

**Draft CONFIRE Staff Report Dated
January 26, 2016 for Transition of
San Bernardino City Fire Dispatch
Personnel to CONFIRE/County Fire**

Attachment 3



STAFF REPORT

DATE: January 26, 2016

FROM: Mike Bell
Director

TO: Board of Directors
Administrative Committee

SUBJECT: Transition of San Bernardino City Fire to County Fire

Recommendation(s)

- Acknowledge and accept County Fire Plan of Service for annexation of San Bernardino Fire City fire service area into the County Fire District.
- Agree to transition existing San Bernardino City Fire dispatch staff to CONFIRE employees upon completion of the annexation process.
- Accept transfer of dispatch related equipment from City Fire to CONFIRE.

Background Information

The City of Bernardino (City) proposes to annex into the San Bernardino County Fire Protection District (County Fire), its Valley Service Zone and Fire Protection Service Zone 5 (FP-5) for the provision of fire suppression and emergency medical services. Annexation to the San Bernardino County Fire District will allow the City to take advantage of the substantial economies of scale available from the District, as well as existing District stations and personnel located nearby to the City. These factors will allow the City to reduce the overall level of City revenue allocated to fire service delivery, freeing up scarce City resources to address other critical service delivery needs in the community. This is consistent with the City's Plan of Adjustment filed with the bankruptcy court on May 30, 2015.

The reorganization of County Fire and annexation of the City into County Fire would result in the complete assumption of fire, rescue, and EMS services by County Fire for the City of San Bernardino. Through the reorganization process an agreement will be developed to transfer a percentage of the City's property tax to revenue to County Fire to support the short and long term costs of providing fire protection services. Following completion of the reorganization, and execution of the property tax reallocation agreement, the City will have no further funding obligations for fire suppression or emergency services within the City. The proposed start of service should the reorganization be approved is July 1, 2016. The following describes the plan of service that would be provided by County Fire to the City upon annexation.

Operational Impact

This transition will result in the call volume of the City of San Bernardino and San Manuel Fire Departments to be added to the existing call volume of CONFIRE. Currently the City provides dispatch services for San Manuel under an existing contract. County Fire by virtue of the annexation will absorb that responsibility which then becomes an additional role for CONFIRE.

In 2015 CONFIRE dispatched approximately 160,000 fire, rescue and emergency medical incidents. The combined anticipated call volume of San Bernardino City (35,000 incidents) and San Manuel (1,100 incidents) is approximately 36,100 incidents which drives CONFIRE's projected call volume close to 200,000 a year.

As part of a wider organizational analysis CONFIRE retained Tech Knowledge, Inc to conduct an operational analysis of the impact of the additional call volume on the CONFIRE operation. In summary, Tech Knowledge indicated a need to hire a minimum of 12 and up to 16 additional staff (3-4 per shift) to adequately manage the increased work load. See the CONFIRE Dispatch Operational Analysis (Exhibit A, attached) for additional details on staffing. The City currently has 12 funded positions (with some vacancies).

A major challenge of this transition is the space requirement to accommodate the additional staff. The current CONFIRE facility in Rialto is not sufficient to take on the additional space needs. Fortunately CONFIRE has a backup site at the High Desert Government Center in Hesperia that affords the organization the opportunity to utilize it on a fulltime basis to help accommodate the increased staffing and workload at the Center. The CONFIRE Board met on November 18, 2015 and provided direction and approved funding the project management required to bring the Hesperia site up to a fully operational center.

There are operational benefits to bringing the City Fire resources into the CONFIRE model. This will afford more rapid deployment of automatic and mutual aid resources along the contiguous jurisdictional borders shared by the City of San Bernardino and the existing CONFIRE agencies. Opening the second center ensures a real-time back up capability exists to support operations should there be technical or incident related challenges at one center or the other as was witnessed during the North Fire in July 2015. The Sheriff's Department operates a two-center model for the same reason. By creating additional capacity at Rialto, CONFIRE also will position itself to be considered as a partner agency by other entities seeking integrated communication and resource status and deployment solutions.

The two-center model will require the addition of 4 Dispatch Supervisor positions. This cost is accounted for in the Plan for Service developed by the County Fire Department

Human Resource Impacts

The Plan for Service proposed by the County Fire Department and adopted by the Board of Supervisors includes the transfer of existing City Fire personnel to County Fire. Currently City

Fire has 12 funded positions in their fire dispatch center. CONFIRE will need all 12 of the positions to function effectively with the increased call volume of City Fire. All current City of San Bernardino City Fire dispatch personnel will be offered dispatcher positions by CONFIRE. There are current and anticipated vacancies in San Bernardino City Fire so it is anticipated that a recruitment of dispatchers will also be necessary to fill the 12 needed positions.

The recruitment process will be managed by the San Bernardino County Human Resources. This entity provides such services to CONFIRE per the JPA Agreement and By-Laws. The incumbent City Fire staff will be hired by CONFIRE and will retain their service accruals, but will have a hire date effective upon the transition. They will be brought in under the salary and benefit schedule currently in place through a collective bargaining agreement between the Communications Workers of America (CWA) Local 9588 and the San Bernardino County Fire District, which is effective until July 17, 2017. Other terms of this transition as it applies to employee matters are contained in the "City of San Bernardino Annexation into the San Bernardino County Fire Protection District Plan of Service." (Exhibit B, attached)

Financial Impacts

The net effect of this process will not have an adverse impact on the CONFIRE budget.

The on-going operational cost associated with the addition of the City of San Bernardino call volume to CONFIRE is projected to be approximately \$1,560,210. The one-time cost to initiate service is \$316,760. (See Table 1, attached)

The increased costs associated for dispatch and communications provided by CONFIRE will be funded by County Fire through the revenue generated by the transfer of property tax increment and the annexation of the area into County Fire's Fire Protection Service Zone 5 (FP-5). Other CONFIRE member and contract agencies will not see an increase in their rates based on this annexation alone. The opening of the High Desert Government Center and other budgetary matters will likely result in an increase in agency costs for FY 2016-17. This was also discussed at the November 18, 2015 meeting at which time the CONFIRE Board approved moving forward with the plan to open the High Desert Government Center.

The dispatch related equipment that will transfer to CONFIRE from City Fire has no adverse impact to the CONFIRE budget. The list of City Fire equipment transferring to CONFIRE is provided on page 8-9 of the "City of San Bernardino Annexation into the San Bernardino County Fire Protection District Plan of Service." (Exhibit B, attached)

Summary

It is recommended by CONFIRE staff that the Administrative Committee and CONFIRE Board of Directors acknowledge and accept the "City of San Bernardino Annexation into the San Bernardino County Fire Protection District Plan of Service" as the appropriate pathway

to guide the transition as it impacts the CONFIRE organization. Additionally, it is recommended that the Administrative Committee and Board of Directors agree with the specific components of the plan regarding the transition of the existing City of San Bernardino Fire employees to CONFIRE and accept the list of dispatch related equipment that will transfer from the City of San Bernardino to CONFIRE as a result of this process.

Attachments:

Table 1: County Fire Costs for the Addition of San Manuel/San Bernardino City Fire

Exhibit A: CONFIRE Dispatch Operational Analysis

Exhibit B: City of San Bernardino Annexation into the San Bernardino County Fire Protection District Plan of Service

County Fire Costs for the Addition of San Manuel / San Bernardino City

Item	SBC San Manuel	SBC SB City (BDO)	Other County Divisions	Total
Admin	\$ -	\$ 61,232	\$ (35,355)	
CAD/GeoFile	\$ -	\$ 71,491	\$ (41,279)	
HDGC	\$ -	\$ 43,931	\$ 5,674	
Dispatch	\$ 33,108	\$ 1,053,436	\$ 96,554	
Total Dispatch	\$ 33,108	\$ 1,230,090	\$ 25,593	1,288,792
Agency Equipment Replacement	\$ -	\$ 56,200	\$ -	
CONFIRE Infrastructure Equipment	\$ 1,297	\$ 5,018	\$ (25,293)	
Agency WAN Circuit Costs	\$ -	\$ 72,420	\$ -	
Confire Infrastructure WAN Circuit Costs	\$ 150	\$ 545	\$ (2,748)	
Infrastructure MIS Support	\$ 3,960	\$ 13,824	\$ (69,805)	
Email	\$ -	\$ 7,354	\$ (5,489)	
RMS Imagetrend	\$ -	\$ 27,646	\$ (16,339)	
Telestaff	\$ -	\$ 11,655	\$ (3,280)	
Desktop Support	\$ -	\$ 5,264	\$ (3,961)	
Xen Desktop Support	\$ -	\$ 10,224	\$ (9,680)	
Server and Router	\$ -	\$ 5,450	\$ (3,853)	
MDC Support	\$ 10,510	\$ 50,213	\$ (11,925)	
Phone Tablet Wireles	\$ -	\$ 11,494	\$ (1,294)	
Envisions Permit Plus	\$ -	\$ -	\$ -	
Payroll, Misc Apps, & Wiring	\$ -	\$ 24,477	\$ 54,203	
Total MIS Costs	\$ 15,917	\$ 301,784	\$ (99,464)	218,237
Radio Pager pass through costs	\$ -	\$ 53,182	\$ -	53,182
Total Annual Costs	\$ 49,025	\$ 1,585,056	\$ (73,871)	1,560,210

One Time Costs

One Time Costs	SBC SB City (BDO)	
WAN fees	\$ 68,700	
Server	\$ 6,000	
Desktop Computers	\$ 38,000	
Printers	\$ 14,900	
Phones	\$ 6,000	
E-pcrs	\$ 35,000	
EMD Certification/Recertification	\$ 1,500	
EMD Licensing / Maintenance/ Card Sets	\$ 34,521	
HR Costs to Process 13 New Hires	\$ 4,355	
One time training costs for Dispatch	\$ 107,784	
Total One Time Costs	\$ 316,760	\$ 316,760

Staffing Included - 13

8 Dispatcher FTE / 4 Dispatch Supervisor FTE / 1 AST FTE



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Total One Time Costs	\$ 316,760	\$ 316,760

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8 Dispatcher FTE / 4 Dispatch Supervisor FTE / 1 AST FTE



One Time MIS Costs

Division	Number	Address	# Units	# Reserve Units	WAN/ router Cost	Server	PCs	Printers	Phones	E- pcrs/MD		Total
										Cs	Cs	
BDO	221	200 E. 3rd St. San Bernardino, CA 92410	2	1	\$8,700	\$6,000	\$18,000	\$5,900	\$1,500	\$1,500	\$5,000	
BDO	222	1201 W. 9th St. San Bernardino, CA 92410	1	1	\$6,000		\$2,000	\$900	\$450	\$450	\$2,500	
BDO	223	2121 Medical Center Dr. San Bernardino, CA 92410										
BDO	224	2641 N. E St. San Bernardino, CA 92410	2	1	\$6,000		\$2,000	\$900	\$450	\$450	\$5,000	
BDO	225	1640 W. Kendall Dr. San Bernardino, CA 92410	1	1	\$6,000		\$2,000	\$900	\$450	\$450	\$2,500	
BDO	226	1920 N. Del Rosa Ave. San Bernardino, CA 92410	1	1	\$6,000		\$2,000	\$900	\$450	\$450	\$2,500	
BDO	227	282 W. 40th St. San Bernardino, CA 92410	2	1	\$6,000		\$2,000	\$900	\$450	\$450	\$5,000	
BDO	228	3398 E. Highland Ave. San Bernardino, CA 92410	1	1	\$6,000		\$2,000	\$900	\$450	\$450	\$2,500	
BDO	229	202 N. Meridian Ave. San Bernardino, CA 92410	1	1	\$6,000		\$2,000	\$900	\$450	\$450	\$2,500	
BDO	230	502 S. Arrowhead Ave. San Bernardino, CA 92410	1	1	\$6,000		\$2,000	\$900	\$450	\$450	\$2,500	
BDO	231	450 E. Vanderbilt Dr. San Bernardino, CA 92410	1	1	\$6,000		\$2,000	\$900	\$450	\$450	\$2,500	
BDO	232	6065 Palm Ave. San Bernardino, CA 92410	1	1	\$6,000		\$2,000	\$900	\$450	\$450	\$2,500	
BDO	233	165 S. Leland Norton Way San Bernardino, CA 92410	1	1	\$6,000		\$2,000	\$900	\$450	\$450	\$2,500	
Admin			14	11	\$68,700	\$6,000	\$38,000	\$14,900	\$6,000	\$6,000	\$35,000	\$168,600

Assumptions:

- no cost allocated to MDC hardware - hope to re-use existing hardware; b-u plan is to pull one-time cost from Co Fire replacement funds or defer
 - no cost allocated to Kronos licensing as a cost savings - hope to transfer license from SB City; b-u plan is to pull one-time cost from Co Fire replacement funds
 - no cost allocated to software licensing; plan is to pull one-time cost from Co Fire replacement funds
- WAN monthly charges budgeted at County WAN connection rate



Estimate for Training Costs

Training for 12 Dispatchers \$ 107,784.00

- * 6 weeks of training for 12 Dispatchers
- * While the new staff are being trained, 12 existing Dispatchers will work overtime to cover. (1.5) pay rate.

Average rate for Overtime x hours per week x 6 weeks x 12 FTE's
(24.95 x 1.5) x 40 x 6 x 12 = \$107,784.00

Total Cost \$ 107,784.00



Human Resources Costs 15 New Staff

Item	Unit Price	Count	Cost
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DOJ/FBI fee	\$ 64.00	13	\$ 832.00
Physicals for	\$ 121.00	13	\$ 1,573.00

Total Cost \$ 4,355.00



Member Costs for Addition of San Manuel / San Bernardino City

Opening HDGC

Dept	2015/16 CONFIRE Budget	2015/16 CONFIRE Budget w/ BDO	Increase/ Decrease in Budget Cost
Redlands	\$ 566,802	\$ 553,371	\$ (13,431)
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Big Bear	\$ 185,880	\$ 183,702	\$ (2,178)
Upland	\$ 365,527	\$ 355,279	\$ (10,248)
Montclair	\$ 169,911	\$ 164,999	\$ (4,912)
Baker Ambulance	\$ 12,890	\$ 12,926	\$ 36
County Road Dept	\$ 12,114	\$ 12,097	\$ (17)
AMR	\$ 11,677	\$ 11,677	\$ -
Subtotal	\$ 3,741,420	\$ 3,653,178	\$ (88,242)
County Fire	\$ 6,064,607	\$ 7,624,819	\$ 1,560,210
Total	\$ 9,806,027	\$ 11,277,997	\$ 1,471,968



Annual Costs for County Fire and the other CONFIRE members to add San Bernardino City / San Manuel

	Staying at CCC	Opening HDGC	Difference in Cost
The Cost for Other Members	\$ (174,711)	\$ (88,242)	\$ 86,469
County	\$ 1,411,225	\$ 1,560,210	\$ 148,985
Total	\$ 1,236,514	\$ 1,471,968	\$ 235,454

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Annual Costs - Expenditure Sheet Line Items

Staying within CCC		Opening the HDGC	
1	12 Dispatchers		\$ 36,000.00
2		\$ 90,654.00 TriTech Annual Support & Maint - UPGRADE	\$ 250.00
3		ESRI Workstation Lic Support	\$ 7,300.00
4		EMD - ProQA Software ESP Maint	\$ 600.00
5		EMD - ProQA Annual Card Set Maint	\$ -
6		EMD - Aqua ESP Maintenance	\$ 1,600.00
7		Rightfax Premium Support	\$ 750.00
8		Spectracom Net Clock	\$ 250.00
9		Small tools	\$ 1,500.00
10		Headsets	\$ 1,000.00
11		Chairs	\$ 4,500.00
12		Office Supplies	\$ 2,000.00
13		Copy Machine Lease	\$ 450.00
		Food for Emergency Operations	\$ 311,777.24
		8 Dispatchers	\$ 185,902.52
		4 Dispatcher Supervisors	
		AST	
		Total	\$ 553,879.75



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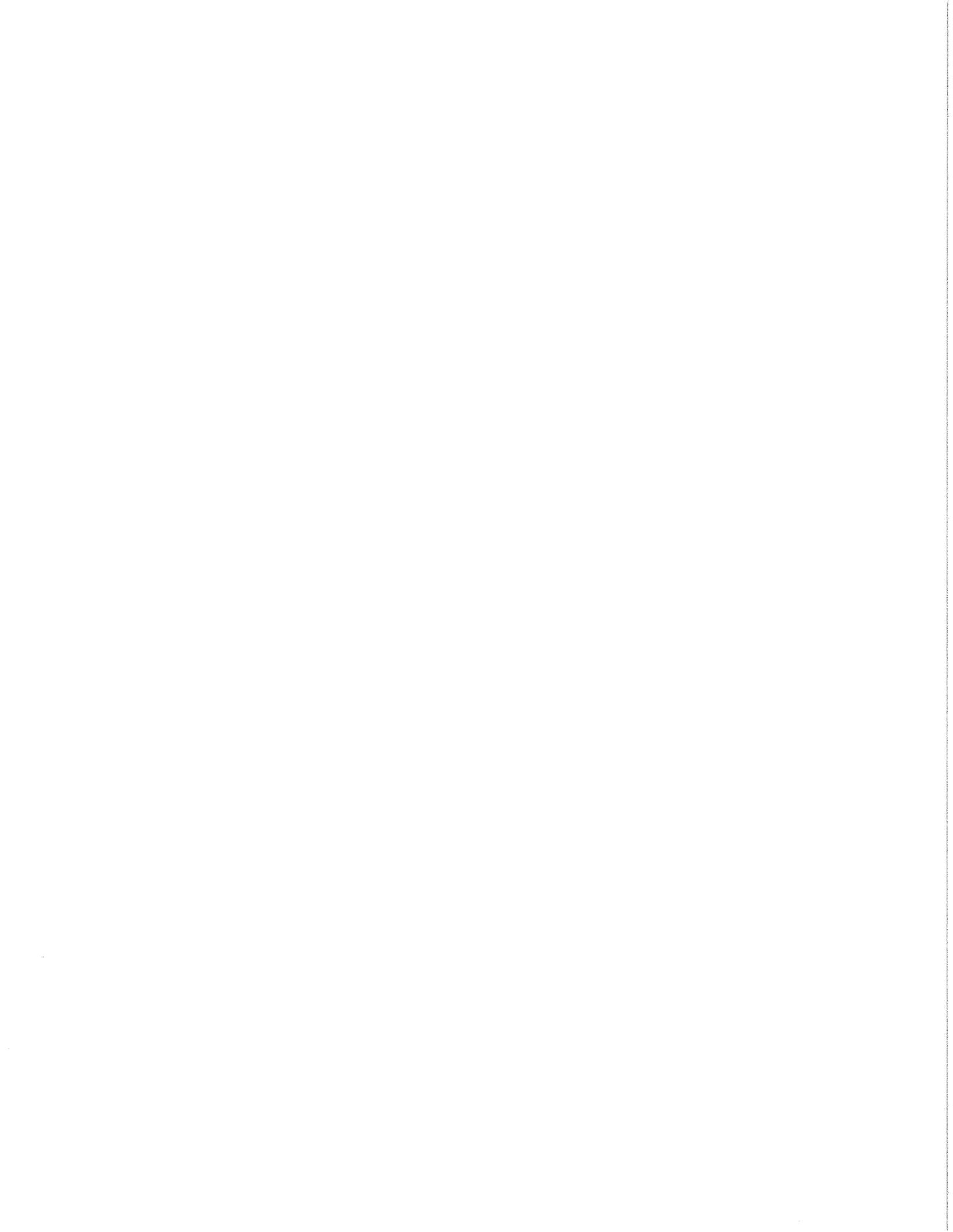
Dispatch Operational Analysis of Added Call Volume



SECOND DRAFT for REVIEW

Submitted By:
Tech/Knowledge, Inc.
Management Consultants

December 1, 2015





Dispatch Operational Analysis of Added Call Volume

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SECOND DRAFT for REVIEW

Section 1: Introduction and Projected Call Volume

1.0 Introduction

CONFIRE is preparing to provide call taking and dispatch services for the City of San Bernardino, a process that could increase the annual incident count by an estimated 18% and their calls handled by 22-30%. The purpose of this operational analysis is to estimate the staffing impact for adding the City's call volume. We are projecting the staffing needs assuming that the CONFIRE communications center continues to operate in their current manner. This is not a productivity enhancement study although our data gathering and analysis should be helpful in future staff planning and process modifications.

We understand that CONFIRE is planning to open the Hesperia facility, currently a non-staffed backup dispatch center, as a staffed center to provide a hot backup location, an option for handling the additional call load from the City and other initiatives.

1.1 Methodology Used and Scope

Tech/Knowledge performed this analysis by physically observing the CONFIRE operations activities at the Rialto dispatch center, collecting two years of operational data from the CONFIRE CAD system, and using various call volume reports produced for us by CONFIRE's MIS staff. Incident data for the City of San Bernardino was obtained from a Consultant's study performed for the City.

We used this information to estimate the 1) additional volume of calls and incidents that would need to be handled at CONFIRE when the City of San Bernardino is added to the current CONFIRE workload 2) current handling rates for calls and incidents by CONFIRE call takers and dispatchers, and 3) staffed positions (call takers, dispatchers and supervisors) required to handle the call and dispatch volumes while maintaining the level of service currently provided to its members and contract agencies.

While projecting workload for this analysis, we noted that after normal working hours the CONFIRE center also assumes communications and dispatch for the San Bernardino County agencies that require them. While this does not normally provide a significant workload, were a major emergency to occur after hours, call volumes for both the fire agencies and the non-fire agencies may increase beyond the call handling capabilities of the staffing at the dispatch centers.

This analysis and discussion are directed to identifying the requirements for staffed positions. How to physically provide the staffing for the position (location, dispatch center layout, etc.) is not specifically addressed as that calls for planning (short and longer term), analysis, tradeoffs, testing and implementation which is beyond the scope of this analysis.

1.2 Executive Summary

The purpose of this operational analysis is to estimate the staffing impact for adding the City of San Bernardino's call and incident volume to the existing volume handled by the CONFIRE communications center in Rialto.

We are projecting the added staffing needs assuming that the CONFIRE communications center continues to operate in their current manner. Specifically this means *we are neither adding nor eliminating Call Taker and Dispatch positions from the current minimum staffing employed*. The minimum staffing currently utilized is identical for the specific hours each day of the week. In the projection for Call Taker positions, we do take into account those hours when the current staffing has capacity to absorb added call volume.

Although this is not a productivity enhancement study, our data gathering and analysis should be helpful in future staff planning and process modifications.

The incident volume for the City of San Bernardino was taken from a Consultant's report containing incident detail for 2012 and 2013. There was no independent verification. There was no indication of how many calls were received to generate the number of incidents dispatched. We projected a range of additional call volume using the ratios 1.5 to 1.0 and 2.0 to 1.0 calls to incidents based upon the experience of several dispatch centers.

The CONFIRE staffing required to handle the additional call volume from the City of San Bernardino is shown on the next page for Call Takers, Dispatchers and Supervisors (See Table 1.) The staffing was estimated based upon the projected volume of calls and incidents to be handled on an hourly, daily and monthly basis. The capability to process calls and incidents is based upon CONFIRE historical CAD data for 2014 and 2015, and how dispatch areas are staffed.

The scope of this analysis is to estimate the required additional staff positions for handling the added call and incident volume. It does not address any increases to the current staffing used to handle the current CONFIRE call and incident volume nor does it extend to recommending how to locate staff or configure dispatch centers.

Shifts	Call Takers			Dispatchers			Supv	Total
	Additional Needed	Current Staffing	Total	Additional Needed	Current Staffing	Total		Total Staff
0000 - 0100	1	3	4	1	5	6	1	11
0100 - 0200	0	3	3	1	5	6	1	10
0200 - 0300	0	3	3	1	5	6	1	10
0300 - 0400	0	3	3	1	5	6	1	10
0400 - 0500	0	3	3	1	5	6	1	10
0500 - 0600	0	3	3	1	5	6	1	10
0600 - 0700	1	3	4	1	5	6	1	11
0700 - 0800	1	3	4	1	5	6	1	11
0800 - 0900	1	3	4	1	5	6	1	11
0900 - 1000	2	3	5	1	5	6	1	12
1000 - 1100	2	3	5	1	5	6	1	12
1100 - 1200	2	4	6	1	6	7	1	14
1200 - 1300	2	4	6	1	6	7	1	14
1300 - 1400	2	4	6	1	6	7	1	14
1400 - 1500	2	4	6	2	6	8	1	15
1500 - 1600	2	4	6	1	6	7	1	14
1600 - 1700	2	4	6	1	6	7	1	14
1700 - 1800	2	4	6	1	6	7	1	14
1800 - 1900	2	4	6	1	6	7	1	14
1900 - 2000	2	4	6	1	6	7	1	14
2000 - 2100	2	4	6	1	6	7	1	14
2100 - 2200	2	4	6	1	6	7	1	14
2200 - 2300	1	4	5	1	5	6	1	12
2300 - 2400	0	4	4	1	5	6	1	11
Source	Table 11	Table 6		Table 12	Table 6			

Table 1- Projected Staffing Required for Combined Call Volume

Notes:

1. Number of Call Takers Added between 0900- 2200 is 1 position rather than 2 if assumption is added calls are at ratio of 1.5 to 1.0 calls to incidents (see Table 11.) This table uses the assumption that added calls are in a ratio of 2.0 to 1.0 calls to incidents for the City of San Bernardino.

2. Number of Dispatchers is based primarily upon current geographic assignments plus adding a new area for the City.
3. There is one radio operator for each hour who handles calls when available. This position is not shown in this table but is included in Table 13.

1.3 Current Operations

The CONFIRE Communications Center currently is configured utilizing a center bay with 6 positions and 5 additional positions around the perimeter of the room. The center bay contains 1 Supervisor console, 4 dispatch consoles in two two-position modules, and a primary Radio Dispatch console. The Call Taker positions are spread around the perimeter.

Call Takers are serviced by an Automatic Call Distribution system that sends calls to the next available position in the queue so they will get calls for all the agencies served. Once a call taking operator has enough information, the call information is passed on to the appropriate dispatcher.

Dispatchers are assigned to the agencies in a specific geographic area, although they have the ability to take calls for another area if there is a major imbalance in activities. This is a typical approach as it provides continuity in operations between the dispatch center and the field units.

Minimum staffing currently utilized is identical for the specific hours each day of the week. Additional staff is brought in whenever increased calls-for-service are either recognized as being necessary for an on-going event or when it can be reliably anticipated that it will be necessary as a result of a weather event, major public event, etc.

The current communications center is very compact with limited room for growth at the console positions. An additional console or possibly two might be able to be squeezed in to accommodate a short-term transition period.

1.4 City of San Bernardino Projected Calls for Service and Incidents

Data direct from the City of San Bernardino's E-911 and CAD systems was not available to us. Incident data for the years 2012 and 2013 detailed by day of week, hour of day and by month was available from a Consultant's study. This data was pieced together by those consultants and seems to represent the best data available.

Since the City data available to us was incident data, we needed to estimate the number of calls that would be received to produce that number of incidents. We also needed to project the volume of calls and incidents by month, day, and hour of the day to project staffing needs. Table 2 summarizes the project call volume using two different assumptions for the ratio of calls to incidents. The source of these assumptions is discussed following Table 2.

	Assumption 1	Assumption 2	Source	Comment
Number of Annual Incidents	28,429 (2013)	28,429 (2013)	Table B-1	Based upon Consultant's Report
Projected # of Calls Annually	56,652	42,532	Table A-1 and A-2	Projected using assumed ratio
Assumed Ratio of Calls to Incidents	2.0 to 1	1.5 to 1		

Table 2 - Assumed Ratio of City of San Bernardino Calls to Incidents

Ratio of Calls to Incidents

To project the call volume at the City of San Bernardino from the known number of incidents, we looked at CONFIRE and other Fire Communications centers as a guide as well as our experience with other fire dispatch centers. In the Table 3 below we show the ratio of Calls to Incidents being experienced at selected agencies.

We chose to project calls for the City of San Bernardino using the ratios of calls to incidents of 1.5 to 1.0 and 2.0 to 1.0.

In an urban area with characteristics like the City, one incident (a fire, a traffic accident, or a medical aid incident) could trigger a number of 9-1-1 calls. Some primary PSAP's use recordings (example "If you are calling about the accident near Exit 19, responders have been dispatched") or other methods to eliminate duplicate calls so a secondary PSAP such as CONFIRE could have a lower ratio of calls to incidents than one without the screening. The majority of these duplicate calls probably are received in less than a ten-minute interval for one very visible incident.

Agency	Ratio – Calls to Incidents	Comments
CONFIRE	1.2 to 1	Jan – Oct 2015 CONFIRE MIS report
Verdugo	2.0 to 1	2014 Annual Report
LA County Fire Dispatch	1.5 to 1	E-mail response to Mike Bell, Nov 2015

Table 3 - Ratio of Calls to Incidents at Selected LA Area Fire Dispatch Centers

Another staff planning consideration for staffing Call Takers is that 82% of the calls received by the City were classified as medical events, whereas, the current rate for CONFIRE is 73%. This higher percentage is a consideration because Call Takers must follow a protocol when handling medical calls-for-service that increases the amount of call handling time they require.

Tables A-1, A-2 and B-1 (see appendix) provide the estimates by hour and month for the additional Calls-For-Service and Dispatched Incidents that will result from adding the City of San Bernardino volume to the center.

Assumed Ratio of Calls to Incidents	Annual Call Volume	Daily Call Volume
Ratio 2 to 1	56,652	143-175
Ratio 1.5 to 1	42,532	110-135

Table 4 - Projected Call Volume Added by City of San Bernardino

Incidents Added

To estimate the number of incidents which would be dispatched for the City of San Bernardino, we had three data points. The City's Consultant report covered two years of data that they had to piece together from various sources – the result being 28,429 incidents dispatched for 2013, and 24,800 for 2012. There was a City annual report showing 28,170 incidents dispatched for 2008. We elected to use the 28,429 annual incidents to project by day, hour and month for CONFIRE to assume. These additional incidents are contained in Table B-1.

1.5 CONFIRE and Combined Calls-for-Service Volume

The last steps involving Calls-for-Service and Incidents projected volumes are to 1) create similar Calls for Service and Incident Tables by Month, and Hour of the Day for CONFIRE so that we can develop staffing for the City's calls and incidents and combine that with the current staffing for CONFIRE calls and incidents. We will check for availability by hour of the day for current staff to handle the City's added volume.

We obtained the CONFIRE call and incident data from reports we requested from CONFIRE MIS for 2014 and 2015 (Jan – Oct 2015.)

We observed that the incident patterns for CONFIRE and the City generally followed the same patterns in terms of low and high volume times of the day and months of the year.

	Annual Volume	Source (See Appendix)	Notes
Calls-for-Service			
CONFIRE Calls-for-Service	192,227	Table A-3	
City Calls- for-Service	42,532 – 56,652	Table A-1 and A-2	Based upon call to incident ratio of 1.5 to 1.0 and 2.0 to 1.0
Total – Combined	234,759 – 248,879		
Incidents Dispatched			
CONFIRE Incidents Dispatched	164,286	Table B-2	
City Incidents Dispatched	28,140	Table B-1	
Total – Combined	192,426		

Table 5 - Combined Annual Call and Incident Volume

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Section 2: Staffing Analysis

2.0 Staffing Analysis

In this section, we analyze the impact of the City of San Bernardino additional call and incident volume separately for the Call Taker, Dispatch and Supervisory positions. The Radio position at one person will not change based upon the volume added.

The current minimum staffing (See Table 6) for the CONFIRE Communications Center is used daily regardless of day of the week or the current month. From midnight to 1100 the staffing is 5 Dispatchers, 3 Call Takers, 1 Radio Operator and 1 Supervisor. From 1100 to 2200 the minimum staffing increases from 10 to 12 positions by adding a Call Taker and a Dispatcher. We are told that additional staff are brought in on an ad-hoc basis to cover either in-process events that require more staffing or planned events or conditions that are expected to require more staffing.

Current Daily Minimum Staffing					
Time of Day	Dispatcher	Call Taker	Radio	Supervisor	Total
0000 - 0100	5	3	1	1	10
0100 - 0200	5	3	1	1	10
0200 - 0300	5	3	1	1	10
0300 - 0400	5	3	1	1	10
0400 - 0500	5	3	1	1	10
0500 - 0600	5	3	1	1	10
0600 - 0700	5	3	1	1	10
0700 - 0800	5	3	1	1	10
0800 - 0900	5	3	1	1	10
0900 - 1000	5	3	1	1	10
1000 - 1100	5	3	1	1	10
1100 - 1200	6	4	1	1	12
1200 - 1300	6	4	1	1	12
1300 - 1400	6	4	1	1	12
1400 - 1500	6	4	1	1	12
1500 - 1600	6	4	1	1	12
1600 - 1700	6	4	1	1	12
1700 - 1800	6	4	1	1	12
1800 - 1900	6	4	1	1	12
1900 - 2000	6	4	1	1	12
2000 - 2100	6	4	1	1	12
2100 - 2200	6	4	1	1	12
2200 - 2300	5	4	1	1	11
2300 - 2400	5	4	1	1	11

Table 6 - CONFIRE Current Daily Minimum Staffing by Position

2.1 Call Taker Staff Additions

The drivers for the Call Taker staffing is the number of calls received per hour and the handle time per call.

In Section 1.4 we discussed projecting the additional call volume from the City of San Bernardino using the call to incident ratios of 2.0 to 1.0 and 1.5 to 1.0. The call handle time based upon a sampling of the CAD data showed that *Call Takers normally handle between 4 and 7 calls per hour during the hours sampled. We chose the 6 calls per hour rate to use for Call Taker staff planning.*

We did not study the call handling process including how long call takers stay on the line with each type of incident under their current guidelines or perform any other assessment on how the call handling rate may be increased. We were told that the Radio Operator is also a call taker when not busy with the radio and that call taking capacity is implicitly considered since we did not

change the current minimum staffing to handle the existing CONFIRE call volume. We note that guidelines often do not allow call takers with other duties to be counted for many evaluation criteria

2.1.1 Additional Dedicated Call Taker Staff Required for Added Call Volume from San Bernardino

This analysis shows the additional call takers required strictly for the added call volume for the City of San Bernardino. This approach isolates the added volume and assumes that whatever staffing the dispatch center currently utilizes to handle existing CONFIRE calls is adequate. These additions are totally independent of how the center is currently staffed.

To select what hourly call volume to staff to across the 12 month period, we elected to staff to the call volume for which 70 % of the number of calls will be less than this and 30% will be more (technically we staffed to the 70 percentile.) Since we have 12 numbers, the 70 percentile will be about the about the 3rd highest number. Example:

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Calls/Hour	6	7	7	5	8	7	8	10	9	7	6	7
70% Calls/Hour							8					

Table 7

The key assumptions for this analysis and the results shown in Table 8 are:

1. Call volume projected from incidents using the ratios of calls to incidents of 2.0 to 1.0 and 1.5 to 1.0. (See Tables A-1 and A-2.)
2. Call handling rate for a Call Taker is 6.0 calls per hour.
3. Staff to handle about the 3rd highest hourly call volume for each hourly period (70th percentile.)

Hour	Call to Incident Ratio of 1.5 to 1.0		Call to Incident Ratio of 2.0 to 1.0	
	Number of Calls at 70 percentile	Minimum Staffed Positions at 6 calls per hour	Number of Calls at 70 percentile	Minimum Staffed Positions at 6 calls per hour
0000 - 0100	4	0.7	6	1.0
0100 - 0200	4	0.7	6	1.0
0200 - 0300	3	0.5	5	0.8
0300 - 0400	3	0.5	4	0.7
0400 - 0500	3	0.5	4	0.7
0500 - 0600	3	0.5	4	0.7
0600 - 0700	3	0.5	5	0.8
0700 - 0800	4	0.7	6	1.0
0800 - 0900	5	0.8	7	1.2
0900 - 1000	6	1.0	9	1.5
1000 - 1100	6	1.0	10	1.7
1100 - 1200	6	1.0	10	1.7
1200 - 1300	6	1.0	10	1.7
1300 - 1400	7	1.2	11	1.8
1400 - 1500	7	1.2	11	1.8
1500 - 1600	7	1.2	11	1.8
1600 - 1700	7	1.2	11	1.8
1700 - 1800	6	1.0	10	1.7
1800 - 1900	6	1.0	10	1.7
1900 - 2000	6	1.0	9	1.5
2000 - 2100	6	1.0	10	1.7
2100 - 2200	5	0.8	8	1.3
2200 - 2300	5	0.8	8	1.3
2300 - 2400	5	0.8	7	1.2

Table 8 - Number of Call Taker Positions Needed for City of San Bernardino Calls

A summary of the results of this analysis is:

Call to Incident Ratio for San Bernardino Assumption	Number of Call Takers Required per Hour
1.5 to 1.0	.5 to 1.2
2.0 to 1.0	.7 to 1.8

Table 9 - Additional Number of Call Takers Handling Only City of San Bernardino Calls

Hence, the answer to the question of “*How many added call takers do we need to exclusively handle the call volume from the City of San Bernardino?*” is 1 to 2 Call Takers based upon the assumption used and the hour of the day. Again, this assumes that the current staff handles all the CONFIRE calls. The next two sections answer the question as to whether there is capacity in the current CONFIRE staffing to handle some of the added call volume from San Bernardino.

2.1.2 Analysis of Current Minimum Call Taker Staffing

We sampled CAD data to determine that *Call Takers handle between 4 and 7 calls per hour. We did not investigate if – during busy periods – the minimum number of call takers are supplemented by others handling calls such as the Radio Operator, the Supervisor, or Part Timers or if processes change out of necessity to meet the higher load.*

We again use the assumption that the number of Call Taker positions is based upon handling a maximum of 6 calls per hour – this time with the CONFIRE hourly call volume. (This does NOT include any call volume from the City of San Bernardino.) The purpose of this analysis is to determine if there are available Call Takers in the current CONFIRE minimum staffing to handle some of the San Bernardino call volume during various periods of the day. The result is shown in Table 10 below:

Hour	Calls at 70 percentile	Minimum Staffed Positions at 6 calls per hour	Current Minimum Staffing Level	Call Taker Positions Need/(Excess)	Calls Handled per Hour by Current Staffing
0000 – 0100	15	2.5	3	(0.5)	5.0
0100 – 0200	12	2.0	3	(1.0)	4.0
0200 – 0300	11	1.8	3	(1.2)	3.7
0300 – 0400	9	1.5	3	(1.5)	3.0
0400 – 0500	9	1.5	3	(1.5)	3.0
0500 – 0600	11	1.8	3	(1.2)	3.7
0600 – 0700	18	3.0	3	0.0	6.0
0700 – 0800	24	4.0	3	1.0	8.0
0800 – 0900	28	4.7	3	1.7	9.3
0900 – 1000	28	4.7	3	1.7	9.3
1000 – 1100	29	4.8	3	1.8	9.7
1100 – 1200	28	4.7	4	0.7	7.0
1200 – 1300	30	5.0	4	1.0	7.5
1300 – 1400	30	5.0	4	1.0	7.5
1400 – 1500	31	5.2	4	1.2	7.8
1500 – 1600	31	5.2	4	1.2	7.8
1600 – 1700	30	5.0	4	1.0	7.5
1700 – 1800	31	5.2	4	1.2	7.8
1800 – 1900	30	5.0	4	1.0	7.5
1900 – 2000	29	4.8	4	0.8	7.3
2000 – 2100	27	4.5	4	0.5	6.8
2100 – 2200	24	4.0	4	0.0	6.0
2200 – 2300	19	3.2	4	(0.8)	4.8
2300 – 2400	17	2.8	4	(1.2)	4.3
Source	Table A-3		Table 6		

Table 10 - Number of Call Taker Staff Positions for CONFIRE Current Call Volume by Hour (Excludes Added SB Calls)

This analysis suggests that CONFIRE Call Taker staff is:

1. Understaffed by 2 positions - for the three hours 0800 thru 1100. This is the busiest period of the day in terms of calls handled per taker (only 3 Call Takers during these hours.) No availability to take added calls.
2. Understaffed by 1 position – for the eight hours 1100 thru 1900 (requires 7.3-7.8 calls to be handled per hour per call taker) No availability.

3. Overstaffed by 1 position – for the six hours from 0000 – 0600. During this period, current Call Takers could handle some of the added calls from San Bernardino.
4. Overstaffed by 1 position – for the two hours from 2200 – 2400. During this period, current Call Takers could handle some of the added calls from San Bernardino.

We again emphasize that there was no detailed analysis of 1) what actual staffing was during these hours, 2) whether call handling is done differently during busy hours (people and processes), 3) Call Takers can handle more than 6 calls per hour if the number of calls is high and 4) the calls handled by the Radio Operator.

2.1.3 Minimum Call Taker Staffing for Adding San Bernardino Call Volume – Assume No Changes Required to Service Current CONFIRE Call Volume

If we assume that the current CONFIRE staffing is sufficient to handle CONFIRE call volume, Table 11 shows how many additional Call Takers are required to handle the additional calls from the City of San Bernardino. This assumption is supported by our being told that CONFIRE with its current minimum staffing with periodic supplementing meets its performance measures.

This table takes into consideration the ability of the current minimum CONFIRE Call Taker staffing to handle additional calls during the time periods 0000 – 0600 and 2200 – 2400.

			CONFIRE	Combined	
Hour	Number of Call Takers to Handle Only SB Calls if:		Current Call Taker Positions Need/(Excess)	Number of Call Taker Positions Needed	
	Call to Incident Ratio of 1.5 to 1.0	Call to Incident Ratio of 2.0 to 1.0		Call to Incident Ratio of 1.5 to 1.0	Call to Incident Ratio of 2.0 to 1.0
0000 - 0100	0.7	1.0	(0.5)	0	1
0100 - 0200	0.7	1.0	(1.0)	0	0
0200 - 0300	0.5	0.8	(1.2)	0	0
0300 - 0400	0.5	0.7	(1.5)	0	0
0400 - 0500	0.5	0.7	(1.5)	0	0
0500 - 0600	0.5	0.7	(1.2)	0	0
0600 - 0700	0.5	0.8	0.0	1	1
0700 - 0800	0.7	1.0	1.0	1	1
0800 - 0900	0.8	1.2	1.7	1	1
0900 - 1000	1.0	1.5	1.7	1	2
1000 - 1100	1.0	1.7	1.8	1	2
1100 - 1200	1.0	1.7	0.7	1	2
1200 - 1300	1.0	1.7	1.0	1	2
1300 - 1400	1.2	1.8	1.0	1	2
1400 - 1500	1.2	1.8	1.2	1	2
1500 - 1600	1.2	1.8	1.2	1	2
1600 - 1700	1.2	1.8	1.0	1	2
1700 - 1800	1.0	1.7	1.2	1	2
1800 - 1900	1.0	1.7	1.0	1	2
1900 - 2000	1.0	1.5	0.8	1	2
2000 - 2100	1.0	1.7	0.5	1	2
2100 - 2200	0.8	1.3	0.0	1	2
2200 - 2300	0.8	1.3	(0.8)	0	1
2300 - 2400	0.8	1.2	(1.2)	0	0
Source	Table 8	Table 8	Table 10		

Table 11 - Additional Call Taker Positions Needed for City of San Bernardino Calls

Methodology and Assumptions:

1. Call Takers to Handle City of San Bernardino Calls Only – As discussed in Section 2.1.1, this is the number of Call Takers to handle San Bernardino calls as if they are dedicated only to these calls. There are two columns to reflect different assumptions as to how many calls will be received from the historical number of incidents the City received. One assumption is that the number of calls will be 1.5 times as many calls as incidents whereas the other assumption is that the multiplier is 2.0.
2. Current Call Taker Positions Need/ (Excess) – As discussed in Section 2.1.2, This column shows whether there is currently capacity to take the additional calls from the City of San Bernardino during a designated hour.

If the Current Call Taker Positions number is negative (in brackets), the number reflects the amount of capacity to handle additional calls. For example the Call Taker number (0.5) is negative so it reflects that .5 of a call taker is available to take additional calls. Specifically, using our assumption that a call handler could comfortably handle 6 calls per hour, this time period reflects that a capacity to handle $.5 \times 6$ calls per hour = 3 calls per hour.

If the number is positive, it indicates that there is no call taking capacity from the current minimum level staffing. For example, the number 1.0 indicates that at a call handling rate 6 calls per hour, there are 6 more calls per hour than can be handled by the current minimum staffing. Example – from 0700-0800 (from Section 2.1.2 Table 10), there are a projected 24 calls per hour from CONFIRE (without any San Bernardino calls) and the staffing is 3 Call Takers. At the handling rate of 6 calls/hour for each Call Taker, call answering capability is = 3 Call Takers x 6 calls/hour = 18 calls. The number of additional Call Takers needed to answer these calls is = 24 calls received – (3 call takers x 6 calls/hour) = 6 calls beyond capacity. To handle these 6 call requires = 6 excess calls ÷ 6 calls/ 1 Call Taker = 1.0 added Call Takers. Hence there is no additional capacity available to handle calls from San Bernardino during this hour.

3. Call Taker Positions Needed – These columns combine the Number of Call Taker positions needed to handle the projected San Bernardino calls with the column indicating availability of Call Taker capacity for those currently handling only CONFIRE calls. The rules for combining the columns are:
 - a. If the Current Call Taker Position Need/(Excess) column is *positive*, *there is no additional Capacity*. The number of Call Takers to handle the City of San Bernardino calls is the number of Call Taker positions to be added. The only rule required is how to round fractional Call Taker needs to a whole number.
 - i. If the number of additional Call Takers is from 1.0 to 1.2 we rounded down to 1.0. 1.2 implies the ability to handle 7 calls/hour which appears within the call handling range from the CAD data.
 - ii. If the number of additional Call Takers is above 1.2, we rounded up to the next integer.
 - b. If the Current Call Taker Position Need/(Excess) column is *negative*, *there is additional Capacity for current Call Takers to take some of the City of San Bernardino calls*. The number of Call Takers to handle the City of San Bernardino calls is the number of Call Taker positions to be added less the current capacity. Example – In the time period from

0100 – 0200, the number of added Call Takers needed is either $= 0.7 + (1.0) = (.3)$ or $= 1.0 + (1.0) = 0$, hence 0 new Call Takers are required under either assumption since there is existing capacity to handle the number of new calls.

2.2 Dispatch Staff Additions

The CONFIRE Center divides the served agencies into 5 dispatch geographic areas. Three of these areas serve the more populated areas and each handles roughly 28% of the annual dispatched incidents. The remaining two areas serve the more remote areas with one handling roughly 5% of the annual dispatched incidents and the other 10%. The additional dispatched incidents generated by the City of San Bernardino will provide a larger volume of incidents than any of the existing areas and could be established as an additional area. Alternatively, the City is surrounded by County facilities and an operational analysis of the actual fire stations may suggest that some of the added areas might be served by the adjacent CONFIRE dispatch area.

This staffing analysis assumes that the City would be implemented as a new dispatch area. Operationally, this new dispatch area will require at least one additional dispatch position be staffed (a minimum of one dispatcher per area.) Table B-1 and B-2 shows the estimated volume of dispatched incidents per hour for the City and for CONFIRE.

Given the potentially complex nature of Fire incidents and the role of dispatch the “duration of a typical event” is not a viable criterion for evaluating the

For this report, *the criteria used for Dispatcher staffing is:*

1. *A minimum of one dispatcher per area and*
2. *A maximum of 4 open incidents per dispatcher*

number of dispatchers required to support a given incident volume. One dispatcher per area was used based on the current staffing model, but during the slower periods that could be reduced if all other guidelines could still be met.

The use of 4 open fire or medical incidents is more loosely defined. Obviously this will be very dependent on the types of incidents at any specific point in time and the capabilities of the actual dispatcher. In most environments it's the supervisor and the individual dispatcher who decide whether another incident can be added to the position. Four was selected as being reasonable for a busy, but not chaotic, environment for a typical distribution of actual fire and medical responses.

Hour	Number of Incidents at 70 Percentile	Number of Dispatchers at 4 Incidents
0000 - 0100	3	0.8
0100 - 0200	3	0.8
0200 - 0300	2	0.5
0300 - 0400	2	0.5
0400 - 0500	2	0.5
0500 - 0600	2	0.5
0600 - 0700	2	0.5
0700 - 0800	3	0.8
0800 - 0900	3	0.8
0900 - 1000	4	1.0
1000 - 1100	4	1.0
1100 - 1200	4	1.0
1200 - 1300	4	1.0
1300 - 1400	4	1.0
1400 - 1500	5	1.3
1500 - 1600	4	1.0
1600 - 1700	4	1.0
1700 - 1800	4	1.0
1800 - 1900	4	1.0
1900 - 2000	3	0.8
2000 - 2100	4	1.0
2100 - 2200	3	0.8
2200 - 2300	3	0.8
2300 - 2400	3	0.8
Source	Table B-1	

Table 12 - Number of Incidents for City of San Bernardino and Number of Dispatchers Needed to Handle

This table shows the number of dispatchers needed to handle the added calls from the City of San Bernardino assuming that a dispatcher may have no more than 4 simultaneous fire or medical calls in progress.

The result is that **one dispatcher assigned to the City's incidents can handle all hourly periods except for the period 1400 to 1500**. Hence adding one dispatcher for the City of San Bernardino incidents also satisfies the criteria that no more than 4 simultaneous incidents need to be handled by that position except for the 1400 to 1500 time period. The current number of Dispatchers is shown in Table 6.

We note that using the 4 simultaneous incidents criteria to estimate how many dispatchers are required to handle current CONFIRE incidents shows that there are periods of under and over utilization in the current dispatcher schedule. This possible underutilization occurs by maintaining 5 dispatchers for coverage of each region during hours when the historical number of incidents dispatched is relatively low.

Since this assignment is focused on how many additional staff are required to handle the City of San Bernardino calls and scheduling dispatchers can be a complex undertaking and beyond the scope of this project, we just point out that dispatch slow times are from 0000 thru 0600. During this time period, it may be that current staff could absorb the San Bernardino incidents but that would mean not dedicating a dispatcher to a single geographic area. (See Table B-3 for the Dispatcher staffing requirements using 4 incidents per hour as the criteria for CONFIRE incidents only.)

2.3 Supervisors

As a general guideline for a busy communications center, a supervisor should be responsible for no more than 15 operational personnel, fewer if that supervisor is also normally working a position. As shown in Section 2.4 Table 13, the minimum staffing for supervised positions with the added personnel is 14 including the radio operator for the 11-hour period from 1100 to 2200, (The period 1400 to 1500 requires 15 supervised positions but realistically, staff will not be increased for a one hour period.)

A single Supervisor should probably be sufficient. Even with additional staffing brought in for exceptionally busy periods, the level should be manageable for a single supervisor. The exception to this is for natural disasters or other longer-term major events that require a constant redistribution of available field resources. Under those conditions, additional Supervisors will generally be needed to maintain a consistent level of service.

2.4 Staffed Position Requirements

Minimum Staffed Positions for Combined Operations					
Hour	Dispatcher	Call Taker	Radio Operator	Supervisor	Total
0000 - 0100	6	4	1	1	12
0100 - 0200	6	3	1	1	11
0200 - 0300	6	3	1	1	11
0300 - 0400	6	3	1	1	11
0400 - 0500	6	3	1	1	11
0500 - 0600	6	3	1	1	11
0600 - 0700	6	4	1	1	12
0700 - 0800	6	4	1	1	12
0800 - 0900	6	4	1	1	12
0900 - 1000	6	5	1	1	13
1000 - 1100	6	5	1	1	13
1100 - 1200	7	6	1	1	15
1200 - 1300	7	6	1	1	15
1300 - 1400	7	6	1	1	15
1400 - 1500	8	6	1	1	16
1500 - 1600	7	6	1	1	15
1600 - 1700	7	6	1	1	15
1700 - 1800	7	6	1	1	15
1800 - 1900	7	6	1	1	15
1900 - 2000	7	6	1	1	15
2000 - 2100	7	6	1	1	15
2100 - 2200	7	6	1	1	15
2200 - 2300	6	5	1	1	13
2300 - 2400	6	4	1	1	12
Source	Table 6 + 1 Dispatcher	Table 11			

Table 13 - Required Minimum Staffing Levels for Each Hour of the Day by Position for the Combined Operations

2.5 Conclusion

The addition of the City of San Bernardino to the CONFIRE Communications Center may have an impact that exceeds the space capacity of the current communications center facility to accommodate for other than a short term.

CONFIRE has already begun planning to make the Hesperia facility an active facility. This study was confined to identifying the number of positions to staff to handle the incremental call and incident volume but not how to achieve the staffing levels.

Addendum

Tables

These are the associated tables:

- **TABLE A-1 –
City of San Bernardino Projected Calls –
Assumes Ratio of Calls to Incidents of 2.0 to 1.0**
- **TABLE A-2 –
City of San Bernardino Projected Calls – Assumes Ratio of Calls to
Incidents of 1.5 to 1.0**
- **TABLE A-3 –
CONFIRE Calls per Hour by Month (Jan 2014 - Oct 2015)**
- **TABLE B-1 –
Estimated City of San Bernardino Daily Incidents by Hour and
Month**
- **TABLE B-2 –
CONFIRE Average Hourly Dispatched Incidents by Month
2014-2015**
- **TABLE B-3 –
Dispatchers Needed at 4 Incidents per Hour for CONFIRE Only
Incidents**

City Data	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Number of Calls at 70 Percentile	Minimum Staffed Positions at 6 Calls per Hour
0000 - 0100	4	4	4	4	4	4	5	5	5	5	5	5	6	1.0
0100 - 0200	4	4	4	4	4	4	5	5	5	4	4	5	6	1.0
0200 - 0300	3	3	3	3	4	3	4	4	4	4	4	4	5	0.8
0300 - 0400	3	3	3	3	3	3	3	3	3	3	3	3	4	0.7
0400 - 0500	3	3	3	3	3	3	3	3	3	3	3	3	4	0.7
0500 - 0600	3	3	3	3	3	3	3	3	3	3	3	3	4	0.7
0600 - 0700	3	3	3	3	3	3	4	4	4	3	4	4	5	0.8
0700 - 0800	4	4	5	4	5	4	5	6	5	5	5	5	6	1.0
0800 - 0900	6	6	6	5	6	6	6	7	7	6	6	6	7	1.2
0900 - 1000	7	7	8	7	8	7	8	9	9	8	8	8	9	1.5
1000 - 1100	8	8	8	8	8	8	9	9	9	9	9	9	10	1.7
1100 - 1200	8	8	9	8	9	9	9	9	9	9	9	9	10	1.7
1200 - 1300	8	8	9	8	9	9	9	9	9	9	9	9	10	1.7
1300 - 1400	9	9	9	8	9	9	9	10	10	9	9	9	11	1.8
1400 - 1500	9	9	9	9	9	9	9	11	10	9	9	9	11	1.8
1500 - 1600	9	9	9	8	9	9	9	10	10	9	9	9	11	1.8
1600 - 1700	9	9	9	8	9	9	9	10	9	9	9	9	11	1.8
1700 - 1800	8	8	9	8	9	9	9	9	9	9	9	9	10	1.7
1800 - 1900	8	8	8	8	9	8	9	9	9	9	9	9	10	1.7
1900 - 2000	7	7	7	7	8	7	8	9	9	8	8	8	9	1.5
2000 - 2100	8	3	8	7	8	8	9	9	9	9	9	9	10	1.7
2100 - 2200	7	7	7	6	7	7	7	8	8	7	7	7	8	1.3
2200 - 2300	6	6	6	6	6	6	7	8	7	7	7	7	8	1.3
2300 - 2400	5	5	5	5	5	5	6	6	6	6	6	6	7	1.2
Daily Calls	149	144	154	143	157	152	164	175	171	162	163	164		
Monthly Calls	4,470	4,032	4,620	4,290	4,710	4,560	4,920	5,250	5,130	4,860	4,890	4,920		
Annual Calls														56,652

Table A-1: City of San Bernardino Projected Calls - Assumes Ratio of Calls to Incidents of 2.0 to 1.0

City Data	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Number of Calls at 70 Percentile	Minimum Staffed Positions at 6 Calls per Hour
0000 - 0100	3	3	3	3	3	3	4	4	4	4	4	4	4	0.7
0100 - 0200	3	3	3	3	3	3	4	4	4	3	3	4	4	0.6
0200 - 0300	3	3	3	3	3	3	3	3	3	3	3	3	3	0.5
0300 - 0400	2	3	3	2	3	3	3	3	3	3	3	3	3	0.5
0400- 0500	2	2	2	2	2	2	3	3	3	3	3	3	3	0.5
0500 - 0600	2	2	2	2	2	2	3	3	3	3	3	3	3	0.5
0600 - 0700	3	3	3	3	3	3	3	3	3	3	3	3	3	0.5
0700 - 0800	3	3	4	3	4	3	4	5	4	4	4	4	4	0.7
0800 - 0900	5	5	5	4	5	5	5	5	5	5	5	5	5	0.8
0900 - 1000	5	5	6	5	6	5	6	6	6	6	6	6	6	1.0
1000 - 1100	6	6	6	6	6	6	6	7	7	6	6	6	6	1.0
1100 - 1200	6	6	6	6	6	6	6	7	7	6	6	6	6	1.0
1200 - 1300	6	6	6	6	6	6	6	7	7	6	6	6	6	1.0
1300 - 1400	6	6	6	6	6	6	7	8	8	7	7	7	7	1.2
1400 - 1500	6	7	7	6	7	7	7	8	8	7	7	7	7	1.2
1500 - 1600	6	6	6	6	6	6	7	8	8	7	7	7	7	1.2
1600 - 1700	6	6	6	6	6	6	7	8	7	6	7	7	7	1.2
1700 - 1800	6	6	6	6	6	6	6	7	7	6	6	6	6	1.0
1800 - 1900	6	6	6	6	6	6	6	7	7	6	6	6	6	1.0
1900 - 2000	5	5	5	5	6	5	6	6	6	6	6	6	6	1.0
2000 - 2100	6	3	6	5	6	6	6	7	6	6	6	6	6	1.0
2100 - 2200	5	5	5	5	5	5	5	6	6	5	5	5	5	0.8
2200 - 2300	5	5	5	5	5	5	5	6	5	5	5	5	5	0.8
2300 - 2400	4	4	4	4	4	4	5	5	5	5	5	5	5	0.8
Daily Calls	110	109	114	108	115	112	123	136	132	121	122	123		
Monthly Calls	3,300	3,052	3,420	3,240	3,450	3,360	3,690	4,080	3,960	3,630	3,660	3,690		
Annual Calls													42,532	

Table A-2: City of San Bernardino Projected Calls - Assumes Ratio of Calls to Incidents of 1.5 to 1.0

Hour	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Number of Calls at 70 Percentile	Minimum Staffed Positions at 6 Calls per Hour	Current Staffing Level
0000 - 0100	13	12	13	13	14	15	17	15	15	14	15	13	15	2.5	3
0100 - 0200	12	11	12	11	11	11	14	12	12	12	14	12	12	2.0	3
0200 - 0300	9	9	9	9	10	11	11	11	11	11	12	10	11	1.8	3
0300 - 0400	9	9	9	8	9	9	9	10	9	9	11	10	9	1.5	3
0400 - 0500	10	8	9	9	8	9	9	9	10	9	10	9	9	1.5	3
0500 - 0600	10	10	10	10	10	10	11	10	10	11	12	11	11	1.8	3
0600 - 0700	17	21	18	18	18	16	17	17	18	17	22	17	18	3.0	3
0700 - 0800	23	25	24	22	23	18	18	21	22	24	28	22	24	4.0	3
0800 - 0900	27	29	29	27	26	21	22	23	25	28	32	27	28	4.6	3
0900 - 1000	28	28	28	28	25	24	26	27	28	28	32	28	28	4.7	3
1000 - 1100	29	29	27	28	27	25	27	27	29	29	31	30	29	4.8	3
1100 - 1200	28	27	28	28	27	29	28	28	28	29	32	27	28	4.7	4
1200 - 1300	30	27	27	31	29	30	29	29	30	29	33	32	30	5.0	4
1300 - 1400	29	28	28	29	29	31	31	29	31	29	33	29	31	5.1	4
1400 - 1500	28	27	28	29	30	30	33	32	32	29	33	29	31	5.2	4
1500 - 1600	28	27	27	29	29	30	32	30	31	30	31	31	31	5.1	4
1600 - 1700	31	28	26	29	29	30	31	30	29	28	31	30	30	5.0	4
1700 - 1800	32	28	29	29	28	31	31	33	30	30	35	31	31	5.2	4
1800 - 1900	28	27	28	28	27	30	29	29	29	32	30	30	30	4.9	4
1900 - 2000	25	23	27	28	28	28	29	30	32	29	26	27	29	4.8	4
2000 - 2100	22	22	23	24	25	31	34	29	27	25	26	22	27	4.4	4
2100 - 2200	21	19	21	22	24	30	33	26	23	22	20	21	24	4.0	4
2200 - 2300	17	17	19	18	19	22	27	22	19	18	19	18	19	3.2	4
2300 - 2400	14	13	16	15	17	19	21	17	17	15	16	17	17	2.8	4
Daily Calls	520	504	515	522	522	540	569	546	547	537	584	535			
Monthly Calls	15,600	14,112	15,450	15,660	15,660	16,200	17,070	16,380	16,410	16,110	17,526	16,049			
Annual Calls													192,227		

Table A-3: CONFIRE Calls per Hour by Month (Jan 2014 - Oct 2015)

Hour	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Number of Incidents at 70 Percentile	Number of Dispatchers at 4 Incidents
0000 - 0100	3	3	3	2	3	3	3	3	3	3	3	3	3	0.8
0100 - 0200	3	3	3	2	3	3	3	3	3	3	3	3	3	0.8
0200 - 0300	2	2	2	2	2	2	2	3	3	2	2	2	2	0.5
0300 - 0400	2	2	2	2	2	2	2	2	2	2	2	2	2	0.5
0400 - 0500	2	2	2	2	2	2	2	2	2	2	2	2	2	0.5
0500 - 0600	2	2	2	2	2	2	2	2	2	2	2	2	2	0.5
0600 - 0700	2	2	2	2	2	2	2	3	2	2	2	2	2	0.5
0700 - 0800	3	3	3	3	3	3	3	3	3	3	3	3	3	0.8
0800 - 0900	3	3	3	3	3	3	3	3	3	3	3	3	3	0.8
0900 - 1000	3	3	3	3	3	3	4	4	4	3	4	4	4	1.0
1000 - 1100	4	4	4	3	4	4	4	4	4	4	4	4	4	1.0
1100 - 1200	4	4	4	3	4	4	4	5	5	4	4	4	4	1.0
1200 - 1300	4	4	4	3	4	4	4	5	5	4	4	4	4	1.0
1300 - 1400	4	4	4	4	4	4	4	5	5	4	4	4	4	1.0
1400 - 1500	4	4	4	4	4	4	5	5	5	5	5	5	5	1.3
1500 - 1600	4	4	4	4	4	4	4	5	5	4	4	4	4	1.0
1600 - 1700	4	4	4	4	4	4	4	5	5	4	4	4	4	1.0
1700 - 1800	4	4	4	3	4	4	4	5	5	4	4	4	4	1.0
1800 - 1900	4	4	4	3	4	4	4	5	4	4	4	4	4	1.0
1900 - 2000	3	3	3	3	3	3	3	4	4	3	3	3	3	0.8
2000 - 2100	3	2	4	3	4	3	4	4	4	4	4	4	4	1.0
2100 - 2200	3	3	3	3	3	3	3	4	4	3	3	3	3	0.8
2200 - 2300	3	3	3	3	3	3	3	3	3	3	3	3	3	0.8
2300 - 2400	3	3	3	3	3	3	3	3	3	3	3	3	3	0.8
Daily Totals	76	75	77	69	77	76	79	90	88	78	79	79		
Monthly Totals	2,280	2,100	2,310	2,070	2,310	2,280	2,370	2,700	2,640	2,340	2,370	2,370		
Annual Total														28,140

Table B-1: Estimated City of San Bernardino Daily Incidents by Hour and Month

Hour	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Number of Incidents at 70 Percentile
0000 - 0100	11	11	11	11	12	13	14	12	13	12	13	11	13
0100 - 0200	11	10	10	10	10	9	11	10	11	11	12	10	11
0200 - 0300	8	8	8	8	9	9	10	10	9	9	11	9	9
0300 - 0400	8	8	8	7	8	8	8	9	8	8	10	9	8
0400- 0500	8	7	8	7	7	8	8	8	8	8	9	8	8
0500 - 0600	9	9	9	9	8	9	9	9	9	9	10	10	9
0600 - 0700	15	18	16	16	16	15	15	16	15	15	19	16	16
0700 - 0800	19	23	21	20	20	16	16	18	19	21	24	19	21
0800 - 0900	23	25	25	22	23	18	18	20	21	24	28	24	24
0900 - 1000	24	25	25	24	23	21	23	23	24	24	27	25	25
1000 - 1100	25	25	23	24	22	22	23	23	24	25	27	26	25
1100 - 1200	23	23	23	23	23	23	23	24	24	25	26	23	24
1200 - 1300	25	23	22	24	23	23	24	23	25	24	26	27	25
1300 - 1400	25	23	23	23	24	25	24	24	25	24	27	25	25
1400 - 1500	23	23	23	23	24	24	25	26	25	24	20	25	25
1500 - 1600	24	23	22	23	23	24	25	24	26	24	26	26	25
1600 - 1700	25	24	21	23	23	23	24	24	24	23	26	26	24
1700 - 1800	26	23	23	23	23	25	25	27	25	25	29	26	26
1800 - 1900	24	23	23	23	22	24	24	23	23	25	26	25	24
1900 - 2000	21	20	22	23	23	23	24	25	25	25	22	23	24
2000 - 2100	19	19	20	21	21	25	27	24	23	21	22	20	23
2100 - 2200	18	17	18	19	20	24	25	22	20	18	17	19	20
2200 - 2300	15	14	16	15	16	18	21	18	16	16	16	15	16
2300 - 2400	13	11	14	13	14	16	17	15	14	14	13	14	14
Daily Totals	446	434	435	433	438	443	461	458	455	452	487	460	
Monthly Totals	13,811	12,164	13,470	12,983	13,567	13,285	14,279	14,194	13,656	13,997	14,625	14,258	
Annual Total													164,289

Table B-2: CONFIRE Average Hourly Dispatched Incidents by Month 2014-2015

Hour	Number of Incidents at 70 Percentile	Number of Dispatchers at 4 Incidents	Current Staffing	Dispatcher Positions Need/(Excess)
0000 - 0100	13	3.2	5	(1.8)
0100 - 0200	11	2.8	5	(2.3)
0200 - 0300	9	2.3	5	(2.8)
0300 - 0400	8	2.0	5	(3.0)
0400 - 0500	8	2.0	5	(3.0)
0500 - 0600	9	2.3	5	(2.8)
0600 - 0700	16	4.0	5	(1.0)
0700 - 0800	21	5.2	5	0.2
0800 - 0900	24	6.0	5	1.0
0900 - 1000	25	6.2	5	1.2
1000 - 1100	25	6.2	5	1.2
1100 - 1200	24	5.9	6	(0.1)
1200 - 1300	25	6.2	6	0.2
1300 - 1400	25	6.2	6	0.2
1400 - 1500	25	6.2	6	0.2
1500 - 1600	25	6.2	6	0.2
1600 - 1700	24	6.0	6	0.0
1700 - 1800	26	6.4	6	0.4
1800 - 1900	24	6.0	6	0.0
1900 - 2000	24	5.9	6	(0.1)
2000 - 2100	23	5.7	6	(0.3)
2100 - 2200	20	5.0	6	(1.0)
2200 - 2300	16	4.1	5	(0.9)
2300 - 2400	14	3.5	5	(1.5)
Source	Table B-2			

Table B-3: Dispatchers Needed at 4 Incidents per Hour for CONFIRE Only Incidents