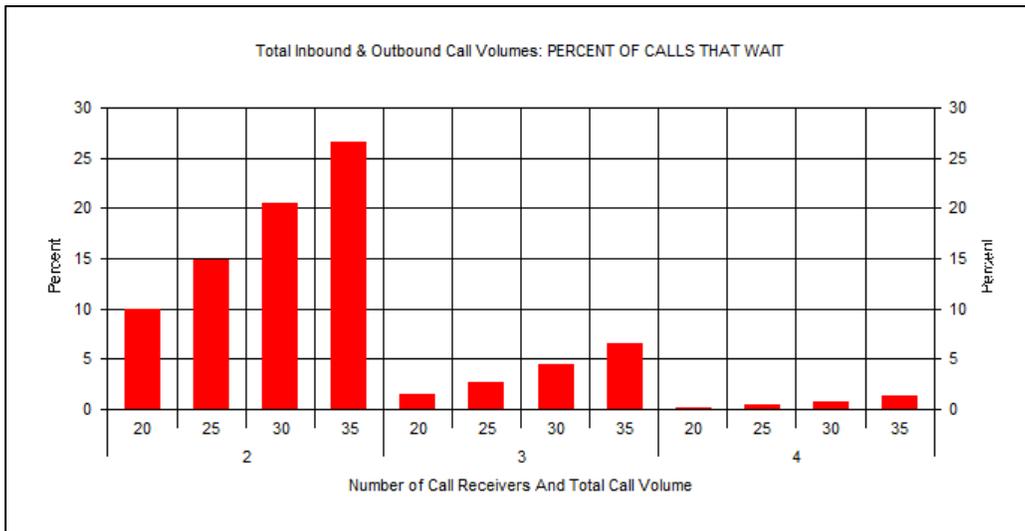
Combining this information allows estimates to be derived for the expected number of calls per hour that can be expected at varying daily call volumes. As shown in the chart below, the GPCC is likely to experience approximately 25 calls per hour during the normal busy hours of an average day and up to 30 or more calls per day on the busier days.

## Estimated Calls Per Hour



Industry standard Erlang-C traffic queuing models allow us to estimate the call answering performance under varying staffing levels and call volume scenarios. The charts below show what the expected call answering performance would be at call volumes of 20, 25, 30 and 35 calls per hour with 2, 3 or 4 personnel available to handle calls.





These charts show that even at a moderate 25 calls per hour, 2 personnel available to handle calls would result in approximately 15% of callers experiencing a wait time of 10 seconds. Adding the 3<sup>rd</sup> person to the mix brings the percentage of calls experience wait times to very low levels consistent with GPCC’s performance goals. It is important to remember however that handling telephone calls is only part of the overall workload handled by the GPCC personnel, and managing multiple radio channels with multiple agencies and in-progress events also requires significant slices of the dispatcher time and attention.

Therefore, even with 3 personnel on duty, the expected call handling experience won’t fully achieve these theoretical levels since each of the on-duty personnel are also handling a combination of radio and other duties. As noted above, having a 3<sup>rd</sup> (or even 4<sup>th</sup>) person to handle telephone call volumes is accomplished during some periods of the day by having Records personnel answering the non-emergency lines. Without this workload distribution GPCC would likely not be able to meet their overall performance objectives. It will be important into the future to make sure that the combination of communications center and records personnel on duty continue to track with the busy hours of the day or the communications center staff.

Similarly, if additional workload were brought into the communications center or the Records staff, the call handling performance will likely decline. One example of this potential additional workload in the years to come will be the added time required to deal with Next Generation 9-1-1 (NG9-1-1) “calls” for emergency services coming into the center as text or data transactions rather than as traditional 9-1-1 telephone calls. Even with CAD or 9-1-1 phone system enhancements to make handling these “calls” easier to manage, they will still likely require processing cycle times longer than traditional telephone calls which will erode overall call processing performance. Another example of additional workload and call volume that could impact overall performance would be the potential implications of integrating either the dispatch or records functions of the Sheriff’s Office into existing Grants Pass operations.

### **Overview of Current Operations, Systems and Facilities**

The communications center currently operates in a very compact operational space with 4 positions capable of call receiving and dispatching operations and one position equipped for call receiving only. While radio system equipment could be added to this 5<sup>th</sup> position to make it fully

functional for call receiving or dispatching operations, this would be the physical limits of the current operational space. A 3-position backup communications center has been established at the Hillcrest Fire Station with 2 of the positions equipped for radio operations.

Technology equipment spaces are also quite compact and have essentially no room for equipment expansion. While future changes in the radio console system may free up some space in the radio equipment room, the main equipment room adjacent to the communications center is completely full. The records unit operates in an office area that formerly supported both the Grants Pass and Sheriff's Office records function. With the Sheriff's Office records function moved to another location, there is space to expand the Grants Pass operation if needed in the future (or to re-integrate the Sheriff's Office records function if this becomes viable in the future).

Overall, the organization is in a good position relative to their various technology systems. The organization has been operational on the New World CAD/RMS/Mobile systems for just over 2 years and after a variety of "new system" issues were ironed out, the systems appear to be meeting their needs well. A number of other technology upgrades or replacements are either already underway or planned for the near future. The 9-1-1 telephone system will soon be upgraded to the latest system levels capable of handling NG9-1-1 in the future and packaged with enhanced statistical reporting capabilities. The logging recorder system is being replaced which will provide capacity for growth and a supportable platform for many years to come. The radio console system needs to be replaced due to vendor end-of-life notifications and plans are in the works to pursue grant resources to accomplish this.

The operational model of the communications center also tracks to industry standards and best practices. Statewide emergency medical dispatch protocols that are approved by the local medical program director are used to process emergency medical calls for service, and quality assurance reviews are conducted on these calls. Processes and procedures appear to be documented and a formal set of guidelines and evaluation mechanisms are in place for new employee training. Enhancing the structure and content of the training material to align with these evaluation forms would further improve the overall quality and coordination of the training process. Consideration could also be given to adapting the training process and material to the APCO Minimum Training Standards for Public Safety Telecommunicators (APCO ANS 3.103.1-2010) to further align with recognized industry standards and best practices.

The records unit also aligns their operations to industry standards and best practices. As the new RMS system has stabilized and workload is handled more efficiently, the number of incidents pending the merging process continues to decline and performance goals are established to drive this improvement further. There is also an increased emphasis on tracking telephone call volumes and the recorded conversations are now going through a quality assurance review process as well.

### **Review of Current Contract Services and User Fees**

The relationship between the City of Grants Pass and the Josephine County 9-1-1 Agency is defined in two separate contractual relationships. First, the Managing Agency Agreement defines the services and administrative functions that Grants Pass provides to the 9-1-1 Agency to manage the routine business activities of the Agency. The City is compensated for these services

at 2012 contract rate of \$10, 284 per month with annual CPI adjustments through 2015. This results in an anticipated revenue of \$126,400 in the FY2014 budget and \$128,700 in the FY2015 budget.

The second agreement is an Intergovernmental Agreement for call taking and dispatching services provided on behalf of the Agency to the public safety first responders in the county (other than Grants Pass itself). The City is compensated for these services at a 2012 contract rate of \$30,300 per month with annual CPI adjustments through 2015. The table below provides annual revenue figures and dispatched incident counts for FY2012 through FY2015 (with 2015 incident counts estimated at 2% over the 2014 level). The effective cost being paid to the City of Grants Pass is currently just under \$25 per CAD incident. This is higher than the \$15.74 per incident that the 9-1-1 Agency is collecting from the contract agencies. These revenues in total cover approximately 63% of the amount the 9-1-1 Agency pays to the City of Grants Pass annually.

	2012	2013	2014	2015	
9-1-1 Agency Dispatch Fees Paid to GPDPS	\$ 363,597	\$ 362,958	\$ 372,400	\$ 379,100	
CAD Incident Totals for non-GPDPS Dispatched Events	14,116	14,422	14,960	15,259	est
Effective Cost per CAD Incident	\$ 25.76	\$ 25.17	\$ 24.89	\$ 24.84	est

Evaluating the effectiveness and appropriateness of this contracted service model requires both a qualitative and a quantitative review. From a qualitative perspective, it is hard to imagine any other operational scenario than the one that is currently in place. The City of Grants Pass is the only jurisdiction in the county with the size and stability to allow them to operate the dispatching services for these smaller agencies in an economical manner. Further, from all indications obtained during the onsite interviews and observations, the services are being performed in a manner consistent with industry best practices and at a level that meets the needs of the individual agencies.

It is also important to remember that the overall level of emergency response coordination in the county is significantly enhanced by all the agencies being handled in a single communications center. This allows information to be shared and coordinated between law enforcement and fire/EMS responders far more effectively than if they were being dispatched out of separate communications centers. This benefits not only the contract agencies but the City of Grants Pass as well, as the communications center is better able to assist field command personnel balance their resources as they respond to emergencies either inside the city or in mutual or automatic aid responses to neighboring jurisdictions.

From a quantitative perspective, we need to look at the total costs for dispatching services, factor out the revenues from the 9-1-1 Agency and then evaluate the remaining costs against the Grants Pass Department of Public Safety CAD incident levels to determine their effective cost per incident. Since the communications center is a part of the overall Support Division budget, and since labor costs account for approximately 84% of the total budget for the Division, the ratio of staffing of the communications center compared to the records unit was used as an approximating mechanism for allocating how much of the Division's total budget was attributable to the communications center.

In the table below, we see that approximately 70% of the Support Division's budget is likely attributable to the communications center operations. These annual costs are then evaluated

against the CAD incident counts provided for this study. The net result is that the effective costs per incident has been declining over the past two years and is estimated to be just over \$28 per incident for FY2015.

		2012	2013	2014	2015
Base Budget		\$ 3,491,486	\$ 3,626,109	\$ 3,035,871	\$ 3,000,117
Offsetting Revenues					
9-1-1 Dispatch Fees		\$ (363,597)	\$ (362,958)	\$ (372,400)	\$ (379,100)
9-1-1 Admin Fees		\$ (123,411)	\$ (123,192)	\$ (126,400)	\$ (128,700)
Other Revenue		\$ (213)	\$ (363)	\$ -	\$ 0
Remaining Cost to spread to GPDPS		\$ 3,004,265	\$ 3,139,596	\$ 2,537,071	\$ 2,492,317
Allocation between Dispatch and Records based on FTE counts					
Dispatchers and Lead Dispatchers		14	15	15	15
Public Safety Clerks and Clerk Aide		6.875	6.875	6.5	6.5
		20.875	21.875	21.5	21.5
Dispatch Ratio		67.1%	68.6%	69.8%	69.8%
<b>Costs to be spread over GPDPS DCFS</b>		\$ 2,014,836	\$ 2,152,866	\$ 1,770,050	\$ 1,738,826
<b>Effective Cost per CAD Incident for GPDPS</b>					
2012 Est CAD Incidents based on 6 months of data	58,552	\$ 34.41			
2013 total CAD Incidents	59,291		\$ 36.31		
2014 Est CAD Incidents based on 6 months of data	60,376			\$ 29.32	
2015 Est CAD Incidents based on 2% increase over 2014	61,584				\$ 28.24

This then allows examination of the fundamental question: is the current effective rate for the external agencies of just under \$25 per incident an appropriate rate compared to the internal effective cost of just over \$28 per incident.

Differential cost per incident values such as this are not uncommon in situations similar to these in Josephine County. The primary agency often incurs a slightly higher effective cost due to a variety of factors including their direct responsibility for capital costs such as facility and system upgrades, costs they would face whether they had contracted customers or not. Further, in situations like the one in Grants Pass with a significant amount of the workload being law enforcement related, there are a number of additional duties and responsibilities in the communications center related to the ongoing status monitoring and interactions with law enforcement field personnel, and internal records personnel, that are not directly tracked through CAD incident numbers.

### **Evaluating the Potential for Consolidation of Dispatch and/or Records Functions with Josephine County Sheriff's Office**

The Josephine County Sheriff's Office operates under a number of very significant financial constraints that limit their hours of operation and service levels to the areas they serve. They currently operate their dispatch function with a budget of \$106,200 for salary, benefit and overtime costs and a staffing level of 1.0 FTE. The records function is budgeted at \$65,100 in salary, benefit and overtime costs and a staffing level of .75 FTE. There is an additional \$30,000 budgeted between these programs for a variety of contracted services, supplies, training and similar expenses, many of which may not change even if dispatching or records functions shifted to the City of Grants Pass.

The potential for consolidation of dispatch or records functions needs to be examined both separately and collectively since there are a number of individual considerations for each scenario and an additional set of considerations in the combined scenario.

### **Consolidation of Dispatch Operations**

First we will discuss the potential for consolidation of dispatch operations. Under current operational conditions, the Grants Pass communications center is already serving as the primary 9-1-1 answering point for the entire county and then transferring calls to the Sheriff's Office communications center during business hours (afterhours calls are transferred to the Oregon State Police). Unless the staffing levels and hours of patrol operations were to change for the Sheriff's office, the only thing that would really change for the Grants Pass communications center would be adding the responsibility for managing dispatching duties during the hours that patrol and response resources are available.

While this added workload may seem to have limited impact, we have to evaluate it in the context of the existing workload and staffing levels in the communications center and the internal workload distribution strategies that allow the communications center to meet their performance goals. These strategies include very limited call durations on Sheriff's Office calls today since they are transferred and the records personnel answering non-emergency Grants Pass lines during normal business hours.

The practical reality in the communications center will be that the added telephone and radio activities to support the Sheriff's Office, even with their limited hours of operation and with no added responsibilities for after-hours call outs or other administrative functions, would require that Grants Pass modify their scheduling strategies so that a minimum of 3 personnel were on duty at all hours of the day, and a 4<sup>th</sup> person would need to be on duty during the hours that the Sheriff's Office had patrol officers in the field. Collectively, this would likely require the addition of 1.0 to 1.5 FTEs of total hours to the Grants Pass labor pool. This would likely make the direct labor costs for consolidating the Sheriff's Office into Grants Pass communications center almost neutral or perhaps slightly higher than their current costs.

But adding personnel is only part of what would be needed to allow Grants Pass to take over Sheriff's Office communications functions. There will also be a need to train the entire staff on Sheriff's Office operational procedures while also training the new personnel in both the existing training program as well as the additional Sheriff's Office processes. Even if most of this training is accomplished 'on-the-job' it will take time and coordination to make sure that processes are well documented and training processes are established and followed to make sure the staff is ready to assume the Sheriff's Office duties.

It is highly inadvisable to consider keeping the Sheriff's Office on their existing CAD system and tasking the Grants Pass communications center with learning and operating on two separate CAD systems. Therefore, it will also be necessary to make modifications to the Grants Pass CAD configurations to accommodate the additional units, personnel, response areas, and response profiles that will be needed to handle the Sheriff's Office

response area. While some of this work may be accomplished with internal resources, some will also likely require support from New World and this would likely be at an additional cost rather than covered as a maintenance support item.

Further, the Sheriff's Office mobile units would need to have New World mobile clients loaded into their computers so they could interact with the Grants Pass communications center and CAD system in the same manner as all other units they manage. Also, if the Sheriff's Office were to retain their own records system and function, there would likely be a need to develop an interface between New World CAD and the Sheriff's EIS records system, and these interfaces can sometimes become complex and expensive to implement.

It would also be highly advisable to get the 5<sup>th</sup> furniture position equipped with radio console capability so there is an ability to use all positions in the room for either call receiving or dispatching work during the busiest hours of the busiest days. Since the current radio console system is due for replacement, adding this position would probably not be feasible until the full system is replaced.

Given all of these additional costs just to be able to merge the Sheriff's operating into the Grants Pass communications center, and recognizing that the labor costs may be neutral or slightly higher compared to current costs, there does not appear to be an opportunity to absorb the Sheriff's Office dispatching function within their limited fiscal constraints. However, if funding could be found for the transition costs, and if the Sheriff's Office agreed to fund the staffing requirements needed to absorb their workload, it does seem feasible to consolidate the communications and dispatch function separate from the records function.

### **Consolidation of Records Operations**

The Sheriff's Office currently staffs their records function at a 0.75 FTE level and even if the same staffing level was provided to them by Grants Pass at a comparable cost, the most significant cost of consolidation of the records function would be in the conversion of the Sheriff's Office records to the city's New World environment. Similar to the CAD and mobile discussions related to the communications center, it isn't reasonable for Grants Pass to consider taking on the Sheriff's records function if it were to remain on a separate system. If the migration to a common records platform was not selected and funded, the Sheriff's office would be better served to just keep their records function in-house and staffed at whatever levels they can afford.