ORDER NO. 2014-0035

AN ORDER ESTABLISHING A PUBLIC SAFETY FEE (PSF) IN THE AMOUNT OF TWO ($2.00) DOLLARS PER RESIDENTIAL METER EQUIVALENCY (RME) PER MONTH FOR THE PURPOSE OF FUNDING TWO COMMUNICATIONS OFFICER POSITIONS

RECITALS:

1. The city has had a long-standing need for additional communications officers. Both a Staffing Study conducted in 2010 and an ad hoc report from Oregon Emergency Management, prepared July 2014, indicates Newberg-Dundee 9-1-1 is significantly understaffed when compared to other PSAPs (Public Safety Answering Point) in Oregon of comparative size.

2. To provide an adequate level of 9-1-1 services, it is necessary to provide stabilized funding for an existing communications officer and to hire an additional communications officer.

3. Call volume, population, activities, and field personnel have increased over time while staffing of the dispatch center has remained stagnant.

4. No new personnel have been added to the dispatch center since 2005.

5. The City Council adopted Ordinance 2009-2714, which authorized the establishment of a public safety fee to fund police and fire services. The ordinance provided a process for adopting a public safety fee. The ordinance is hereby attached as Exhibit A and incorporated by reference.

6. Support Services Manager, Mary Newell, provided a Memorandum/Administrative Report of the historical background and necessity of increasing staffing in the 9-1-1 dispatch center which is hereby attached as Exhibit B and incorporated by reference.

7. The National Fire Protection Association requires two dispatchers on duty or in the operations room at all times (NFPA 1221, Operations, § Staffing 7.3.2*, 2013 Ed.).

8. The city of Newberg Budget Committee and City Council adopted FY 14/15 budget based in part on adoption of this PSF.

9. In accordance with the process established by ordinance, the City Council conducted on October 20, 2014, at the regular scheduled meeting, a public hearing to determine if the request for the PSF meets the criteria as provided for in the Newberg Code. The format for that hearing is marked as Exhibit C, which is attached and incorporated by reference. The criteria for establishing the PSF is listed in Exhibit A, Section 5 which has been codified in Section 36.37 of the Newberg Municipal Code, also contained in Exhibit A.

10. The council has taken into consideration the facts and information presented to them, as well as the testimony presented during the October 20th public hearing.

THE CITY OF NEWBERG ORDERS AS FOLLOWS:

1. Recitals: The recitals are hereby adopted by the city council and considered facts in the deliberation.

2. Public Safety Fee (PSF): A PSF increase is hereby established and authorized to be charged as follows:

a. Amount: Two ($2.00) dollars per residential meter equivalency (RME) per month will be charged on all water meters within the city of Newberg according to the following based on the Sixth Edition of the American Water Works Association (AWWA) Manual of Water Supply Practices (M1 Manual), table VI.2-5, Meter Equivalencies:

Meter Size	Meter Equivalent
5/8" or ¾"	1.0
1"	2.5
1 ¼"	3.5
1 ½"	5.0
2"	8.0
3"	16.0
4"	25.0
6"	50.0
8"	80.0
10"	210.0
12"	265.0

b. The amount of the fee shall be adjusted on July 1, 2015, and annually thereafter, and shall increase or decrease in a percentage amount equivalent to the Portland CPI-U for the prior calendar year, as published by the U.S. Bureau of Labor Statistics.

c. Responsible Party: The person(s), firms, corporation, or entity (hereinafter referred to as "person") responsible for the water utility charge will be responsible for the PSF. If there is no water service to the developed property, the person with the right to occupy the developed property will be responsible for the PSF.

d. Implementation: The PSF will be implemented and charged through the November 2014 water utility bill. However, the city manager (CM) has the authority to delay implementation if the CM deems it necessary, but the PSF will be implemented as soon as possible if delayed after the November billing.

e. Expenditures: The revenue collected from the PSF will be used to stabilize the funding of the existing communications officer, and fund an additional communications officer, including all necessary expenses.

f. PSF Designation: The PSF will be referred to as Communications Officer Public Safety Fee (COPSF).

3. Administrative Report: The administration has presented to the city council an administrative report recommending an amount and the implementation of the PSF. The city council adopts the administration report, which is attached as Exhibit B and incorporated by reference.

4. Hearing Format: Exhibit C is the hearing format to be used for this Order.

5. Findings of Fact: The city council adopts the Findings of Fact as set forth in Exhibit D, which is hereby attached and by this reference incorporated. The Findings of Fact addresses the criteria for establishing the PSF. The council finds that the criteria for establishing the PSF has been met and satisfied.

6. Administration: Under the authority of the CM, city administration is hereby delegated the authority to administer the PSF, including charging, collecting, and implementing the PSF. The CM is hereby delegated all necessary authority for implementation and administration of the PSF. Furthermore, the CM is delegated the authority to do all necessary acts; enter into all necessary agreements; and execute any other necessary documents for the implementation and collection of the PSF. This authority is in addition to the authority given to the administration under Newberg Code provision § 36.36 entitled, "Administration and Collection." Furthermore, additional conditions for implementation and collection are presented in Exhibit E, which is hereby attached and by this reference incorporated. The authorized conditions are to be implemented by the administration.

7. Appeal: Any dispute, claim, or other disagreement concerning the implementation, charges, and collection of the PSF including but not limited to determination of the number of RME's; the amount of the PSF to be charged; the responsible party; and settlement of disputed claims will initially be made by the finance director. Appeal of this decision will be to the city manager. The city manager's decision will be final.

- **EFFECTIVE DATE** of this order is the day after the adoption date, which is: October 21, 2014.

ADOPTED by the City Council of the City of Newberg, Oregon, this 20th day of October, 2014.

Sue Ryan

Sue Ryan, City Recorder

ATTEST by the Mayor this 23rd day of October 2014.

Bob Andrews, Mayor

Exhibit B
to Order No. 2014-0035

Administrative Report

Date: **August 21, 2014**
To: **Mayor and City Council**

Facts: Police Chief Brian Casey
Report Author: Truman A. Stone, City Attorney

Public Safety Fee for Police Services

Recommending a Public Safety Fee (PSF) for a Division of Police Services Pursuant to Code Provisions 3.30.10 – 3.30.030.

RECOMMENDATION: Implement a Communications Officer Public Safety Fee ("COPSF") effective November 1, 2014 in the amount of two dollars ($2) per month per residential meter equivalent ("RME"). The PSF is to be paid by the party paying the City's water utility charges or person(s) having the right to occupy the developed property.

EXECUTIVE SUMMARY

The City of Newberg's 9-1-1 Communications Center, a division of the Newberg-Dundee Police Department, has a need for up to four additional communications officers. While call volume, population, field personnel, and dispatch activities have increased over time, staffing of the dispatch center has remained stagnant. No additional personnel have been added since 2005. The City is relying on overtime and records personnel to staff the dispatch center.

One additional communications officer position has been authorized by the City Council, which has recognized the need for a staffing increase, but sufficient revenue is not available. Present revenue sources are not sufficient to meet the need, and the trends affecting the general fund could result in staffing cuts in the Communications Center.

The staffing shortage in the dispatch center impacts the ability of the Public Safety Answering Point (PSAP) to function efficiently, potentially affecting citizen, officer, and firefighter safety. Less than two communications officers on duty at any given time adversely affects the City of Newberg Fire Department's insurance rating.

It is the City's obligation to ensure that 9-1-1 calls are answered and appropriate resources are dispatched immediately. It is also the City's obligation to provide

adequate dispatch and radio support for police, fire, and EMS responders while in the field.

The proposal is to fund one existing and one new communications officer position by means of the public safety fee. This will increase the total number of communications officers from nine to ten.

The proposed amount of the fee is two dollars ($2) per RME per month. By using the fee method, those occupants and users of developed properties will pay their fair share for the police services needed.

The City will be able to better provide professional, responsive, and high quality dispatching services. It is recommended that the Council pass Order No. 2014-0035 providing for the COPSF.

I. STATEMENT OF FACTS: Police Chief Casey has studied the criteria and comparison factors used to determine the necessary staffing of communications officers to deliver quality dispatch services, pursuant to City Code provisions 3.30.010 – 3.30.030 as follows.

A. <u>Specific purpose or use of fee increase</u>:
The Newberg-Dundee 9-1-1 Communications Center needs four additional communications officers to provide 24-hour dispatching services to the communities of Newberg, Dundee, and the surrounding fire and EMS dispatch service area. Currently, nine communications officers staff the dispatch center, minimally covering the 42 weekly, 8-hour shifts, required to maintain year round shift coverage. Administration has relied on overtime and records personnel to cover any absence due to illness, vacation, training, or position vacancy. The dispatch supervisor works daily shifts as a communication officer, pulling him/her from their primary supervisory duties. When working dispatch, the records person cannot complete assigned records and evidence duties. Long overtime hours cause communications officers to suffer from fatigue and stress, when they should be operating at optimal capacity. This situation impacts their ability to function efficiently, potentially negatively affecting citizen, officer, and firefighter safety.

The City proposes funding these positions by implementing the COPSF. This will fund one existing and one new communications officer position bringing the 9-1-1 communications staff to a total of 10 communications officers. Through Chief

Casey's research, the need for the additional communications officer positions has been established.

B. Estimated revenue the PSF would raise for the City of Newberg:

Creating a fee to fund two communications officers will provide a stable funding source for this critical need.

City staff proposes a two dollar ($2) per month per residential meter equivalent (RME) within the City of Newberg. An RME is a number/point system related to the size of the water meter servicing a property and its relation to an average single-family residential meter. The number of RMEs consigned to different users is based on the size of the meter.

The City has legal authority to establish an appropriate fee and designate a class of persons to be responsible for paying such fee. The revenue projections for the COPSF are as follows[1]:

Communications		
Budget (July - June) REVENUES	**Annual Budget based on $2/RME**	
2014-15	$ 192,981	
2015-16	$ 203,111	
2016-17	$ 205,218	
2017-18	$ 207,315	
Communications		
Budget (July - June) EXPENSES	**Annual Budget based on $2/RME**	**Contingency**
2014-15	$ 169,376	$ 23,605
2015-16	$ 184,225	$ 18,886
2016-17	$ 188,892	$ 16,326
2017-18	$ 197,817	$ 9,498

[1] This chart shows the adopted budget. Delay in implementing this PSF will decrease both the revenues and expenses for 2014-15.

The COPSF will be implemented and assessed through monthly water utility billing statements with an anticipated start date of November 2014. The city manager is delegated the authority to delay the implementation of the COPSF for administrative necessities.

Revenue derived from the COPSF will pay for one existing and one new communications officer, for a total of two positions.

The COPSF will also be used for expenditures necessary or desirable in connection with those positions.

C. Specific amount of the PSF and the method of determining the amount of the PSF:

The proposed COPSF is two dollars ($2) per month per residential meter equivalent ("RME"). The COPSF is to be paid by the party paying the City's water utility charges or person(s) having the right to occupy the developed property.

The Interim City Manager presented a balanced budget to the 2014-2015 City Budget Committee, which included the proposed PSF. The original proposal also included $0.66 cents to supplement the existing police officer PSF. The $0.66 has been pulled from consideration and is not a part of this report.

To determine the fee amount for the COPSF, City staff determined the costs of a communications officer, including benefit rollups, and projected estimated costs over a four-year period. The proposed $2 fee will fund two positions, plus maintain a small contingency balance. Communications Officers cost less than a police officer. Unlike the current police officer PSF (which includes costs associated with vehicles, uniforms, training and supplies) no costs have been included for the COPSF to offset the cost of computers, headsets, training or uniform expenses.

The dire need for additional communications officers and funding options were discussed during the spring 2014-2015 Budget Committee hearings. Due to serious budget constraints, Budget Committee members were divided on whether or not to support adding up to four additional communications officer positions, according to one needs study. The Budget Committee settled on one additional communication officer.

The Budget Committee approved the proposed budget, with the PSF as proposed, recognizing the PSF would be dependent upon public hearing and Council approval required by city code. On June 19, 2014, the Council adopted the proposed budget as approved by the Budget Committee and as adjusted by City Council.

D. Citizens who would be charged the PSF:

All person or persons, including businesses, corporations, non-profits, and/or any other entity paying the City for water utility charges, will pay the COPSF. If the property is developed, but there is no utility service to the property, or if water services are discontinued, the COPSF will be paid by the person(s) authorized to occupy the developed property.

The proposed COPSF is two dollars ($2) per RME per month. Larger water meters generally mean more occupants. The smallest meter is ¾ inch and is equal to one RME. The largest potential meter is 10 inches, with a RME of 115. Most current users have a meter between between ¾ inch (1 RME) and 4 inches (25 RME). Irrigation meters such as Water districts and Springs customers outside the city limits do not pay a fee.

The assessment and collection of the COPSF will occur through the utility billing system in accordance with the proposed order (Order No. 2014-0035) of the Council.

E. Reporting:

The City administration will account for all revenue received pursuant to the COPSF. City administration will track all expenditures made with funds collected from the COPSF. A report showing revenue and expenditures from the COPSF will be submitted to the Council with the annual budget. The report will be reviewed and approved by the Council.

II. CRITERIA: The criteria for establishing a PSF has been adopted by Ordinance 2009-2714 and outlined in the Newberg Code in Sections 36.37. (See Exhibit A to the Order.) This report presents the facts that are addressed in the criteria. The criteria and facts are as follows:

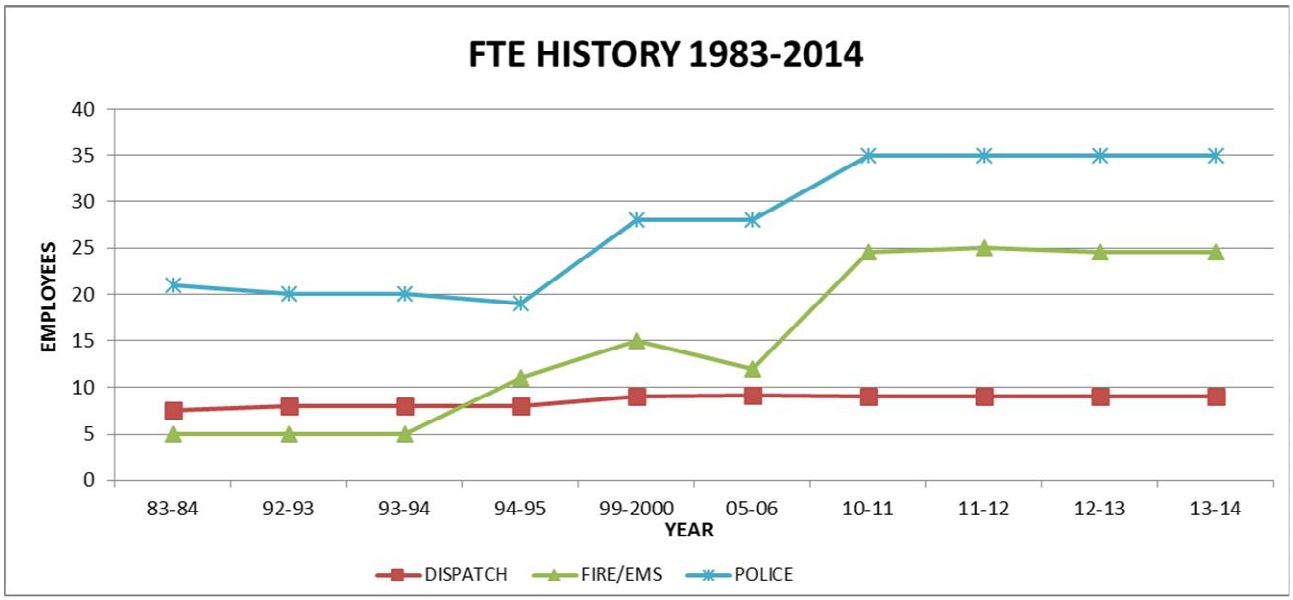
Administrative Report

A. The Need for Services:

Newberg-Dundee Communications Center is the PSAP for all emergency 9-1-1 calls in east Yamhill County. Newberg-Dundee Communications provides dispatching services for Newberg-Dundee Police; Newberg Fire and EMS; Newberg Fire District; Dundee Fire; and Dundee Fire District. Among their many duties, communications officers provide pre-arrival instructions, assist callers with CPR and/or first aid, obtain landmarks to guide officers or firefighters, and update and transmit new information. Communications officers are the first public safety responders as they screen and dispatch all emergency calls for service, providing ongoing support to police, fire and EMS field operations.

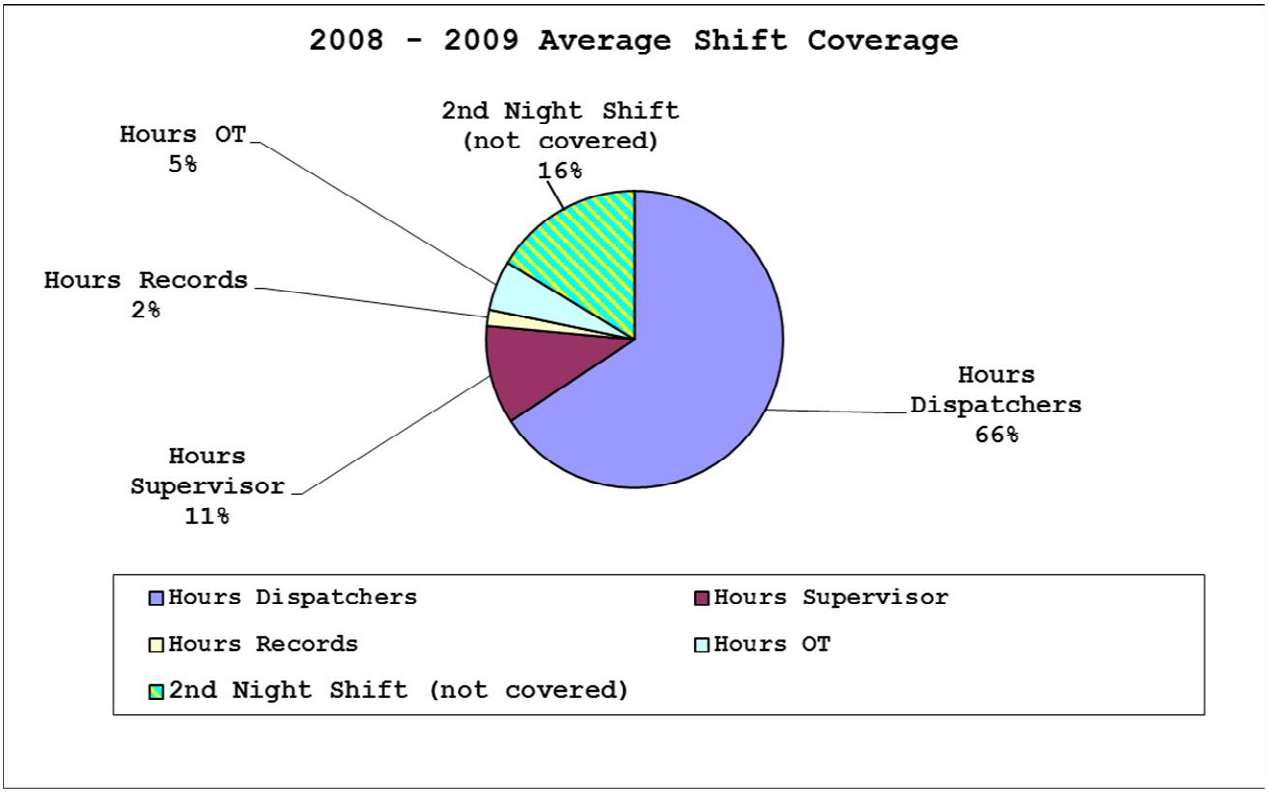
Newberg-Dundee Communications also answers all business calls for the Newberg-Dundee Police Department, and answers after hour emergency calls for the Newberg and Dundee Public Works Departments. Communications officers provide records support for Newberg-Dundee Police Department through citation entry, warrant verification, database search/query, connecting patrol and probation with officers in the field, tracking parole and probation home visits, monitoring alarms of city buildings, and monitoring holding cells and building security cameras.

While call volume, population, activities, and field personnel have increased over time, staffing of the dispatch center has remained stagnant. No new personnel have been added to the dispatch center since 2005. As some personnel left, they were offered an option to work part-time to supplement staffing whenever possible, taking advantage of their certification and training. This part-time status helped alleviate some of the overtime incurred when the center was less than fully staffed. However, even when fully staffed with budgeted FTEs, the Newberg-Dundee 9-1-1 Communications Center is understaffed to handle the workload 24 hours per day, 365 days of the year.



Between 1993 and 2014, both fire and police personnel have experienced growth in staffing. This means communications officers' workload has increased as they are tracking more field personnel, additional patrol units, firefighting and EMS apparatus, and experience a higher incidence of radio traffic.

The National Fire Protection Association requires two dispatchers on duty or in the operations room at all times (NFPA 1221, Operations, § Staffing 7.3.2*, 2013 Ed.). The graph below represents staffing as it existed in 2008-2009. During this period and prior, frequently only one dispatcher worked the graveyard shift. Currently, there are occasions where the center cannot meet this requirement due to lack of available personnel, creating a situation that could negatively affect the insurance rating for Newberg Fire Department.



As presented to the 2014-2015 budget committee, with nine (9) FTE, Newberg-Dundee 9-1-1 Communications Center is short staffed to meet current needs, resulting in excessive overtime. Excessive reliance on overtime is an indication that management is using a reactive approach rather than a proactive approach to handling the workload.

Too much overtime leads to stress, employee burnout, interpersonal conflict within the workplace, frequent schedule conflicts with family events outside of usual shift schedules, employee dissatisfaction with the agency and management, and illness. Chronic stress adds to employee fatigue. "Even though the position is not a physically demanding job, it is an extremely mentally demanding job which takes its physical toll on a dispatcher every day. Exhaustion is derived when combining the 'mental' and when exposed to chronic stress." (APCO ProCHRT, Aug 2011, pg 32). Complete report may be found at https://www.apcointl.org/resources.html.

Since 2011, funds paid to cover shifts were equivalent to the cost of one full-time dispatcher, or nearly so. The total required overtime costs were mitigated by coverage hours worked by Records at straight time. If overtime were used to fill the staffing gap, overtime costs would have been higher.

	2011	2012	2013
Overtime Hrs Worked	1,438.00	2,008.50	1,771.50
Avg OT / month	33.04	35.70	36.52
Yearly OT Cost	$47,511.52	$71,703.45	$64,695.18
Dispatch Hours Covered by Records Person	318.50	105.50	564.00
Reg Pay Hours	22.03	22.66	23.18
Reg Pay Costs	$7,016.56	$2,390.63	$13,073.52
Total OT	$54,528.08	$74,094.08	$ 77,768.70
Cost of 1 FTE at CO1F	$76,941.00	$76,941.00	$ 77,251.00

"The dispatch center that is constantly working at or near capacity makes it difficult to respond to and manage the unexpected occurrence, whether that occurrence is a disaster or merely a sudden increase in call volume" (APCO Project Retains, Aug 2005). APCO Project Retains may be found at https://www.apcointl.org/resources.html.

Newberg-Dundee 9-1-1 has experienced call overload during incidents such as ice and snowstorms, wind storms, motor vehicle crashes, and earthquake. During a large-scale emergency, the dispatch center will not be adequately staffed.

Administrative Report

In preparation for the 2010-2011 budget, an internal staffing and workload evaluation was conducted using 2007-2009 payroll, phone, and CAD data.

This study, *Minimum Staffing Available Hours*, identified the number of communications officers required to cover the dispatch center 24-hours per day, working three eight hour shifts, based on "available hours." This study averaged the leave hours used by employees over a three-year period, identifying the actual number of available hours required to cover the shift. For this staffing model, we utilized payroll data from 2007-2009 to tally and then average hours worked; and vacation, comp, holiday, and sick time used. Lunches and breaks were deducted from available hours. Twelve hours of training is the minimum required to maintain telecommunicator and EMD certification. Trainee hours were not included in computations because a trainee is unable to work independently.

Dispatcher Minimum Staffing Level
to Maintain Net 2
2007 - 2009

		Annual Available Hrs										
Shift Hours	8			Minimum Staff Net:	2							
					Su	Mo	Tu	We	Th	Fi	Sa	Total Shifts
				Days	2	2	2	2	2	2	2	14
Days off per week	2	2080		Afternoons	2	2	2	2	2	2	2	14
Vacation (hours)	93	1987		Nights	2	2	2	2	2	2	2	14
Comp (hours)	84	1903										
Sick (hours)	33	1870		Dispatchers Needed Days								
Holiday+Holiday Bank (hours)	25	1845		4	Persons rounded up to whole numbers							
Break (hours)	260	1585		Dispatchers Needed Afternoons								
Training (hours)	12	1573		4								
Unpaid (hours)		1573		Dispatchers Needed Nights								
FMLA (hours)		1573		4								
Injury (hours)		1573										
				Total Dispatchers needed								
Total Dispatcher Annual Available Hours:		1573	76% of 2080	12								

This study recommended that four (4) communications officers are needed (rounded up) per shift at 1573 available hours. It would take more than 1941 available hours to reduce the number to three (3) FTEs per shift.

Additionally, there are several large projects and changes on the horizon which will have a major impact on dispatch staff, as well as police and fire users. It is preferable that we hire to resolve the current staffing shortage, and 'pre-staff' in anticipation of possible retirements before these major change(s) occur. This will allow a smoother, safer transition, allowing the city to meet the needs of Newberg's citizens, public safety users, and staff.

B. Comparison of resources to provide such services by examining the following:

1. <u>Comparison with resources available in similar communities</u>:
There is limited information when reviewing comparisons to other dispatch centers. This is due to the diversity of services offered, size, and governance.

Staff turned to the State of Oregon for supporting comparison documentation. In the State of Oregon, the 9-1-1 program was established by the 1981 Oregon Legislature (ORS 403.100 – 403.380) with the mission to ensure seamless operation of the statewide Enhanced 9-1-1 system. Oregon Emergency Management (OEM) administers the 9-1-1 program for the State of Oregon.

OEM requires an annual financial report be filed by each PSAP to track actual costs incurred each fiscal year; required by ORS 403.120. To compare resources within the State of Oregon, staff contacted OEM for summary data for PSAPs of similar size. In July 2014, OEM developed an ad hoc report, compiling staffing and call data for those dispatch centers having three 9-1-1 phone workstations as does Newberg-Dundee 9-1-1. That report is attached as Attachment 1 to this Administrative Report and by this reference incorporated. Of the 10 PSAPS of similar size, four agencies share a similar total telephone call volume: Baker County, Malheur County, Tillamook, and Union County. Of the four PSAPs with similar total call volume, Baker and Malheur counties staffed fewer FTEs than Newberg
(Attachment 1).

The City of Newberg has studied consolidation opportunities with other dispatch centers on many occasions, none of which have been successful. Two of those consolidation studies prepared by outside consultants provided staffing recommendations, as summarized below:

> Consolidation: City of Newberg and NORCOM, November 6, 1998.
> Prepared by: J. N. Hartsock Project Management
> Recommendation: Hartsock indicated Newberg's 8 dispatchers in 1998 were sufficient for the workload at that time. Hartsock projected 9.1 dispatchers would be needed by Newberg in 2006 based on the projected growth factor of 2.75% applied to the 1998 workload.

Consolidation: Yamhill County Communications Agency (YCOM) and Newberg
Prepared by: Emergency Services Consulting Group, June 2000

Recommendation: Recommendation was "staffing analysis based on workload indicates that Newberg has a staffing shortfall of two (2) full-time positions" as it related to the current/existing staffing of eight (8) dispatchers. Further, Emergency Services Consulting Group's five (5) year projection said Newberg would need 10 dispatchers in 2005.

Today, in 2014, at nine (9) FTE, Newberg-Dundee 9-1-1 has less staff than the two independent consultants projected Newberg would need by 2006 (Attachment 2a & 2b).

2. Comparison with resources used to provide services, such as number of police officers or firefighters per capita as shown through nationally recognized service studies:

There is a lack of 9-1-1 center comparison information as it pertains to standardized staffing calculations for dispatch centers.

APCO (Association of Public Safety Communications Officials) offers some guidance through a variety of dispatching related reports and papers, such as their 2005 guide, "*APCO PROJECT RETAINS Staffing and Retention in Public Safety Communication Centers."*

Staff prepared a staffing analysis, using The APCO Project RETAINS *Effective Practices Guide and Staffing Workbook*. Developed by APCO for dispatch managers to estimate appropriate staffing levels for the work in their centers and to calculate turnover and retention rates, staff utilized the work sheets and tools to determine that four (4) additional dispatchers were required to be fully staffed without relying on a records person and supervisor for shift coverage (Attachment 3). Fewer FTEs could be possible should the communications center continue to require the supervisor to work shifts and staff with the records person.

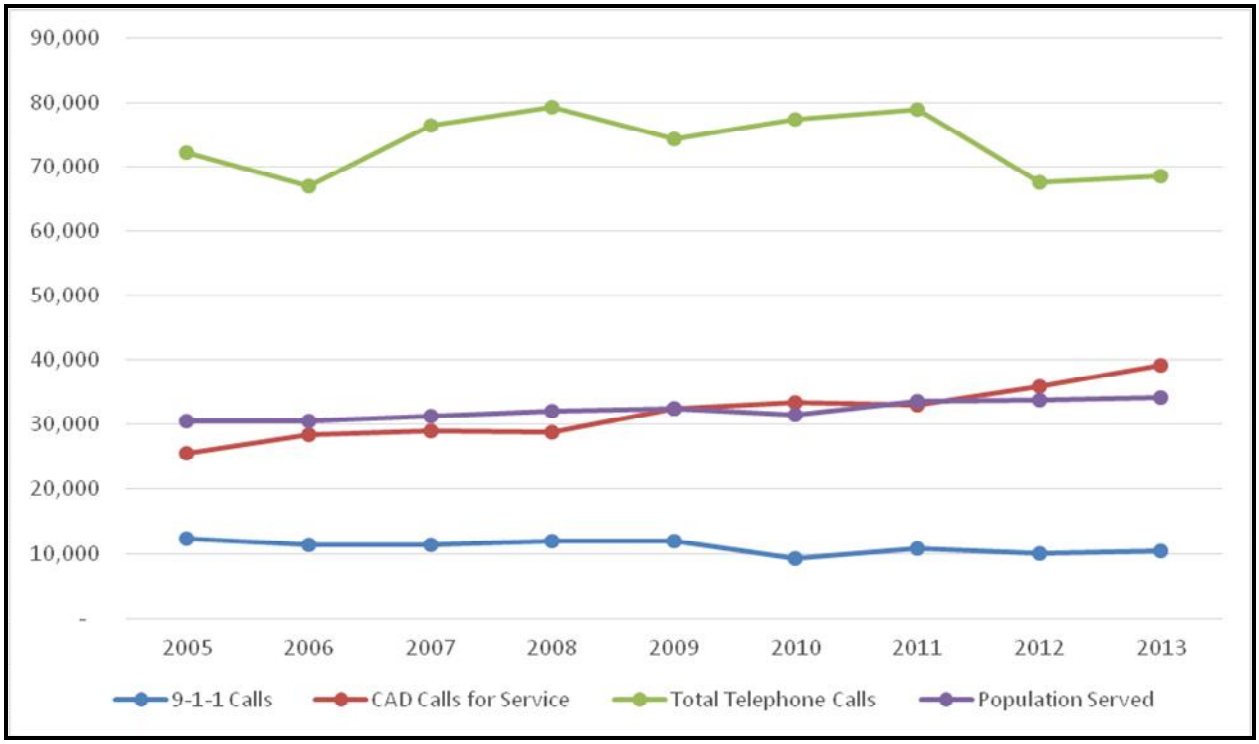
2006 - 2009 data was used in this study. Data was pulled from the Vesta Pallas 9-1-1 phone system to obtain call statistics for business and 9-1-1 phone lines,

and an average call processing time was calculated. Payroll data was gathered to calculate total hours that each dispatcher is available to answer calls. Not included in available console time was an average of vacation, holiday, sick, personal leave, and lunch/breaks used by FTEs. The turnover rate was calculated using payroll data.

This study recommended the Newberg-Dundee Communications Center would require 11.5 FTE if the schedule included the Records-Evidence Tech and Dispatch Supervisor in the work schedule. 12.6 FTE would be required if the Records-Evidence Tech and Dispatch Supervisor were removed from the schedule.

3. Comparison of statistics showing the calls for services or incidents that require services from year to year to determine if the need for services has increased or decreased.

Below is a chart for telephone calls from 2005-2014, CAD (computer aided dispatch) calls for service resulting in a computer generated report, and population. Population includes the cities of Newberg and Dundee, and the rural population within the PSAP coverage area.



Total telephone call statistics were fairly stable with some peaks and valleys over the eight-year period, mainly due to technical changes in the phone system and how calls were calculated. Population increased slightly over the same period of time from 30,519 to 34,171. 9-1-1 phone activities requiring response from police, fire, EMS or other ranged from a high of 12,264 in 2005 to 10,406 in 2013. CAD calls for service, however, steadily increased from 25,479 in 2005 to 39,127 in 2013. This represents a 53.6% increase in eight years. CAD calls best represent the actual workload of communication officers, since electronic communication is replacing telephone and radio communication.

Daily, communications officers handle large numbers of 9-1-1 and business calls coming into the dispatch center. CAD activities include self-initiated activities by officers, in addition to the tracking of an individual's phone request for a service by police, fire, EMS, or other. CAD activities do NOT include requests for an officer, records, or other miscellaneous information requests. The number of CAD activities is much higher than the total number of 9-1-1 calls received annually. CAD activities do include all responses sent as a result of a 9-1-1 call. In 2013, CAD activities averaged 107 per day or 35 per dispatch shift, which all

required some activity by a communications officer to help facilitate the activity of the responding agency.

4. Any other recognized study or authoritative source showing comparison of resources needed with services to be delivered in the public safety area.

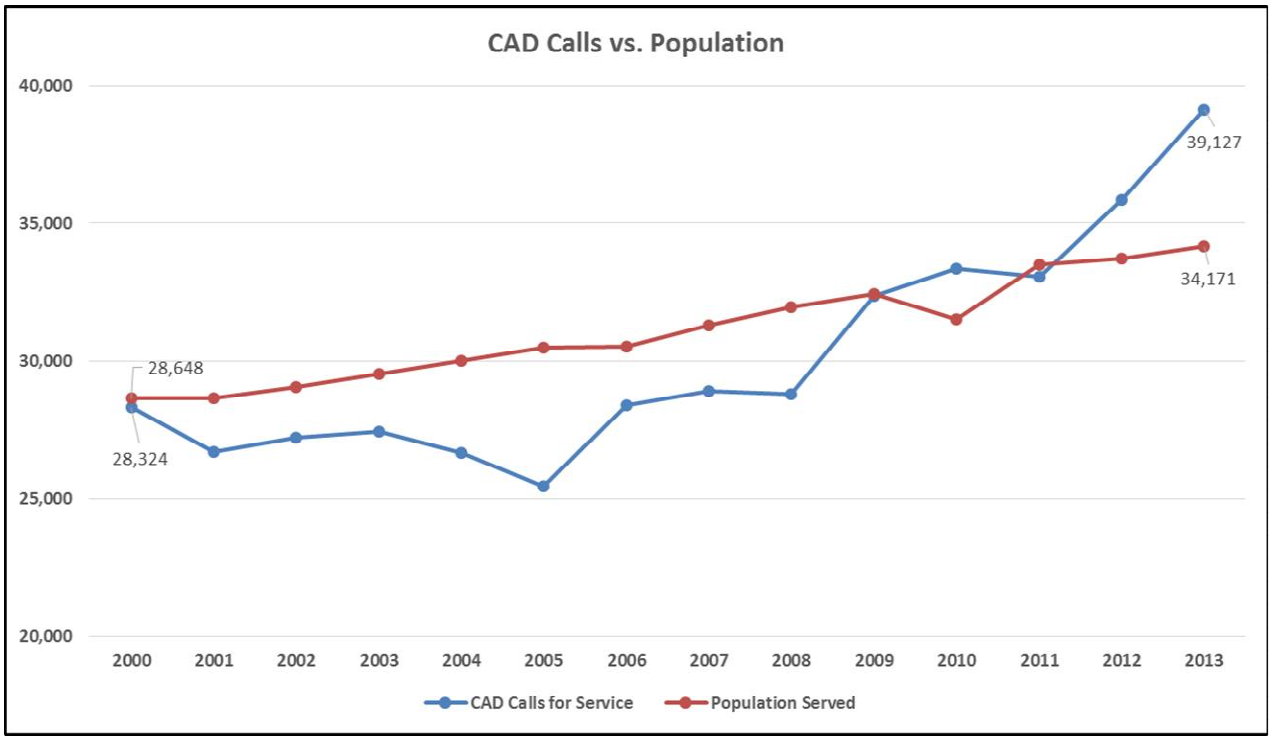
In 2003, the National Emergency Number Association (NENA) employed a consultant to create models for funding and staffing communications centers. NENA is a professional organization focused on 9-1-1 policy, technology, operations and educational issues. NENA sets operational standards for the 9-1-1 profession.

Kimball & Associates performed the study to develop staffing and budget for agencies implementing Enhanced 9-1-1 services for primary PSAPs serving populations of fewer than 140,000. The methodology included the Rational Approach (theory to data source) and The Empirical Approach (observation). While the report met the minimum requirements of the contract, the limited number of completed surveys caused a modification of desired goals in that the influence of specific factors on call processing could not be validated to the degree intended by the study (Attachment 4).

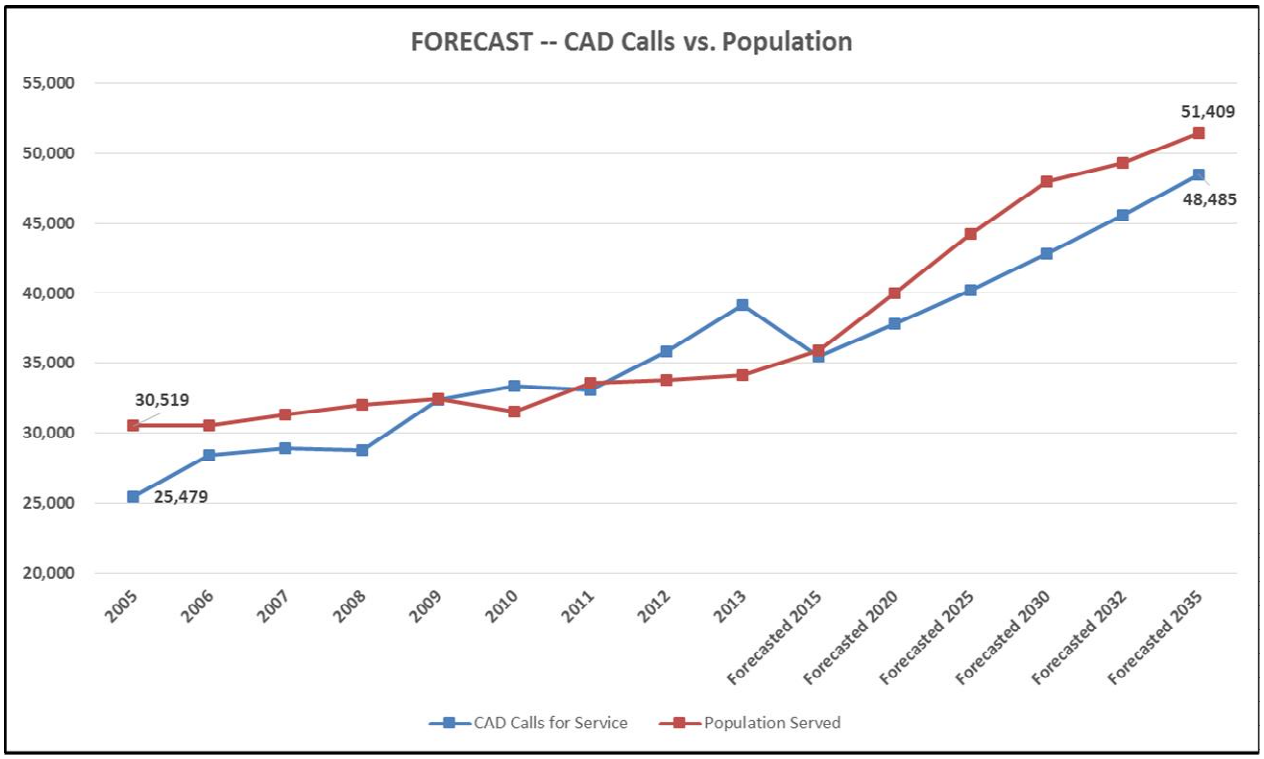
However, some general guidelines were collected from the report, supporting the request for additional staff. Findings from the Rational Approach concluded that "If call volume can be obtained, it provides a good approximation to the actual number of telecommunciators required" though a number was not identified (Kimball, Pg 35). The conclusion and recommendations from the Empirical Approach are reflected in Table 28 (Pg 58) of the report, stating 7 to 17 dispatchers are needed for medium sized PSAPS (19,000 – 100,000 population) based on population alone (Pg 58). This provides support for 12 dispatchers based on analysis through the Project Retains workbook. The full text of the Kimball & Associates report is located at:
http://www.nena.org/?page=psap_staffingguide&terms=staffing.

5. Take into consideration the increase or decrease in population:

The dispatch area for Newberg-Dundee Dispatch is approximately 100 square miles, covering the cities of Newberg and Dundee, and eastern rural Yamhill County. The Newberg Dundee Communications Center dispatch area has a steadily growing population.



Per Portland State University, Population Studies, the PSAP dispatch area is forecasted to grow at a moderate to strong pace through 2035. Assuming a 6.4% growth in CAD calls as per the historical data, an increase in workload is expected as the population continues to increase.



6. <u>A reasonable connection between those who need, use, or are likely to need or use the service, and those who are charged the fee</u>.

The group to be charged the PSF would be to those who occupy the developed property within the City of Newberg as determined by those responsible to pay for the utility services. Utility services provide a reasonably accurate method of determining which property is developed and which property is occupied. Currently, special districts do not pay the public safety fee.

Some users outside the City have an escalating cost contract that accounts for the current and forecasted need for services.

The City of Dundee pays for dispatch services through a contract with the City of Newberg. Resolution No. 2004-2539, provides that emergency communications services be adjusted by a percentage factor not to exceed five percent (5%) of the prior year's charge or such other sum as may be agreed to between the City

and Dundee. In fiscal year 2014, Dundee's cost for communication services is $40,721.

The Newberg Rural Fire District, which is funded through property taxes, funnels most of their property tax revenue to the City of Newberg, maintaining some for administrative costs. NRFD does not pay a distinct amount for 9-1-1 Communications.

7. The amount of revenue needed to support the resources to provide the services.

The amount of revenue needed to support the existing communications officer and provide an additional communications officer is recommended at $2.00 per RME per month. The amount of estimated revenues and expenditures to fund the positions are as follows:

Communication Officers (2):
The **estimated revenues and expenses** from the city's budget documents are as follows:

Communications

Budget (July-June) REVENUES	**Annual Budget based on $2/RME**
2014-15	$192,981
2015-16	$203,111
2016-17	$205,218
2017-18	$207,315

Communications

Budget (July-June) REVENUES	**Annual Budget based on $2/RME**	**Contingency**
2014-15	$169,376	$23,605
2015-16	$184,225	$18,886
2016-17	$188,892	$16,326

2017-18	$197,817	$9,498

(C) Any other Criteria:

Legal Authority – The City has adopted an ordinance allowing the PSF and creating a process to ensure public input. This is within the legal authority of the City.

Court Ruling – The legality of a PSF and the process for determining the group that is to be assessed the PSF has been reviewed by the Oregon courts in another similar situation. In that case, the City had enacted a "public safety surcharge" to be billed through the City water utility billing process. The City has used this situation as a model. The Supreme Court of Oregon ruled that the public safety surcharge was legal; the public safety surcharge is not a property tax; the City has the right to determine a class to charge; and that the class subject to the public safety surcharge was legally established by the City. [See Knapp v. City of Jacksonville, 342 Or. 268 (2007).]

CONCLUSION

The Newberg-Dundee Communications Center, a division of the Newberg-Dundee 9-1-1 Police Department, is in need of additional communications officers in order to maintain a safe and reliable level of staffing to deliver 9-1-1 answering and dispatch services. The city's population has grown, calls for service have increased, and the number of users of dispatch services has risen over the last decade. The last FTE was added in 2005.

It is the recommendation of the police chief and City administration that the City levy the Communications Officer Public Safety Fee (COPSF) in the amount of two (2) dollars per RME per month to raise the revenue to fund existing and additional communications officer positions. The City Budget Committee and the City Council have approved this request contingent on the revenue being available. The only method of obtaining the available revenue is through the COPSF. Code provisions allow for a COPSF to be imposed. The Council should impose the COPSF to continue to provide quality dispatch services to the community.

City of Newberg

2014-2015 Budget Public Safety Fee Proposal

Monthly Fee per Meter Equivalent $ 2.00 Supports 2 Dispatch Personnel

	2014-15 Proposed Year 1	2015-16 Projected Year 2	2016-17 Projected Year 3	2017-18 Projected Year 4
Annual Revenue	**$ 192,864**	**$ 202,900**	**$ 204,925**	**$ 206,975**
Interest Earnings	117.44	211.40	292.63	339.88
Total Revenues	$ 192,981	$ 203,111	$ 205,218	$ 207,315
Expenditures				
Officer Salaries	$ 86,548	$ 88,279	$ 90,045	$ 91,845
Overtime	12,000	12,360	12,731	13,113
Holiday Bank	5,000	5,100	5,202	5,306
FICA	7,922	8,528	9,180	9,883
W/Comp	477	491	506	521
Unemploy	829	854	879	906
PERS	19,016	28,835	29,445	34,182
PERS-Bond	3,417	3,485	3,555	3,626
Health Benefits	34,167	35,192	36,248	37,335
Personal Subtotal	$ 169,376	$ 183,125	$ 187,792	$ 196,717
Supplies	-	100	100	100
Training	-	1,000	1,000	1,000
Material & Services	$ -	$ 1,100	$ 1,100	$ 1,100
Total Expenditures	**$ 169,376**	**$ 184,225**	**$ 188,892**	**$ 197,817**
Fund Contingency	**$ 23,605**	**$ 42,492**	**$ 58,818**	**$ 68,316**

2014-15 CITY OF NEWBERG BUDGET

ADOPTED 2013-14	ESTIMATED ACTUAL	FTE	ACCOUNT #	DESCRIPTION	FTE	ADOPTED 2014-15
338,441	328,285	3.00	2120	TOTAL PATROL	3.00	337,815
			2310	COMMUNICATIONS		
-	-	-	16-2310-420000	Dispatch Salaries	2.00	85,908
-	-	-	16-2310-435000	Overtime	-	12,000
-	-	-	16-2310-435001	Holiday Bank	-	5,000
-	-	-	16-2310-440000	Misc Fringe Benefits	-	640
-	-	-	16-2310-441000	FICA/Medicare	-	7,922
-	-	-	16-2310-442000	Workers Compensation	-	477
-	-	-	16-2310-443000	Unemployment	-	829
-	-	-	16-2310-444000	Retirement-PERS	-	19,016
-	-	-	16-2310-444002	Retirement-Pension Bond	-	3,417
-	-	-	16-2310-445000	Health/Life/LTD	-	34,167
-	-	-		Total Personnel Services	2.00	169,376
-	-	-	2310	TOTAL COMMUNICATIONS	2.00	169,376
			9180	RESERVES		
140,112	-	-	16-9180-800000	Contingency	-	181,485
140,112	-	-	9180	TOTAL RESERVES	-	181,485
478,553	328,285	3.00	FUND 16	TOTAL PUBLIC SAFETY FUND	5.00	688,676
-	156,030			ENDING FUND BALANCE		-

RESOLUTION NO. 2014-3145

A RESOLUTION ADOPTING THE CITY OF NEWBERG, OREGON BUDGET FOR THE 2014-2015 FISCAL YEAR, MAKING APPROPRIATIONS, LEVYING A PROPERTY TAX, AND APPROVING THE CITY OF NEWBERG'S PARTICIPATION IN THE STATE REVENUE SHARING PROGRAM

RECITALS:

1. Starting April 29, 2014, and ending May 27, 2014, the city budget committee met and reviewed the city manager pro tem's proposed 2014-2015 city budget.

2. The city of Newberg provides seven of the seven municipal services enumerated in ORS 221.760.

3. The city budget committee and city council held public hearings on the uses of state revenue sharing funds pursuant to ORS 221.770 and on the proposed budget.

THE CITY OF NEWBERG RESOLVES AS FOLLOWS:

1. Pursuant to ORS 221.770, the city of Newberg elects to participate in the State Revenue Sharing Program for the fiscal year beginning July 1, 2014 and ending June 30, 2015 by allocating the funds received on a 50/50 percent basis to Police and Fire. The city finance director is directed to file a certified copy of this resolution with the state of Oregon Department of Administrative Services, prior to July 31, 2014.

2. The city council adopts the city of Newberg budget for the fiscal year beginning July 1, 2014, and ending June 30, 2015, as approved by the city budget committee and as adjusted by the city council, in the aggregate amount of $86,960,251.00.

3. That the amounts for the fiscal year beginning July 1, 2014, and for the purposes shown below are hereby appropriated:

General Fund		
	General Government	543,314.00
	Municipal Court	364,698.00
	Police	5,682,181.00
	Fire	3,354,089.00
	Communications	1,041,640.00
	Library	1,182,802.00
	Planning	586,154.00
	Transfers	39,068.00
	Contingency	752,042.00
	Total General Fund	13,545,988.00
Street Fund		
	Public Works	1,026,666.00
	Transfers	198,053.00
	Contingency	764,172.00
	Total Street Fund	1,988,891.00
Civil Forfeiture Fund		
	Police	5,045.00
	Total Civil Forfeiture Fund	5,045.00
Capital Projects Fund		
	Capital Projects	4,705,000.00
	Total Capital Projects Fund	4,705,000.00
Emergency Medical Services Fund		
	Fire	1,829,741.00
	Contingency	289,325.00
	Total Emergency Medical Services Fund	2,119,066.00
Wastewater Fund		
	Public Works	4,515,867.00
	Debt Service	1,405,088.00
	Transfers	1,000,000.00
	Contingency	4,298,214.00
	Total Wastewater Fund	11,219,169.00

Water Fund		
Public Works		3,075,652.00
Debt Service		409,082.00
Transfers		1,443,852.00
Contingency		2,704,575.00
	Total Water Fund	7,633,161.00
Building Inspection Fund		
Building Inspection		427,956.00
Contingency		253,527.00
	Total Building Inspection Fund	681,483.00
Debt Service Fund		
Debt Service		889,332.00
	Total Debt Service Fund	889,332.00
City Hall Fund		
Transfers		108,342.00
	Total City Hall Fund	108,342.00
9-1-1 Emergency Fund		
Communications		223,409.00
Contingency		30,481.00
	Total 9-1-1 Emergency Fund	253,890.00
Economic Development Fund		
Planning		512,559.00
Transfers		1,870.00
Contingency		281,894.00
	Total Economic Development Fund	796,323.00
Public Safety Fee Fund		
Police		337,815.00
Communications		169,376.00
Contingency		181,485.00
	Total Public Safety Fee Fund	688,676.00
Stormwater Fund		
Public Works		986,113.00
Transfer		50,000.00
Contingency		297,757.00
	Total Stormwater Fund	1,333,870.00

Street Capital Projects Fund		
	Capital Projects	1,180,000.00
	Contingency	158,493.00
	Total Street Capital Projects Fund	1,338,493.00
Library Gift & Memorial Fund		
	Library	135,500.00
	Contingency	23,662.00
	Total Library Gift & Memorial Fund	159,162.00
Cable TV Trust Fund		
	General Government	15,000.00
	Contingency	12,045.00
	Total Cable TV Trust Fund	27,045.00
Wastewater CIP Reserve Fund		
	Public Works	-
	Transfers	1,468,500.00
	Total Wastewater Replacement Fund	1,468,500.00
Water CIP Reserve Fund		
	Public Works	-
	Transfers	707,500.00
	Total Water Replacement Fund	707,500.00
Stormwater Replacement Fund		
	Public Works	
	Transfers	217,500.00
	Total Stormwater Replacement Fund	217,500.00
Admin / Support Services Fund		
	City Manager's Office	584,326.00
	Finance	807,525.00
	General Office	155,000.00
	Information Technology	882,357.00
	Legal	431,011.00
	Public Works	512,413.00
	Insurance	295,000.00
	Transfers	500,000.00
	Contingency	200,823.00
	Total Admin / Support Services Fund	4,368,455.00

Vehicles / Equipment Replacement Fund		
	Information Technology	384,172.00
	Police	123,017.00
	Fire	543,111.00
	Communications	15,000.00
	Planning	11,548.00
	Public Works	175,051.00
	Facilities Repair / Maintenance	75,000.00
	Contingency	1,049,275.00
	Total Vehicle / Equipment Replacement Fund	2,376,174.00
Fire & EMS Equipment Fee Fund		
	Capital Outlay	23,179.00
	Contingency	218,192.00
	Total Fire & EMS Equipment Fee Fund	241,371.00
Wastewater Financed CIP's Fund		
	Capital Projects	21,088,728.00
	Total Wastewater Financed CIPs Fund	21,088,728.00
Street System Development Fund		
	Transfers	1,005,000.00
	Contingency	1,964,554.00
	Total Street System Development Fund	2,969,554.00
Stormwater System Development Fund		
	Transfers	102,500.00
	Contingency	131,222.00
	Total Stormwater System Development Fund	233,722.00
Wastewater System Development Fund		
	Debt Service	283,279.00
	Transfers	1,396,500.00
	Contingency	2,231,442.00
	Total Wastewater System Development Fund	3,911,221.00
Water System Development Fund		
	Debt Service	843,852.00
	Transfers	1,037,500.00
	Contingency	3,238.00
	Total Water System Development Fund	1,884,590.00
	Total Appropriated Budget	**86,960,251.00**

Unappropriated Fund Balance - General Fund	1,100,000.00
Unappropriated Fund Balance - Debt Service	200,684.00
Unappropriated Fund Balance - City Hall Fund	527,095.00
Reserves	10,330,478.00
Total Budget	**99,118,508.00**

5. The city council of the city of Newberg imposes the taxes provided for in the adopted budget at the rate of $4.3827 per $1,000.00 of assessed value for general operating purposes and $425,000.00 for Debt Service, and that these taxes are hereby imposed and categorized for the tax year 2014-2015 upon the assessed value of all taxable property within the City.

	General Government Limitation	Excluded from the Limitation
General Fund	$4.3827 per $1,000.00 AV	
Debt Service Fund		$425,000.00

6. The finance director is authorized and directed to certify the levy with the Yamhill county assessor and Yamhill county clerk.

➢ **EFFECTIVE DATE** of this resolution is the day after the adoption date, which is June 17, 2014.

ADOPTED by the City Council of the City of Newberg, Oregon, this 16th day of June, 2014.

Norma I. Alley

Norma I. Alley, MMC, City Recorder

ATTEST by the Mayor this 19th day of June, 2014.

Bob Andrews, Mayor

Prepared by: Gordon Tiemeyer, Oregon Emergency Management, 9-1-1 PSAP Relations Analyst
Graph: Call taking for the 3 W/S PSAPs. It shows a breakdown per month for 9-1-1 calls only for the past full 12 months, followed by ADMIN calls. It also shows the breakdown between Dispatchers and Admin.
NOTE: Call data is from ECATS

9-1-1 CALLS ONLY BY MONTH, LAST 12 MONTHS

PSAP (3 W/S)	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	TOTAL	# W/S	Call per W/S	Dispatch	Admin	FTE	Agencies served	TOTAL ADMIN inbound & outbound
Baker County	618	640	829	533	456	398	449	472	422	454	462	589	**6,322**	3	***2,107***	7.00	1.00	8.00	27	55,626
Coos Bay PD	849	845	1,001	848	810	806	882	752	806	964	980	1,038	**10,581**	3	***3,527***	10.00		10.00	3	73,777
Lincoln City	572	681	648	535	484	443	493	453	427	532	627	601	**6,496**	3	***2,165***	8.00	2.00	10.00	2	1,863
Malheur County	492	553	532	480	322	338	381	431	349	719	791	948	**6,336**	3	***2,112***	6.00	2.00	8.00	4	56,238
Newberg	795	780	806	772	709	664	789	635	614	725	693	782	**8,764**	3	***2,921***	9.00	0.50	9.50	5	59,429
Ontario PD	497	520	495	499	466	402	437	454	382				**4,152**	3	***1,384***	5.00		5.00	3	37,153
Prineville	647	797	684	685	573	483	550	528	494	501	503	641	**7,086**	3	***2,362***	7.00	2.33	9.33	6	32,677
Tillamook	1,140	1,345	1,282	1,334	1,075	929	912	1,073	958	1,053	1,123	1,183	**13,407**	3	***4,469***	8.00	3.00	11.00	12	59,754
Union	673	752	836	674	670	580	703	661	587	641	701	760	**8,238**	3	***2,746***	10.00	1.00	11.00	22	50,867
W. Lane	606	820	830	661	637	548	563	625	546	616	596	721	**7,769**	3	***2,590***	7.00	0.30	7.30	9	2,552

Ontario PD ceased 9-1-1 call taking (March 2014) in preparation for consolidation with Malheur County scheduled for June 30, 2014. Malheur County has requested no additional workstations.

REVIEW OF 9-1-1 DISPATCH SERVICES

for the

CITY OF NEWBERG, OREGON

and

NORCOM

for the

CONSOLIDATION OF SERVICES

November 6, 1998

PREPARED BY

J. N. HARTSOCK PROJECT MANAGEMENT

12042 SE Sunnyside Road
Suite 561
Clackamas, Oregon 97015
(503) 780-4806 Fax (503) 658-3395
Email: jnhartsock@AOL.com

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SECTION 5: PERSONNEL EQUIVALENCY FACTOR

5.1 Position Work Hours

The projected number of full time equivalent (FTE) personnel is determined based on a factor utilizing accrued leave time and the shift hours and days off that personnel work. Lunch and break time is calculated as time away from a position as well as sick leave, vacation leave, etc.

This factor was applied for Newberg and NORCOM. Information regarding accrued leave was provided by the agencies. The estimated annual accrued leave and other time off is detailed as follows:

	Newberg	NORCOM
Vacation leave	80 hours	96 hours
Holiday leave	96 hours	96 hours
Sick Leave	96 hours	96 hours
Training Hours	24 hours	24 hours

For Newberg an employee working the 8 hour shift of 5 days on, 2 days off, works an estimated 2080 hours, less the average leave time detailed above, and less lunch and break time of 1 hour per shift away from the console positions. This factoring indicates that the average employee will work at a position a projected 1561 hours on an annual basis.

To staff one position, 24 hours per day, 7 days per week, requires coverage for 8,760 hours. The following FTE requirements were determined for Newberg for staffing a position 24 hours per day, 7 days per week:

5.6 FTE (to staff a position 24 hours per day, 7 days per week)

For NORCOM an employee working the 8 hour shift of 5 days on, 2 days off, works an estimated 2080 hours, less the average leave time detailed above, and less lunch time of ½ hr per shift away from the console positions. Break time is calculated at 30 minutes per shift. This factoring indicates that the average employee will work at a position a projected 1547 hours on an annual basis.

The following FTE requirements were determined for NORCOM for staffing a position 24 hours per day, 7 days per week:

5.7 FTE (to staff a position 24 hours per day, 7 days per week)

These calculations are based on utilizing the average accrued leave time for an employee not the average leave time that an employee uses during the average

year. The average accrued leave time is used for recommended staffing levels due to the fact that the accrued employee leave time is a liability to the agency, and if employees exercise their leave time, critical staffing problems affecting performance standards could occur.

5.2 FTE Requirements

Based on the personnel equivalency factor and the average hour position staffing requirements, the recommended FTE requirement for communication/dispatch personnel for Newberg Communications is 8 FTE. This FTE requirement is made utilizing the actual accrued annual leave time as provided by the agency. Newberg requires dispatch personnel to complete records processing. These additional tasks have not been used in determining the FTE staffing requirements. Only communications functions, call taking and radio dispatching have been calculated for the average hour staffing needs.

The recommended FTE requirement for communication/dispatch personnel for NORCOM is 14 FTE. This FTE requirement is also made utilizing the actual accrued annual leave time as provided by the agency.

The details of the workload analysis can be found in the Appendix A.

5.3 Calculated FTE Requirements Versus Actual

The following table indicates the actual authorized dispatcher staffing for Newberg and NORCOM and the recommended staffing based on the average hour workload.

	NEWBERG	NORCOM
Authorized FTE (Full Time)	8	8 (incudes supervisors)
Part Time	- -	I (2 part time)
Recommended FTE Staffing	8	14
Difference	***0***	***- 5***

Newberg is authorized a total of 8 full time dispatch employees with 1 management position. The recommended staffing level based on the average hour staffing analysis is 8 FTE. Newberg current staffing level is adequate based on the workload staffing analysis.

NORCOM on the other hand, is authorized a total of 6 full time, 2 part time, 2 supervisory and 4 on call dispatch employees with 1 management position. The recommended staffing level based on the average hour staffing analysis is 14

FTE, which is a staffing shortfall of 5 FTE. The two supervisory positions were added to the dispatch staff for purposes of FTE staffing. The part time personnel were estimated at an equivalency factor of 1 FTE. On Call were not calculated in the FTE authorized staffing.

It is important to note that the model assumes fully trained FTE positions. Training positions are not accounted for in this analysis. Depending on turnover, it is necessary to add some number of additional positions to accommodate the average number of staff typically in training.

The staffing analysis for average hour recommends staffing of 1.4 positions staffed for Newberg, and 2.5 positions for NORCOM. Applying the traditional distribution of call arrivals to reflect the typical day shift message volume as the average hour, the evening shift can be expected to be approximately 17% higher than this value, and the early morning shift can be expected to be about 33% less than this value. The following table reflects a sample of the average hour staffing on a shift-by-shift basis.

POSITION STAFFING

SHIFT	DAYS Average Hour	EVENING Increase 17-20%	NIGHTS Decrease 33%
NEWBERG	1.4 (1)	1.63 (2)	0.9 (1)
NORCOM	2.5 (3)	3 (3)	1.8 (2)

This same approach may also be adjusted for certain days of the week, and certain hours of each shift. For example, statistical data that may be able to be collected by day of the week, may indicate that day shift activity on the weekends, may be lower than during the week. The same work activity may reflect higher workloads on evening shift for Friday and Saturday nights, therefore creating the need for increased staffing. Decreased staffing may be a possibility on certain nights that are identified by trend information to be slow work periods.

Actual staffing is, of course, also impacted by positions that need to be staffed regardless of how busy they may or may not be.

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SECTION 5: PERSONNEL EQUIVALENCY FACTOR

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5.7 FTE (to staff a position 24 hours per day, 7 days per week)

These calculations are based on utilizing the average accrued leave time for an employee not the average leave time that an employee uses during the average

SECTION 6: 8 YEAR PROJECTIONS (WORKLOAD AND STAFFING)

Once the average hour workload and staffing requirements are calculated, an 8-year projection of workload and FTE requirements over an 8 year period are projected for Newberg and NORCOM. Assumptions are made for the 8-year projection that no significant changes in operating practices will be made and that there is no change in current service level.

A projected growth factor of 2.75% per year is applied to the current workload data collected for each existing position for purposes of this study.

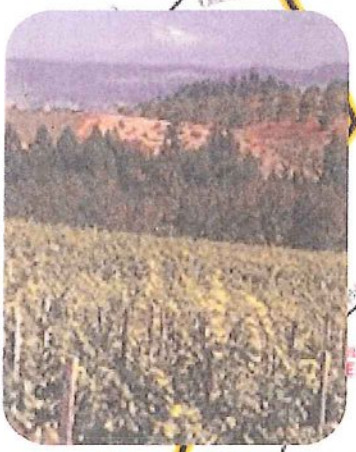
The following table reflects the projected workload based on current workload with a 2.75% growth increase in workload per year.

NEWBERG

	1998	1999	2000	2001	2002	2003	2004	2005	2006
TOTAL CALLS PER HOUR	6.7	6.9	7.1	7.3	7.5	7.7	7.9	8.1	8.4
POLICE RADIO TRANS-ACTIONS	12.0	12.3	12.7	13.0	13.4	13.7	14.1	14.5	14.9
FIRE/EMS INCIDENTS	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4
AVG. HR. POSITION STAFFING	1.4	1.4	1.5	1.5	1.6	1.6	1.6	1.6	1.6
TOTAL FTE	**8.0**	**8.1**	**8.2**	**8.2**	**8.8**	**8.9**	**8.9**	**9.0**	**9.1**

The growth factor utilized in this table reflects that over the next 8 years staffing may need to be increased by 1 position. It should be noted that this may not be a realistic forecast as the communications center may not be impacted at the 2.75% rate, however, this table does illustrate the fact, that as workload increases, staffing will need to be increased, or changes in how business is done today must be made.

Yamhill County Communications Agency
Dundee-Newberg 9-1-1 Communications Center
Options Analysis Study



Yamhill County

Winery Location

June 2000

Gaston
Yamhill
Carlton
McMinnville
Lafayette
Dayton
Dundee
Newberg
Chehalem
Willamette River
Amity
Bruck House
Adelsheim Vineyard
Autumn Wind Vineyard
Stag Hollow
Bella Pesta
Erath
Lange
Duck Pond Cellars
Tera Mor
Cameron
Argyle
Maresh Red Barn
Wine Country Farm Cellars
Archery Summit
Sokol Blosser
Domaine Drouhin
Chateau Benoit
Ken Wright Cellars
Carlo & Julian
Golden Valley Vineyards
Panther Creek
Kristin Hill Winery
Amity Vineyards
Cuneo Cellars
240
219
18
99W
233
221

Emergency Services Consulting Group
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Yamhill County
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SECTION 3: STAFFING

Communications Center workload activity and performance standards determine the required staffing levels for operation 24 hours a day, 7 days a week. The required staffing levels drive the determinants for the requirements of type and quantity of equipment, number of workstations, facility size, and administrative staff support.

Each of the agencies provided random data collected for telephone activity in order to complete the staffing recommendations. Both agencies provided annual incident data for Fire/Medical. Dundee-Newberg provided annual statistical data for law enforcement activities. Y-COM provided law enforcement reports from CAD. However it should be noted that reports provided were not communication center report mechanisms and were not complete.

For the purposes of completing the staffing analysis, the call answering performance standard of six (6) seconds was used. This is approximately two ring cycles. For purposes of determining time spent on the phone call-processing time of 90 seconds was used for Dundee-Newberg. This time is an average determined by comparisons of other communication center operations. Y-COM data, provided in random sampling, indicated an average processing time of 105.3 seconds.

The following section summarizes operational and administrative staffing requirements for each agency and for consideration of a consolidated option.

Appendix A details the statistical data collected and analytical charts for the staffing recommendations.

3.1 OPERATIONS STAFFING

Staffing requirements are based on existing workload for Yamhill County and the City of Newberg and provide staffing estimates for a consolidated operation option. The analysis provides data to determine the ***"Average Hour"*** staffing requirements based upon position activity. These staffing requirements provide the data for the number of positions for call taker, law enforcement dispatch and fire/medical dispatch. The analysis is *"Average Hour"*, and for purposes of staffing days, evenings, and early morning shifts, it is important to consider that there are peaks and valleys during each 24-hour period, and that each shift, or certain hours, may not have average hour staffing. Evening shifts may have added staffing in order to handle peak periods. Early morning shifts may have less staffing than the average hour due to slow periods. "Average hour" determines a baseline of operations. These variations are taken into the recommended position staffing as well as the total number of personnel required for each agency.

This staffing analysis does not address records processing functions that are completed by Newberg personnel. Records processing functions require the addition of staff. Newberg police estimate that records processing would require the addition of one FTE, if not completed by communications personnel.

3.1.1 CALL WORKLOAD

Workload statistical data was gathered from each agency for the purposes of completing the detailed staffing analysis. The following table summarizes the average hour workload data for each agency.

ACTIVITY "Average Hour"	Y-COM	NEWBERG	COMBINED
Telephone Activity (Total Incoming Calls)	15.2	7.6	22.8
9-1-1	*3.4*	*.8*	*4.2*
7-DIGIT	*11.8*	*6.8*	*18.6*
Law Enforcement Incidents	7	1.5	8.5
Law Enforcement Radio Transactions	90.5	45.0	135.5
Fire/Medical Incidents	.7	.3	1.0
Fire/Medical Radio Transactions	6.2	2.9	9.1

3.1.2 POSITION STAFFING REQUIREMENTS (AVERAGE HOUR)

The following table illustrates the number of positions required for each activity and the projected communications center staffing for average hour based on the detailed analysis. It should be noted that these requirements assume that positions will multi-task, e.g. radio dispatchers will be required to answer incoming calls or a call taker may be required to assist with radio functions.

POSITION REQUIREMENTS	Y-COM	NEWBERG	COMBINED
Call Taking	1.6	1.1	2
Law Enforcement Dispatch	1.1	.4	1.5
Fire/Medical Dispatch	.4	.2	.6
Total *Average Hour* Position Requirements	**3.1**	**1.7**	**4.1**

Applying the traditional distribution of call arrivals to reflect the typical day shift message volume as the "average hour" the evening shift can be expected to be approximately 20% higher than this value, and the early morning shift can be expected to be about 33% less than this value. The following table reflects a **sample** of the average hour staffing on a shift-by-shift basis for current activity.

SHIFT	Y-COM	NEWBERG	COMBINED
Average Hour	**3**	**2**	**4**
Days	*3*	*2*	*4*
Swing	*4*	*2*	*5*
Nights	*3*	*1*	*3*

This same approach may also be adjusted for certain days of the week, and certain hours of each shift. Actual staffing is, of course, impacted by positions that need to be staffed regardless of how busy they may or may not be.

3.1.3 TOTAL DISPATCH PERSONNEL REQUIREMENTS

The projected number of full time equivalent (FTE) personnel for the communications center operations is determined based on a factor utilizing average use of leave time and the shift hours and days off that personnel work. Lunch and break time is calculated as time away from a position as well as sick leave, vacation leave, etc. Once the staffing requirement for positions is determined based on the workload, the total number of personnel that will be required to staff the positions is calculated.

In order to staff one position 24 hours per day, 7 days per week, Y-COM and Dundee-Newberg require 5.5 FTE to staff one position. 5.5 FTE was used for purposes of estimating a consolidated operation. The following table illustrates the recommended FTE staffing requirements for each agency and for the consolidated option.

POSITION & FTE REQUIREMENTS	Y-COM	NEWBERG*	COMBINED
Total Average Hour Position Requirements	3.1	1.7	4.1
FTE REQUIREMENTS	17.2	9.5	22.9

*Note: Newberg FTE requirements are communications related only, records functions are not included.

3.1.4 STAFFING OPTION WITH DATA COMMUNICATIONS

The full implementation of Mobile Data Communications for Law Enforcement units can impact the staffing requirement for the law enforcement dispatch positions. It is estimated, based upon utilization of a data system that radio transactions between the field units and dispatch personnel can be reduced up to approximately 40%. This is assuming that a full integration has occurred to a computer aided dispatch system, with appropriate interfaces to the Law Enforcement Data System, NCIC, and other related records systems as deemed necessary for the data communications system.

Assuming that a fully integrated data communications system is operating, radio transaction information has been reduced 25% to reflect a conservative use of the data system as it relates to the law enforcement units.

The following table compares the position staffing requirements for current operations, with the estimated position staffing requirements utilizing data communications for law enforcement.

CURRENT POSITIONS & FTE REQUIREMENTS	Y-COM	NEWBERG	COMBINED
Total Average Hour Position Requirements	3.1	1.7	4.1
FTE REQUIREMENTS	17.2	9.5	22.9
DATA COMMUNICATIONS OPTION POSITION/FTE REQUIREMENTS	Y-COM	NEWBERG	COMBINED
Total Average Hour Position Requirements	2.9	.3	3.8
FTE REQUIREMENTS	15.7	8.9	20.8

As shown in this table the implementation of data devices for the utilization by law enforcement personnel does have a positive impact on dispatch operations. However it should be noted that there are times when data systems may not be available, and voice communications are necessary which has an impact on staffing requirements. The implementation of data should not be used to reduce dispatch staff, but to stabilize the need for growth (the addition of personnel) in the future.

3.1.5 CURRENT STAFFING LEVELS

Y-COM is currently authorized a staffing level (Dispatchers) of 13 Dispatchers and has one (1) part-time position. Three (3) of the authorized 13 positions are shift supervisors, however are working dispatchers. Y-COM staffs with 2 positions on duty at all time. The staffing analysis based on workload indicates that Y-COM currently has a staffing shortfall of 4 (4.2) full time employees (FTEs). Shift staffing projections indicates that Y-COM should have 3 positions staffed during average hour, with an increase to 4 positions during peak workload periods.

Dundee-Newberg is currently authorized a staffing level (Dispatchers) of 8 Dispatchers. Utilizing the Manager position and by creative scheduling, Dundee-Newberg generally fields a staffing of 2 positions at all times. The staffing analysis based on workload indicates that Newberg has a staffing shortfall of 2 (1.5) full time positions. The shortfall does not include the FTE that would be needed for records processing. Newberg staff states that 1 FTE is necessary for the records functions. Utilizing this information, and reviewing staffing requirements, it appears that Newberg has a staffing shortfall of 3(2.5) full time positions.

3.1.6 CONSOLIDATED STAFFING

In determining the staffing level of a consolidated operation, combining of workload data from Y-COM and Dundee-Newberg indicates a required staffing level for a consolidated option of 23 dispatch positions, with an average hour staffing level of 4 positions. This does not include any records positions.

If both agencies were currently staffed at the recommended staffing level, Y-COM would have 17 FTE and Dundee-Newberg would have 10 FTE. This is a combined total of 27 FTE. The consolidated option requires 23 FTE positions. This is an overall reduction of 4 full time positions. However due to the staffing shortfall of Y-COM and Dundee-Newberg based on this staffing analysis, a consolidated option would require the addition of two full time dispatch employees. Utilizing this analysis, the results of a consolidation would not require deletions of existing positions. Records processing for Newberg is not included in the data detailed above.

3.1.7 5 YEAR PROJECTED STAFFING

In order to complete a 5-year projection of staffing requirements, assumptions are made that no significant changes in operating practices will be made and that there is no change in assumed performance standards. A projected growth factor of 3% per year is applied to the current workload data collected for each position for purposes of the 5-year projects.

The following table reflected the FTE requirements over the next 5-years for Y-COM, Dundee-Newberg, and a consolidated option.

FTE Requirements

	Current	2001	2002	2003	2004	2005
Y-COM	17	18	18	19	19	19
NEWBERG	10	10	10	10	10	10
CONSOLIDATED	23	23	24	24	24	25

In the next 5 years Y-COM is projected to add 2 additional FTE. Dundee-Newberg will remain constant over the next 5-year period. The consolidated option will require the addition of 2 FTE over the next 5 years if workload increases as projected and no change in operating standards is initiated.

It should be noted that the staffing levels of the two individual agencies are a total of 29 FTE positions at the end of the 5-year period. The consolidated option indicates 25 FTE, which is an overall reduction of 4 FTE positions.

The consideration of the stabilization in staffing with the implementation of data devices can best be seen when addressing the 5-year FTE requirements. The assumption is made that if an MDC system were fully implemented within the same five-year period, additional FTE would not have to be added.

3.2 ADMINISTRATIVE STAFFING

Y-COM currently has three working supervisory positions for dispatch operations, and when a supervisor is not available a senior dispatcher is utilized as fill-in. It appears that span of control is adequate for the number of positions on each shift.

Dundee-Newberg does not operate with supervisors on a shift. There is one manager who oversees the operation of the dispatch center. As noted in the section overview this management position is often required to work a dispatch position because of staffing levels creating an inadequacy in the upper management function. The span of control for Dundee-Newberg appears to be impaired due to staffing issues and the size of the total staff for a 24-hour operation.

3.3 OBSERVATIONS AND ANALYSIS

The agencies do not currently have performance standards that have been developed with their member agencies. Employees are not aware of the need for performance measures.

Reports are not done routinely by management to present to user agencies on a routine basis, indicating call volume and workload. Data should be easily available to prepare 9-1-1 call volume; cellular 9-1-1 calls, 7 digit calls, and Calls for Service for both police and fire.

In order to perform the analysis for staffing requirements statistical data was requested from both agencies. Through the collection of the workload data the following assessments were made:

- No standardized monthly telephone report exists for either agency detailing number of 9-1-1 calls, 9-1-1 cellular, or 7-digit incoming.

- Agency Performance Standards were not available from the agencies for:
  -Average call processing time
  -Average speed of answer
  -Dispatch handling time for high priority (emergency) calls

- A Communication Center report detailing month-by-month Calls for Service for Police, Fire, & EMS, and officer activities for each communication center could not be provided by the agencies.

Based on current workload data, both agencies do not have adequate staffing. The staffing shortfall at Y-COM is the reason that employees are unable to get time off and overtime is considered "routine". Y-COM's staffing shortfall reflects a shortage of one position on each shift (i.e., 5 FTE positions). Dundee-Newberg's staffing shortage is a shortfall of 2 FTE positions. The Manager for Dundee-Newberg routinely works a dispatch position. Staffing adequately would modify the need for the manager to work a position.

Both agencies are at risk in the event of a large incident, which may generate high call volume and/or radio traffic from field personnel, or the handling of multiple incidents. This risk generated by the shortfall in staffing could result in unanswered emergency calls, or the inability to handle the radio traffic of the public safety providers. These situations could affect delivery of service to the citizens and the personal safety of the public safety providers.

It should be noted that the addition of Mobile Data Communications devices may assist with a staffing shortfall and not as many FTE's would need to be added, however, call data would have to be reviewed on a routine basis to assure staffing projections and usage estimates were correct.

Recommendation

- Each agency should develop Performance Standards defining user expectations.
- Each agency should develop a method to collect necessary statistical data.
- Each agency should develop a monthly report of agency workload to present to user agencies, defining performance, and support staffing requirements.
- A staffing plan should be addressed by each agency to assure that adequate staffing is maintained by the agency and that staffing meets the agency performance standards. For Dundee-Newberg, the staffing plan should also address the issue of the manager routinely working a dispatch position and the need to assure that there is adequate staff for the reported requirements of 1 FTE for records processing functions.
- A long-term plan should be developed outlining the implementation of MDCs to coincide with a staffing plan.

Newberg
5 yr. Projected Workload and Staffing

6 second call answering time

CALL TAKER STAFFING REQUIREMENTS	CURRENT	2001	2002	2003	2004	2005
Avg. # of total calls per hour	7.6	7.8	8.0	8.3	8.5	8.8
Twc: Average wait time in seconds	6.0	6.0	6.0	6.0	6.0	6.0
Nc: (Calls per second)	0.002	0.002	0.002	0.002	0.002	0.002
Tsc: (Seconds to process call)	90.0	90.0	90.0	90.0	90.0	90.0
Units of Workload (Nc x Tsc)	0.2	0.2	0.2	0.2	0.2	0.2
Units of Delay (Twc/Tsc)	0.1	0.1	0.1	0.1	0.1	0.1
Call Taker Positions	2	2	2	2	2	2
Adjusted Positions	1.1	1.1	1.1	1.1	1.1	1.1

LAW ENFORCEMENT RADIO CHANNEL UTILIZATION						
# Radio Transactions per hour	45.0	46.4	47.7	49.2	50.6	52.2
Nt: number of transactions per second	0.013	0.013	0.013	0.014	0.014	0.014
Tsd: Avg. time to process transaction	13.19	13.09	13.09	13.09	13.09	13.09
Channel Utilization: U = Nt x Tsd	0.16	0.17	0.17	0.18	0.18	0.19
Average Wait Time/Seconds	2.60	2.65	2.75	2.85	2.95	3.06
% of Channel Capacity Utilized	41%	42%	43%	45%	46%	47%
Channels Required	1	1	1	1	1	1
Adjusted Channels Required	0.4	0.4	0.4	0.4	0.5	0.5

FIRE/MEDICAL INCIDENTS						
Average hour / Incidents per hour	0.3	0.3	0.3	0.3	0.4	0.4
Estimated number of radio transactions per incident	9.1	9.1	9.1	9.1	9.1	9.1
# Radio Transmissions per hour, based on the average hour incident activity	2.9	3.0	3.1	3.2	3.3	3.4
Nt: number of transmissions per second	0.001	0.001	0.001	0.001	0.001	0.001
Tsd: Avg. time to process transmission	100.97	100.97	100.97	100.97	100.97	100.97
Channel Utilization: U = Nt x Tsd	0.08	0.08	0.09	0.09	0.09	0.09
Average Wait Time/Seconds	8.93	9.22	9.53	9.84	10.16	10.50
% of Channel Capacity Utilized	20%	21%	22%	22%	23%	24%
Channels Required	1	1	1	1	1	1
Adjusted Channels Required	0.2	0.2	0.2	0.2	0.2	0.2

AVERAGE HOUR STAFFING REQUIREMENTS						
ADJUSTED CALL TAKER POSITIONS	1.10	1.10	1.10	1.10	1.10	1.10
ADJUSTED POLICE DISPATCH POSITIONS	0.41	0.42	0.43	0.45	0.46	0.47
FIRE/MEDICAL DISPATCH POSITIONS	0.20	0.21	0.22	0.22	0.23	0.24
TOTAL ADJUSTED POSITIONS	1.72	1.73	1.75	1.77	1.79	1.81
TOTAL FTE REQUIRED	9.7	9.8	9.9	10.0	10.1	10.2

Worksheet A: Net Available Work Hours

w/o Denise & Kevin

Worksheet for Net Available Work Hours (NAWH)		
Position:		
A	2080	Total hours for one full time employee
B	59	Average vacation and holiday leave (total hours)
C	47.8	Average sick leave (total hours)
D	81.9	Average personal leave (total hours)
E	12	Average training leave (total hours)
F	—	Average military, FMLA leave, etc. (total hours)
G	222.35	Average lunch and break (total hours)
H	—	Average other (meetings, light duty, special assignments, etc.)
I	423.05	Total unavailable time = Total B through H
J	1656.95	Net Available Work Hours (NAWH) = A – I
1656.95		= Net Available Work Hours per employee (NAWH from J above)

Worksheet B: Calculating Average Turnover Rate

Calculating Average Turnover Rate		Year					Average
		20 06	20 07	20 08	20 09	20 __	
A	Total number of employees at the highest staffing level for that year	10	10	8	7		8.75
B	Number of new hires that failed to complete the probationary period	0	1	1	0		1.5
C	Number of experienced employees who left for any reason*	0	3	2	0		1.25
D	Turnover Rate (Turnover = B + C ÷ A)	0	.4	.38	0		.20
E	Retention Rate (Retention = 1 – Turnover) x 100	100	60	62	100		80.5

*Include all experienced employees who left for voluntary or involuntary reasons (e.g. turnover initiated by the employee, rotation, retirement, death, management action, etc.)

Worksheet C: Calculation For Coverage Positions

Worksheet for Estimating Staffing for Coverage Positions	
Note: Coverage positions must be covered regardless of call volume or level of activity.	
Position:	
Hours needing coverage:	
A. 2	Total number of consoles that need to be covered for this position
B. 24	Number of hours per day that need to be covered
C. 7	Number of days per week that need to be covered
D. 52	Number of weeks per year that need to be covered
E. 17,472	Total Hours needing coverage = A x B x C x D
Employee Availability:	
F. 1650.95	Net Available Work Hours - enter average NAWH from worksheet
Staff Needed:	
G. 10.5	Full Time Equivalent base estimate (FTE) = E ÷ F
H. .20	Turnover Rate - from retention worksheet, convert to decimal
I. 12.6	Full Time Equivalent required to accommodate turnover, prior to any adjustments based on quality indicators: FTE = G x (1+ H)
12.6 = Estimated Staffing Need (in FTEs from Step I above)	
FTE = Hours needing coverage ÷ Employee Availability x Turnover Adjustment	

Worksheet D: Calculation Of Hourly Processing Capability

Worksheet for Calculation of Hourly Processing Capability	
A. 1.7 minutes	Average telephone busy time (call duration in minutes, using decimals), from phone records
B. 1.8 minutes	Average call completion time (in minutes, this includes time for data entry, address verification, etc.)*
C. 3.5 minutes	Average Processing Time (APT) = A + B
D. 17.1 calls hourly	Average Hourly Processing Capability (HPC) = 60 ÷ APT)

** Your telephone software may be able to provide detailed information about telephone busy time, but you will have to use other means to determine average wrap-up time.*

Worksheet E: Calculation for Volumn-influenced Positions

Worksheet for Estimating Staffing for Volume-influenced Positions	
Note: The number of Volume-influenced positions is based on call volume or activity level.	
Position:	
Workload:	
A. _____ calls	Total Call Volume for this position (TCV), from phone records
B. ____ minutes per call	Average Processing Time for this position (APT), from phone records
C. _____ calls hourly	Hourly Processing Capability (HPC) = 60 ÷ B
D. _____ call hours	Workload in hours (W) = A ÷ C
Employee Availability:	
E. _____	Net Available Work Hours - enter average NAWH from worksheet
F. _____	Agent Occupancy rate - enter AO, convert percent to decimal
G. _____	True Availability per person (TA) = E x F
Staff Needed:	
H. _____	Full Time Equivalent base estimate (FTE) = D ÷ G
I. _____	Turnover Rate from retention worksheet - convert to decimal
J. _____	Full Time Equivalent required to accommodate turnover, prior to any adjustments based on quality indicators: FTE = H x (1 + I)
_____	= Estimated Staffing Need (in FTEs from Step J above)
FTE = Workload ÷ Employee Availability x Turnover Adjustment	

Worksheet F: Comparison and Summary of Staffing Estimates

Comparing Current Staffing with Estimated Staffing Needs			
WORK	Total Call Volume: 320,174 Total Emergency Calls: 46,174 Average Processing Time: 3.5 Hourly Processing Capability: 17.1	Current Staffing	Estimated Need
WORKERS	Coverage Positions:		
	Volume-influenced Positions:		
	Function Positions:		
	TOTALS		

Worksheet A: Net Available Work Hours

w/ Denise and Kevin

Worksheet for Net Available Work Hours (NAWH)		
Position:		
A	2080	Total hours for one full time employee
B	42	Average vacation and holiday leave (total hours)
C	43	Average sick leave (total hours)
D	71	Average personal leave (total hours)
E	12	Average training leave (total hours)
F	—	Average military, FMLA leave, etc. (total hours)
G	203	Average lunch and break (total hours)
H	—	Average other (meetings, light duty, special assignments, etc.)
I	371	Total unavailable time = Total B through H
J	1709	Net Available Work Hours (NAWH) = A – I
1709		= Net Available Work Hours per employee (NAWH from J above)

Worksheet B: Calculating Average Turnover Rate

Calculating Average Turnover Rate		Year					Average
		2006	2007	2008	2009	20__	
A	Total number of employees at the highest staffing level for that year	10	10	9	9		9.5
B	Number of new hires that failed to complete the probationary period	0	1	1	0		.5
C	Number of experienced employees who left for any reason*	0	2	1	0		.75
D	Turnover Rate (Turnover = B + C ÷ A)	0	.3	.22	0		.13
E	Retention Rate (Retention = 1 – Turnover) x 100	100	70	78	100		87

*Include all experienced employees who left for voluntary or involuntary reasons (e.g. turnover initiated by the employee, rotation, retirement, death, management action, etc.)

Worksheet C: Calculation For Coverage Positions

Worksheet for Estimating Staffing for Coverage Positions	
Note: Coverage positions must be covered regardless of call volume or level of activity.	
Position:	
Hours needing coverage:	
A. 2	Total number of consoles that need to be covered for this position
B. 24	Number of hours per day that need to be covered
C. 7	Number of days per week that need to be covered
D. 52	Number of weeks per year that need to be covered
E. 17,472	Total Hours needing coverage = A x B x C x D
Employee Availability:	
F. 1709	Net Available Work Hours - enter average NAWH from worksheet
Staff Needed:	
G. 10.22	Full Time Equivalent base estimate (FTE) = E ÷ F
H. .13	Turnover Rate - from retention worksheet, convert to decimal
I. 11.5	Full Time Equivalent required to accommodate turnover, prior to any adjustments based on quality indicators: FTE = G x (1+ H)
11.5	= Estimated Staffing Need (in FTEs from Step I above)
FTE = Hours needing coverage ÷ Employee Availability x Turnover Adjustment	

Worksheet D: Calculation Of Hourly Processing Capability

Worksheet for Calculation of Hourly Processing Capability	
A. 1.7 minutes	Average telephone busy time (call duration in minutes, using decimals), from phone records
B. 1.8 minutes	Average call completion time (in minutes, this includes time for data entry, address verification, etc.)*
C. 3.5 minutes	Average Processing Time (APT) = A + B
D. 17.1 calls hourly	Average Hourly Processing Capability (HPC) = 60 ÷ APT)

** Your telephone software may be able to provide detailed information about telephone busy time, but you will have to use other means to determine average wrap-up time.*

Worksheet E: Calculation for Volumn-influenced Positions

Worksheet for Estimating Staffing for Volume-influenced Positions	
Note: The number of Volume-influenced positions is based on call volume or activity level.	
Position:	
Workload:	
A. _____ calls	Total Call Volume for this position (TCV), from phone records
B. ____ minutes per call	Average Processing Time for this position (APT), from phone records
C. _____ calls hourly	Hourly Processing Capability (HPC) = 60 ÷ B
D. _____ call hours	Workload in hours (W) = A ÷ C
Employee Availability:	
E. _____	Net Available Work Hours - enter average NAWH from worksheet
F. _____	Agent Occupancy rate - enter AO, convert percent to decimal
G. _____	True Availability per person (TA) = E x F
Staff Needed:	
H. _____	Full Time Equivalent base estimate (FTE) = D ÷ G
I. _____	Turnover Rate from retention worksheet - convert to decimal
J. _____	Full Time Equivalent required to accommodate turnover, prior to any adjustments based on quality indicators: FTE = H x (1 + I)
_____ = Estimated Staffing Need (in FTEs from Step J above)	
FTE = Workload ÷ Employee Availability x Turnover Adjustment	

Worksheet F: Comparison and Summary of Staffing Estimates

Comparing Current Staffing with Estimated Staffing Needs			
WORK	Total Call Volume: 320,174 Total Emergency Calls: 46,174 Average Processing Time: 3.5 Hourly Processing Capability: 17.1	Current Staffing	Estimated Need
WORKERS	Coverage Positions:		
	Volume-influenced Positions:		
	Function Positions:		
	TOTALS		

4.3 THE EMPIRICAL APPROACH

This method looks at the actual staffing in PSAPs and purports to say: If the PSAPs are currently manned at this level for the call volume and other factors, the staffing is probably correct. With staffing of these actual PSAPs correct, then if a jurisdiction has similar characteristics, staffing their PSAP in a similar manner should ensure that sufficient manpower and expertise are available to perform the required functions.

The PSAP Data Sources section above provided the details of the number of PSAPs that fit into each of the 21 categories. The following table shows the information sought on factors that were likely to affect staffing size, reasons why considered and the degree to which the information was obtained. Please note that since this project was structured to provide recommended staffing before there is a PSAP and before there are accurate call volume records that call volume was not used as an influencing factor – it is the influenced factor. A second review later will consider how staffing relates to call volume.

Influencing Factor	Why Chosen	Info Availability
Population	People make calls. Should be an almost direct relationship.	Obtained for all, although some research with U.S. Census Bureau was required.
Wireless Subscribers	Should directly relate to number of wireless calls.	20 PSAPs reported the number.
Four-Lane Highway Mileage	Represents calls coming from non-residents as people travel through the area. Also relates to more accidents with their increase in 9-1-1 calls.	Obtained for all based on the Project Team's independent research. This was not a survey question.
Population Density	Believed by many to influence based on concept that the more persons per square mile, the more conflicts and thus the more calls per capita.	Obtained for all based on the PSAPs providing the population and square miles of jurisdiction or based on research by the Project Team. The Population Density was then calculated.

Table 20-List of Influencing Factors

Potential Call Volume Influencing Factors, Sorting by PSAP Population

The first task was to get a feel for the consistency of the relationship of call volume in comparison to the population served. The number of miles of four-lane highways in the jurisdiction is also included for the next comparison (to save duplicating a table). Data for the 70 PSAPs was obtained and is provided in **Table 21** below, sorted by population. The two thicker lines separate the PSAP size categories. Note that **Incoming** includes Wireline 9-1-1, Wireless 9-1-1 and 7-/10-digit Emergency Calls. Agency B37 is omitted owing to not providing call volume.

Note: In the following tables, the column that was used for the sort is highlighted in yellow. The sort is from lowest to highest number.

provided as **Appendix C**. The PSAPs that reported using PAI in this study gave call duration times from 250 to 600 seconds. If a PSAP plans to use PAI, it is recommended that the jurisdiction base their call duration on 60 to 90 seconds for dispatch plus the average emergency response unit travel time.

c. Call Volume: Call volume should be determined by a study of no shorter than two weeks' duration during the part of the year when the volume of 9-1-1 calls is at the maximum. The Average Bouncing Busy Hour (ABBH) should be used. Owing to the FCC requirement that all LECs and wireless carriers must deliver 9-1-1 calls to a PSAP, the calls that the new PSAP will be handling are already being sent to some call center. The call volume can be determined by one of the following methods:

(1) Obtaining Offered Call Volume: Ideally, the PSAP manager should request a 9-1-1 traffic study from each ILEC, CLEC and wireless carrier that serves subscribers in the jurisdiction. These should be combined to determine the total offered call volume. If this is obtained, the Extended Erlang B formula should be used.

(2) Received Call Volume from 9-1-1 Selective Router: If offered calls cannot be obtained from the sources, but the new PSAP will be replacing a call-taking center that is currently receiving calls from the jurisdiction via a 9-1-1 selective router, then the E9-1-1 System Service Provider (SSP) that manages the 9-1-1 selective router should be requested to insert a peg count meter on the trunks from the 9-1-1 selective router to the PSAP. This will provide the number of calls offered to the PSAP and will be more accurate than the current PSAP's accepted call volume because it will also count lost calls (those that did not get through). If any 7-/10-digit calls are also being accepted and will be transferred to the new PSAP, these should also be counted. If this is obtained, the Extended Erlang B formula should be used.

(3) Received Call Data at PSAP: If only accepted calls can be obtained, then the new PSAP manager should be conscientious in ensuring that the captured data is accurate. Call statistics software on the ANI/ALI controller, a Station Message Detail Record or other automated counting equipment should be used if possible. This will also provide the added benefit of determining the average Holding Time. If this is obtained, the Poisson (Molina) formula should be used.

6. Other staff members: It must be realized that queuing theory applies to call volume and the time it takes to process a call. It does not provide a recommendation for how many non-call taking supervisors, data base administrators, training supervisors, etc., must be hired to perform the other functions.

Recommendation: If call volume can be obtained, it provides a good approximation to the actual number of telecommunicators required.

4. Grade of Service: In keeping with 9-1-1 trunking recommendations, the Grade of Service used was P.01 (No more than one caller out of 100 attempts during the Average Bouncing Busy Hour would be unable to be served.).

5. Rules for Using Received Call Volume: The received call volume is a good guideline for PSAP manning, provided the following rules are followed:

   a. The call volume and durations should be automatically recorded to ensure the data is correctly captured. If the 9-1-1 calls and the 7-/10-digit emergency calls do not come into the same equipment (e.g., one comes into ANI/ALI controller, the other over a PBX connection), then separate call volumes and durations should be captured for both. The importance of this requirement is to ensure the data is accurate.

   b. Include in the calculations any load balancing staffing. By this is meant that if the number of call-taker positions manned differs depending on the expected call volume over a 24-hour period, the calculation must show the different "servers available" (to use a queuing theory concept) during each shift of the 24-hour period.

   c. Call data recording should be done over at least a two-week period and may be done at a medium period of call activity during the year, assuming that during peak times, the PSAP manager may use overtime to handle the additional call volume. If the PSAP manager does not have the flexibility to assign overtime, then the call data recording should be done during the peak call volume time of the year – The understanding here is that this is not the most efficient solution over a year's time, but it will meet the community's need for proper call taking during the worst times.

6. Obtaining Queuing Theory Inputs: Where the PSAP does not exist, the obvious problem is in getting the formula inputs (raw data) to use the Poisson formula. Here is the recommendation:

   a. Grade of Service: Recommend the 9-1-1 trunking Grade of Service that NENA and several states recommend, which is P.01.

   b. Call Duration:

      (1) PSAPs that do not provide Pre-Arrival Instruction (PAI) – The average call duration of the PSAPs that do not provide PAI and who stated their call volume was automatically recorded (which does not prove that the call durations were automatically recorded, but lends credence) was 94 seconds. On a separate study that Russ Russell did based on data from the Vermont Enhanced 9-1-1 Board (total state 9-1-1 calls for period July to August 2002), the average call duration was 84 seconds. Thus, the PSAP Staffing Surveys' inputs' average of 94 seconds is a sound number. Yet, those numbers reflect experienced PSAPs. Therefore, it is recommended that the call duration be extended a little for a new PSAP. The recommendation is 95 seconds.

      (2) PSAPs that provide Pre-Arrival Instruction – Where the telecommunicator stays on the call with the 9-1-1 caller until the emergency response unit arrives at the location of the emergency, the call duration is far longer. Agency A17 uses this procedure and volunteered their procedure to this study. The procedure is

difference being defined as "Calls Lost."). Many of the "calls offered" did not show up in the "call volume" reported by the PSAPs as those calls were blocked by call-takers that were already busy.

a. Thus, if a PSAP has fewer call-takers than required by the call volume, it should be assumed that the actual PSAP Grade of Service (new term here meaning the probability of a call reaching a PSAP during the PSAP's Busy Hour and not being answered) is less than the grade of service set in the queuing formula. In other words, people seeking help will not be getting that help to the extent that the PSAP manager and the community desire.

b. Therefore the PSAP Manager should obtain "calls offered" data. This can be done by asking the E9-1-1 Service System Provider (SSP, the local exchange carrier that is providing 9-1-1 selective routing service), to record call detail at the 9-1-1 selective router.

2. Holding Time: The duration of the activity that uses the server's capacity. In traffic engineering, it is the time from when the caller begins to dial the number to when the call is disconnected (because this represents the time that a trunk is in use). In PSAP server calculating, it is the time from when the call rings at the PSAP to when the call is disconnected (because this represents the time that a call-taker is engaged).

3. The queuing theory to be used depends upon the circumstances, which are:

a. Lost Calls Held – Defined as where the offered traffic has callers who will immediately and continually redial until a connection is made. In this case, the Poisson (also known as Molina) formula is used. Because this study had only accepted calls, this formula came closest to representing the number of call-takers required when all you can count are calls that have been received in the past (i.e., there is no offered call volume).

b. Lost Calls Cleared – Defined as where the offered traffic has callers, who upon receiving a busy, will not call back within a short time. This is represented by the Erlang B formula. The straight Erlang B does not offer the finesse of allowing an input as to what percentage of the blocked calls will immediately redial as opposed to waiting a short period.

c. Lost Calls Immediately Redialed – For queuing systems where a percentage of the callers will immediately redial, the Extended Erlang B is appropriate. The formula allows for a "percent redialed" input to the formula. This formula is recommended for 9-1-1 traffic studies where the offered call volume is allowed.

d. Lost Calls Delayed – Defined as where if a call is not immediately answered, it will go into a queue with the caller remaining on the line until the call is answered. This is the Erlang C formula, which should be used where offered call volume is available and the PSAP has Automatic Call Distribution (ACD) equipment.

Thus, the queuing theory recommended for determining number of call-takers when only accepted calls are available is the Poisson (Molina). Note: None of the PSAPs in the survey stated they had an ACD.

Source Data				Telecom-municators Required	Actual PSAP Staff			Compare
PSAP	ST	Call Volume	HT*		Telecom-municators	Ops Super-visors	Total Ops Staff	Actual Staff vs. Req'd
Agency A22	IL	550	60	4.78	10	1	11	**230%**
Agency B2	TN	82,850	38	11.42	10.5	0	10.5	92%
					Average Staff vs. Required Staff =			**117%**

Holding Time in red indicates PSAP provides Pre-Arrival Instructions.

Table 19-Compare Required Staff vs. Actual Staff Using Accurate Data

Note that the **Average Staff versus Required Staff** for this table of "accurate" call volume is identical to the Average for the previous table, which included "estimated" call volume. This indicates that at least on average, the estimated data is highly credible.

Conclusions from Table 19

With only highly credible data being used, the Required Staff based on queuing theory continues to fall near the middle of the range of Actual Staff, again indicating that it is a valid method as a basis for staffing recommendations.

The real concern is how those PSAPs that show manning of 80% or less of the expected requirement are able to accomplish their job. The answer may be that they do overtime work.

Agency B1 is also low in expected manning. In this case it is noted that although the county shows 68,589 incoming calls, only 20,876 result in dispatching. Thus, many calls may take fewer than the 93-second holding time reported. This is reinforced by the fact that many automated call tracking data is available only on the *9-1-1 Wireline* and *9-1-1 Wireless* calls, not the *7-/10-digit Emergency Calls*.

Agency A17 and possibly Agency B1 lead to the conclusion that if a PSAP will handle any non-9-1-1 emergency calls, it must track them for call duration as well, then calculate two levels of service requirement:

1. 9-1-1 Calls
2. 7-/10-digit Emergency Calls

4.2 CONCLUSIONS AND RECOMMENDATIONS FROM THE RATIONAL APPROACH

1. Calls Offered versus Calls Received: When an engineer plans to ensure that there are sufficient servers to handle a service load (i.e., call-takers to handle 9-1-1 calls initiated), the desired basic data is "calls offered." Calls offered is the number of attempts made during the period, stated with the understanding that not all of these attempts will be answered because all call-takers and/or trunks are occasionally busy. You may see that this study dealt only with "calls received," which may be assumed to be fewer than "calls offered" (The

To be fair, the Manning Ratio was also calculated specifically for Agency A17 based on the PSAP's input. That PSAP actually offers more time off for its telecommunicators than the average, thus the Manning Ratio was 5.12 versus 4.77 for the average Small PSAP. These two changes are reflected in the Agency A17 listing below.

Table 19 below lists only those PSAPs that reported that their call volume was not estimated, but automatically produced by statistics or management information system at the PSAP. The object is to determine if there are any changes in whether these PSAPs are more under- or over-staffed compared to the statistics generated in **Table 18** above which lists all call volumes provided. In other words, if we just used more credible data, would that change the outcome?

Source Data					Actual PSAP Staff			Compare
PSAP	ST	Call Volume	HT*	Telecom-municators Required	Telecom-municators	Ops Super-visors	Total Ops Staff	Actual Staff vs. Req'd
Agency B4	SC	13,920	250	11.42	12	4	16	**140%**
Agency C2	MI	189,008	96	21.56	13	5	18	83%
Agency B18	AR	8,305	105.7	9.79	6.8	1	7.8	**80%**
Agency C3	MI	140,000	71	16.58	17	6	23	**139%**
Agency B22	KY	160,580	65	16.31	14	0	14	86%
Agency B27	PA	36,275	73	11.42	12	0	12	105%
Agency B13	SD	82,542	51	11.42	11	1	12	105%
Agency B36	NC	169,544	61	16.31	15	3	18	110%
Agency A21	IA	4,600	26	4.78	6	1	7	**147%**
Agency B1	**NC**	69,589	93	14.68	8	2	10	**68%**
Agency B33	KY	194,802	77.88	21.21	13	4	17	**80%**
Agency B9	TN	13,000	274	11.42	10	1	11	96%
Agency B8	AL	15,167	92	9.79	10.5	2	12.5	**128%**
Agency B32	PA	59,734	67	11.42	19	0	19	**166%**
Agency C9	SC	261,180	123	28.19	33	5	38	**135%**
Agency C6	KY	20,950	68	9.95	9	4	13	**131%**
Agency B15	MI	34,886	81.4	11.42	9.5	0	9.5	83%
Agency B21	FL	18,552	81	9.79	12	1	13	**133%**
Agency A7	TN	80,500	34.8	11.15	14	0	14	**126%**
Agency A11	LA	4,865	62	6.37	5	0	5	**79%**
Agency B30	TX	66,203	61	11.42	28	3	31	**271%**
Agency A14	MO	5,935	362	9.55	11.2	0	11.2	117%
Agency B34	MI	158,000	77	16.31	10	4	14	86%
Agency B19	PA	18,356	64	9.79	13.5	1	14.5	**148%**
Agency A3	GA	50,800	72	11.15	11.5	0	11.5	103%
Agency A17	**IL**	3,000 20,000	600 94	17.52	7	1	8	**67%**
Agency B16	MT	33,000	95	11.42	10	1	11	96%
Agency A13	WV	6,815	240	9.55	8		8	84%
Agency C1	LA	48,000	63	11.61	18	1	19	**164%**
Agency B25	CA	62,400	207	16.31	13	1	14	86%

4.4 CONCLUSIONS AND RECOMMENDATIONS FROM THE EMPIRICAL APPROACH

The PSAPs have been grouped by size, with one table provided per size. This has been done to take into account the commonality of staffing structural differences within each size and to allow the factors that tend to cause one PSAP to have high call volume for a certain population to be balanced by the factors that cause another PSAP to have low call volume for that same size population.

The recommended staffing will be based on the averages for each PSAP size, modified by a few special situations, which will be covered later.

As is typical of averages, they are not round numbers as you'll see at the bottom of each table. Nor do the totals add up to whole persons. This will be reconciled later. The following three tables merely document current PSAP manning as a basis for analysis which follows.

Finally, the reader should be aware of two facts learned as discussions were held with several of the PSAP managers:

1. The personnel they reported as budgeted were not sufficient to do all the work required. Many PSAPs had personnel working overtime or just didn't spend much time on non-essential tasks, such as training.

2. The PSAPs that did not report any support tasks (DBA through Admin) actually had personnel performing those tasks, but did not report them. In some instances this was because the work, specifically Database Administration and Technical, was done outside the PSAP Manager's chain of command (e.g., PSAP Operations was funded separate from a city or county support staff that did this work without charge to the PSAP).

Thus the numbers reported by some PSAPs are low for proper staffing.

Therefore, the following **Tables 28, 29 and 30** have been developed to show how staffing requirements group by PSAP size. Day-time populations are used and the three PSAPs that have the extra-ordinarily high day-time populations are highlighted in light yellow.

The following **Table 28** reports Small PSAPs.

PSAP	ST	Pop	CT/ Disp	Ops Super	Total Ops	DB A	Tech- nical	Train - ing	Public Educ'n	Ad- min	Total Spt	Total Staff
Agency A2	KS	6,528	6	0	6	0.1	0	0.15	0.05	0.75	1	7
Agency A6	CA	10,686	4	0	4	0	0	0	0	1	1	5
Agency A8	IL	13,500	9	1	10	0	0	0	0	0	0	10
Agency A10	AL	14,000	4	4	8	0	0	0	0	0	0	8
Agency A12	IL	15,000	5	0	5	0	0	0	0	0	0	5
Agency A13	WV	15,200	8		8	1	0	1	0	1	3	11
Agency A14	MO	15,500	11.2	0	11.2	0.8	0	0	0.3	0.7	1.8	13
Agency A15	FL	16,000	8	2	10	0	0	0	0	0	0	10
Agency A16	IL	16,000	5	2	7	0	0	0	0	0	0	7
Agency A17	IL	16,000	7	1	8	0.2	0	0	0	0.8	1	9
Agency A18	MI	17,000	6	1	7	0	0	0	0	0	0	7
Agency A19	KY	17,000	6	1	7					0	0	7
Agency A20	VT	17,925	8	1	9	0	0	0	0	0	0	9
Agency A21	IA	18,187	6	1	7	0	0	0	0	0	0	7
Agency A22	IL	18,200	10	1	11	3	3	1	0	3	10	21
Agency A23	MI	18,773	4.5	0.3	4.8	1	0	0	0	1	2	6.8
AVERAGE SMALL PSAP . . .			**6.73**	**1.02**	**7.69**	**0.4**	**0.2**	**0.14**	**0.023**	**0.52**	**1.24**	**8.93**

Table 28-Small PSAP Actual Staffing

The following **Table 29** reports Medium PSAPs.

PSAP	ST	Pop	CT/ Disp	Ops Super	Total Ops	DBA	Tech- nical	Train - ing	Public Educ'n	Ad- min	Total Spt	Total Staff
Agency B1	NC	20,000	8	2	10	0	0	0.5	0	0.8	1.3	11.3
Agency A5	KY	20897	6	1	7	0	0	0	0	0	0	7
Agency B2	TN	23,150	10.5	0	10.5	1	0	0	0	1	2	12.5
Agency B3	MI	26,000	9	0	9	0	0	0	0	1	1	10
Agency B4	SC	26,314	12	4	16	1	0	0.25	0.25	0.25	1.75	17.75
Agency B5	KY	27,000	6	1	7	0	0	0	0	0	0	7
Agency B6	MI	27,500	10.5	0.5	11	0.5	0	0.5	0	1	2	13
Agency B7	IN	27,800	7	1	8	0.5	0	1	0	1	2.5	10.5
Agency B8	AL	28,756	10.5	2	12.5	1	0	1	0	20	22	34.5
Agency B9	TN	29,862	10	1	11	1	0	0	0	0	1	12
Agency B10	OH	31,000	16	2	18		1	1	1	1	4	22
Agency B11	FL	34,500	12	1	13	2	2	0	0	0	4	17
Agency B12	IL	35,000	9	1	10	0.1	0.125	0.13	0.125	0.5	1	11
Agency B13	SD	35,074	11	1	12	0.2	0.5	0	0.1	0.2	1	13
Agency B14	LA	35,644	9	1	10	1.5	0.15	0.15	0	0.2	2	12
Agency B15	MI	36,000	9.5	0	9.5	0	0	0	0	1	1	10.5
Agency B16	MT	37,304	10	1	11	3	0	0	0	0	3	14
Agency B17	MI	38,543	9	3	12	0	0	0	0	0	0	12

PSAP	ST	Pop	CT/ Disp	Ops Super	Total Ops	DBA	Tech- nical	Train - ing	Public Educ'n	Ad- min	Total Spt	Total Staff
Agency B18	AR	40,000	6.8	1	7.8	1	0	0.1	0.1	2	3.2	11
Agency B19	PA	46,000	13.5	1	14.5	0.3	0	0.25	0	0.5	1	15.5
Agency B20	IL	46,000	12	1	13	0.3	0.25	0.25	0.25	0	1	14
Agency B21	FL	46,755	12	1	13	2	0	0	0	0	2	15
Agency B22	KY	49,752	14	0	14	1	0	0	0	2	3	17
Agency B23	MO	52,000	14	3	17	1	0	1	0	0	2	19
Agency B37	FL	57,841	10	0	10	0.5	0	0.25	0.25	0	1	11
Agency B24	FL	58,000	25	4	29	6	1	1	0	2	10	39
Agency B25	CA	60,000	13	1	14	0	1	0	0	0	1	15
Agency B26	NY	61,676	9	1	10		0		0	0	0	10
Agency B27	PA	62,000	12	0	12	3.5	0	0.5	0	1.5	5.5	17.5
Agency B28	MI	65,000	9	3	12	0.4	0	0	0.1	1	1.5	13.5
Agency B29	IL	68,277	15	2	17	0.2	0.8	0.25	0.25	0.5	2	19
Agency A3	GA	70,000	10	0	10	0	1	1	1	1	4	14
Agency B30	TX	73,334	28	3	31	0.2	1.5	0.5	0.1	1.5	3.8	34.8
Agency B31	IN	75,000	18	3	21	0	0.08	0.12	0.02	1	1.26	22.26
Agency B32	PA	75,259	19	0	19	0	0	0	0	2	2	21
Agency B33	KY	78,000	13	4	17	1	0	0	0	1	2	19
Agency B34	MI	80,000	10	4	14	1	1	0	0	1	3	17
Agency B35	LA	89,974	10	1	11	0	0	0	0	1	1	12
Agency B36	NC	94,536	15	3	18	0.3	0.1	0	0.05	0	0.45	18.45
Agency A4	IL	97,000	9	1	10			0.45	0.05	0.5	1	11
AVERAGE MEDIUM PSAP			11.8	1.49	13.3	0.82	0.27	0.26	0.09	1.16	2.53	15.8

Table 29-Medium PSAP Actual Staffing

The following **Table 30** reports Large PSAP staffing.

PSAP	ST	Pop	CT/ Disp	Ops Super	Total Ops	DBA	Tech- nical	Train - ing	Public Educ'n	Ad- min	Total Spt	Total Staff
Agency C1	LA	104,503	18	1	19	1	1	0.5	0.5	1	4	23
Agency C2	MI	109,000	13	5	18	0	0	0	0	0	0	18
Agency C3	MI	110,000	17	6	23	0	0	0	0	0	0	23
Agency A1	IL	110,000	6	3	9	0.5	0.1	0	0	1	1.6	10.6
Agency C4	TX	110,000	20	4	24	0	0.5	0	0	2	2.5	26.5
Agency C5	TX	117,300	21	4	25	0	0	1	0	2	3	28
Agency C6	KY	123,000	9	4	13	0	0	0	0	0	0	13
Agency C8	PA	127,500	19.5	3	22.5	0	0.25	0	0	0	0.25	22.75
Agency C7	SD	130,000	28	2	30	0	1	1	0	1	3	33
Agency C9	SC	132,000	33	5	38	2	0	1	0	2	5	43
Agency C10	KY	140,000	30	1	31	1	2	0	0	8	11	42
AVERAGE LARGE PSAP . . .			19.5	3.45	22.9	0.41	0.44	0.32	0.05	1.55	2.76	25.7

Table 30-Large PSAP Actual Staffing

Considerations in Modifying PSAP Staffing Averages

1. For reasons listed before **Table 28**, some of the PSAPs did not report all the personnel doing work for the PSAP. For example, the "zeroes" listing DBA work in large PSAPs is simply unrealistic. Therefore the averages are low.

2. The greatest variation comes with the database administrator tasks.

   a. If the jurisdiction has addressed and mapped the area, and the jurisdiction is stable (i.e., no new subdivision and little growth), then the man-hours requirement for the DBA is minimal. Recommend 0.1 to 0.3 depending on the size of the jurisdiction.

   b. If the jurisdiction is growing with much new development and/or a highly mobile population so that address updates are frequent, the work for the DBA is greater. Recommend 0.2 to 0.6 DBAs, depending on the size of the jurisdiction and the dynamics of the changes.

   c. If the jurisdiction is in the addressing and mapping mode, even though contractors are doing that work, there is a significant burden on the jurisdiction to validate addresses for 9-1-1 use. Recommend one to three DBAs, depending on the size of the jurisdiction.

3. Part-time employees are acceptable to augment full-time employees. PSAPs will be more flexible hiring part-time workers who are not interested in working 40-hour weeks and who provide an excellent resource for expanding PSAP capabilities during Busy Hours. The part-timer is also excellent for DBA where the tasks don't justify a full-time person or do justify a little more than one person. Therefore, some recommendations will result in decimal recommendations.

	Additional Personnel Requirement			
	Task	Small PSAP	Medium PSAP	Large PSAP
MAPPING AND ADDRESSING				
Little change	DBA	0	0	0
Dynamic area	DBA	0.4	0.8	1
New mapping and addressing in progress	DBA	1.5	3	4
CALLS ACCEPTED				
9-1-1 and Emergency only on Admin	Telecom-municator	0	0	0
Municipal Utilities	Telecom.	1	1	2
Jurisdiction official*	Telecom.	2	4	6

*Jurisdiction official – Take calls for other departments that are not emergency response agencies, particularly after-hours.

Table 31-Additional Personnel Requirements

Newberg City Council

QUASI-JUDICIAL NON-LAND-USE PUBLIC HEARING PROCEDURE (Non-Land Use)

1. OPEN THE PUBLIC HEARING, ANNOUNCE THE PURPOSE, DISCUSS TESTIMONY, PROCEDURE, AND TIME ALLOTMENTS

2. CALL FOR ABSTENTIONS, BIAS, EX-PARTE CONTACT, AND OBJECTIONS TO JURISDICTION

CITY ATTORNEY LEGAL ANNOUNCEMENTS:
READ "Quasi-Judicial Announcements" Sheet

3. STAFF REPORT

4. PUBLIC TESTIMONY

Time Limits: A. Mayor sets time limits
B. Citizen goes to witness table, states name & presents testimony

A. PROPONENTS (Principle Proponent/s first, then others or undecided)
B. OPPONENTS AND UNDECIDED
C. PRINCIPAL PROPONENT REBUTTAL

5. QUESTIONS OF PROPONENTS AND OPPONENTS FROM THE FLOOR OR THE CITY COUNCIL DIRECTED THROUGH THE CHAIR

6. PUBLIC AGENCY LETTERS OR COMMENTS

7. CLOSE OF PUBLIC TESTIMONY PORTION OF HEARING

CITY ATTORNEY LEGAL ANNOUNCEMENTS

8. FINAL COMMENTS FROM STAFF AND RECOMMENDATION

9. DELIBERATION OF COMMISSION INCLUDING DISCUSSION OF CRITERIA WITH FINDINGS OF FACT

10. ACTION BY THE CITY COUNCIL

A. ORDER – Usually requires passage of order.
B. VOTE – Voice vote is permitted.
C. MAJORITY OF A QUORUM – Requires majority of the quorum for passage.
D. COMBINATION – Can be combined with other council action; separate vote on each action is required.

Exhibit D
to Order No. 2014-0035

Findings of Fact

The Council adopts the following Findings of Fact after deliberations based upon the record submitted and testimony presented in the public hearing. These facts address criteria established by Ordinance No. 2009-2714 and found in the Newberg Code, Section 36.37. They are as follows:

§ **36.37. Criteria.** The PSF will be established based upon the following criteria:

(A) The need for services.

Findings of Fact:

- Current staffing of Communication Officers is 9.0 FTE, a number that has remained constant since 1999.
- In addition to the nine current FTEs, the Dispatch Center is incurring overtime costs in an amount approximately equivalent to an additional FTE.
- Call volume, population, activities, and field personnel have increased over time while staffing of the dispatch center has remained stagnant.
- City is relying on other staff to cover shifts, adversely affecting their ability to perform their primary duties.
- Internal staffing and workload evaluation calculates that between 11.5 and 12.6 FTEs would be required to fully staff the dispatch center.
- The ISO rating for Newberg Fire Department could be negatively affected if staffing falls below two (2) dispatchers per shift, resulting in increased insurance rates to Newberg citizens and businesses.
- Chief Casey has shown the necessary staffing needs in order to meet safety standards for communications officers and provide service to the community. The need is to retain existing, and add additional communications officers.

Conclusion: Based upon the entire record, the need for 10 communications officer positions has been established.

(B) Comparison of resources to provide such service by examining the following:

(1) Comparison with resources available in similar communities.

Findings of Fact:

- There is limited information reviewing comparisons to other dispatch centers.
- Of 10 PSAPS of similar size, four had more FTE's than Newberg. Four of those agencies share a similar total telephone call volume. Only one of those four staffed fewer FTEs than Newberg-Dundee.
- Consolidation of the 9-1-1 center has been studied in 1998 and 2000, and after considering those studies consolidation was not pursued.

Conclusion: Based on the entire record, the Newberg-Dundee Communications Center employs less FTEs than similar communities.

(2) Comparison with resources used to provide services, such as number of communications officers…as shown per capita through nationally recognized service studies.

Findings of Fact:

- There exists no national governmental standard for 9-1-1 dispatch centers.
- 9-1-1 center comparisons are dissimilar due to operational differences.
- The best information regarding standardized staffing calculations for dispatch centers comes from the Association of Public Safety Communication Officials (APCO).
- Utilizing APCO PROJECT RETAINS, an internal staffing and workload evaluation was conducted, resulting in a calculated need of between 11.5 to 12.6 FTE.

Conclusion: Based on the entire record, the best nationally recognized service studies do not base service per capita but on operational factors. Those standard staffing calculations show a need for between 11.5 and 12.6 FTEs.

(3) Comparison of statistics showing the calls for service or incidents that require services from year to year to determine if the need for services has increased or decreased.

Findings of Fact:

- Computer Aided Dispatch (CAD) calls for services (CFS) has steadily increased from 25,479 in 2005 to 39,127 in 2013, an increase of 53.6%.
- CAD calls for Service best represent the workload of communication officers, police officers and firefighters. These calls represent distinct services that result in a generated computer report.

- Business and 9-1-1 calls varied little over the same time period.

Conclusion: Based on the entire record, the best measure of workload indicates an increase of 53.6% in calls for service without any increase of staffing, which is not sustainable.

(4) Other recognized studies or authoritative sources.

- The National Emergency Number Association, 2003 report (Kimball report) studied 9-1-1 services serving populations of fewer than 140,000. That report suggests 7-17 dispatchers are needed for medium sized PSAPS (19,000-100,000 population) based on population alone.

Conclusion: Based on the entire record, based solely on population, both the current staffing and proposed staffing are within the range identified by NENA.

(5) Take into consideration the increase or decrease in population.

Findings of Fact:

- Staffing levels for communication officers have remained constant since FY 1999-2000.

- The population of the Newberg-Dundee dispatch area was 28,648 in 2000.

- The population of the Newberg-Dundee dispatch area in 2013 was 39,127.

- The population in the Newberg-Dundee dispatch area has grown 36.6% from 2000 to 2013.

- The population continues to grow and Portland State University forecasts continued growth at a moderate to strong pace through 2035.

Conclusion: Based on the entire record, the population has increased significantly since communication officer staffing was last increased. The calls for service have increased. This growth patter is expected to continue. Therefore, more communications officers are needed to meet the demands for service.

(6) A reasonable connection between those who need, use, or are likely to need or use the service, and those who are charged the fee.

Findings of Fact:

- The population of Newberg is a factor, which can reasonably be used to predict the number of CFS's.
- The developed properties within the city allow for occupancy of those properties. A reasonable method of determining whether or not a property is developed is if it has a water connection for utility service to the property.
- Usually the person occupying the property is the one responsible for payment of such water services.
- It is reasonable to equate the size and number of water meters servicing the property, to the number of occupants. In addition, developed property has a need for police and fire services to protect the development.
- Therefore, it is reasonable to assess the fee based upon the water service and residential meter equivalent (RME).

Conclusion: Based upon the entire record, the City has the authority to levy a fee to be paid by a particular class of persons when a reasonable connection is shown between those persons and the use of services. There exists a logical connection between the use of police and fire dispatch services and developed property. It is reasonable to conclude that property has been developed because it uses City water services. Therefore, having the person responsible for the water service, also be responsible for payment of the Public Safety Fee (PSF) is reasonable.

(7) The amount of revenue needed to support the resources to provide the services.

Findings of Fact:

- The estimated amount of revenue to support a communications officer positions is estimated to be one (1) dollar per residential meter equivalent (RME) per month. This is shown in Attachment B to the Administrative Report.

- The purpose of the PSF is to support two (2) communications officer positions.

- To accomplish the stated purpose, the PSF shall be set at two (2) dollars per RME per month.

- To maintain the level of funding, this PSF shall be indexed to the Portland CPI-U for the prior calendar year, as published by the U.S. Bureau of Labor Statistics.

Conclusion: Based on the entire record, the Council finds it necessary to set the COPSF at $2.00 per month per RME, indexed to the Portland CPI-U for the prior calendar year, as published by the U.S. Bureau of Labor Statistics.

(C) Any other criteria.

Legal authority.

Findings of Fact:

- The PSF method of raising revenue to fund necessary public safety activities has been used in other communities.

- The method has been challenged through court review. The Supreme Court of Oregon has upheld the method. (See Knapp v. Jacksonville, page 10 of Administrative Report.)

- The Council has approved a process for establishing a fee. That process has been followed.

Conclusion: Based upon the entire record, the Council has authority to establish the PSF through the process that the Council approved. The PSF process has been followed and the criteria have been met. Additionally, the revenue method has been found to be legally correct by the Oregon Supreme Court.

Exhibit E
to Order No. 2014-0035

List of Additional Conditions for Administration of the Public Safety Fee

The City Council adopts the following additional conditions and delegates the necessary authority to the city manager to implement the necessary procedures to administer the Public Safety Fee (PSF). In addition to all other authority and conditions, the Council adopts the following:

1. Moneys to be Paid into Public Safety Fund.

(A) All Public Safety Fees (PSF) collected by the City will be paid into the Public Safety Fund. Such revenues shall be used for funding two (2) communications officer positions.

(B) To the extent that the PSF's collected are insufficient, other City funds may be used as determined by the city manager, but the city manager may order the reimbursement to such other funds if additional PSF's are thereafter collected. All amounts on hand in the Public Safety Fund will be invested by the City in investments proper for City funds.

(C) The PSF's paid and collected by virtue of this Order will not be used for general or other governmental or proprietary purposes of the City, except to pay for the equitable share of the cost of accounting, management, and government, which is attributable to the Public Safety Fund.

(D) Other than as described above, the PSF's and charges will be used solely to pay for the two (2) communications officer positions, necessary expenses thereof, and costs incidental thereto.

2. Collection.

(A) The PSF will be included as an additional item on the City monthly utility billing wherever feasible, unless otherwise specified.

(B) Unless another person responsible has agreed in writing to pay the PSF, and a copy of that writing is filed with the City and accepted by the City, the person normally responsible for paying the City's water and sewer utility charges is responsible for paying the PSF, if the property is located within the city limits.

However, the owner of record of the developed property will, at all times, be primarily responsible for payment. For instance, the developed property owner will be responsible for payment if a tenant on the developed property does not pay the PSF.

(C) In the event a developed property is not served by a domestic water meter or sewer hook-up, or if water and sewer service is disconnected, the developed property owner of record is the responsible party.

(D) A request for water or sewer service, a building permit, or the occupancy of an unserviced building will automatically initiate appropriate billing for PSF services.

(E) There will be no charge for an undeveloped property until such time as building permits are issued for that property.

(F) Late charges in the amount reasonably calculated to recuperate the cost of duplicate billing, collection, and other administrative costs will be established by the City through the city manager's authority.

3. Enforcement.

(A) In the event funds received from City utility billings are inadequate to satisfy in full all of the water, sewer, and PSF charges, credit will be given first to the PSF, second to the sewer services charges, third to the charges for water service.

(B) In addition to other lawful enforcement procedures, the City may enforce the collection of charges required by this chapter by withholding delivery of water to any premises where PSF's are delinquent or unpaid.

(C) Notwithstanding any provision herein to the contrary, the City may institute any necessary legal proceedings to enforce the provisions of this chapter, including but not limited to injunctive relief and collection of charges owing. The City's enforcement rights shall be cumulative.