

Study of Stanislaus Regional 911

Phase I and II Report

STANISLAUS COUNTY, CALIFORNIA

FINAL REPORT



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1. INTRODUCTION AND EXECUTIVE SUMMARY

This document is the Study of Stanislaus Regional 911. This first chapter provides an introduction and an executive summary, concluding with the list of recommendations made throughout this report. .

1. INTRODUCTION.

The Matrix Consulting Group was hired by the City of Modesto and Stanislaus County to conduct a comprehensive review of Stanislaus Regional 911 (SR911). This report provides our evaluation, analysis, findings conclusions and recommendations. The report focuses on a wide range of issues including staffing, workload allocation, costs, and other important issues. To develop this analysis the project team conducted an extensive number of internal and stakeholder interviews (over 40), collected detailed data, performed an employee and customer survey, and remained in regular contact with the project coordinators in an effort to develop a comprehensive understanding of SR911 dispatch operations.

- Interviews with city management staff, county executive leadership, and police/sheriff and fire chiefs to understand key background issues that frame this study and scope of work.
- Interviews with managerial, supervisory, technical and line staff in SR911.
- Interviews with Council members, County Supervisors, SR 911 Commissioners, and other stakeholders.
- Collection and review of data from a wide range of sources, both electronic (e.g. CAD) as well as budget and statistical reports.
- Review of key documents including program budgets, operating policies, and other germane documents.

The following section provides an Executive Summary which is a primer for reading this report in both a cursory or detailed fashion.

2. EXECUTIVE SUMMARY.

To summarize the details of a complex 150-page report in a few pages does not do justice to the important findings, conclusions, and recommendations contained herein. There are far too many topics to summarize succinctly. However, this report is formatted in a manner that allows for a comparatively rapid review as discussed below. The report is developed in ten (10) chapters plus an appendix. These chapters include:

- This Introduction and Executive Summary Chapter.
- A Descriptive Profile.
- Results of the Customer Survey.
- Results of the Employee Survey.
- Staffing Analysis.
- Technology Analysis.
- Organization and Operations Analysis.
- Cost Apportionment Analysis.
- Analysis of Governance Structures.
- Key Operational Issues and Obstacles.
- Appendix.

The report is developed along four key concepts that allow for a core understanding of the contents by focusing on four reporting and formatting approaches. These are:

1. BOLDDED, CAPITALIZED, AND NUMBERED SECTION HEADERS PROVIDING AN OVERVIEW OF CONTENTS WHICH FOLLOWS.

(1) Bolded and Numbered Sub-Headers Which Provide Information on Key Topics of Interest.

KEY FINDINGS & CONCLUSIONS:

- Gray-boxed summaries at the end of key chapters summarizing:
- Key Findings in one box and,
- Key Conclusions in a separate box.

Recommendation: Recommendations are found at the conclusion of many chapters.

By reading only the four areas as noted above, a reasonable understanding of this report's contents can be gleaned in approximately 40 minutes. Furthermore, the report is developed in a fashion that allows the reader to delve deeper into topics or sub-sections of greater interest. While we encourage review of the entire report, we understand this is not practical for a large portion of the potential readership.

3. LIST OF RECOMMENDATIONS IN THE ORDER PRESENTED IN THE REPORT.

The following exhibit provides a list of the recommendations in this report. The chapters within this report should be reviewed for a detailed discussion and analysis of each issue and the background behind each recommendation.

Recommendation #1: Designate appropriate personnel to interface with the State NG9-1-1 project and to participate in the project as much as possible. Plan for receiving NG 9-1-1 capabilities including text and digital media, by developing policies and procedures and develop training. Work with other PSAPs that accept NG 9-1-1 technology to help to understand any potential impact to SR911 resources.

Recommendation #2: Continue to work with Tiburon to achieve the desired features and functionality expected from the product.

Recommendation #3: Perform a thorough legal review of all current Tiburon contracts and agreements. The review should identify all terms and conditions that Tiburon should be meeting. An analysis of the state Tiburon's meeting those conditions should be documented.

Recommendation #4: Review SR911's internal project management structure and process for the Tiburon implementation and problem resolution tracking. The output of the contractual review, and the definition of key existing issues, should be incorporated into a formalized and structured process for problem resolution.

Recommendation #5: Set a specific date that, if SR911 management and Board believe that Tiburon has not yet met its contractual obligations, or if there remains irresolvable and extensive dissatisfaction with Tiburon as the CAD product to achieve SR911's operational requirements, prepare for and release a Request for Proposal to replace the Tiburon system.

Recommendation #6: In the event Tiburon CAD replacement is warranted, explore legal action alternatives whereby SR911 legal counsel identifies and concurs with any potential contractual liability that can be recompensed.

Recommendation #7: Initiate a planned radio equipment replacement policy, including a process and a funding mechanism. If the agencies are interested in a coherent, interoperable radio system, then governance and funding structures for a regional radio system should be explored.

Recommendation #8: Replace the existing Orbacom Console equipment with modern technology. Develop a Request for Information to estimate the cost, acquire the funding, and release a Request for Proposal for the acquisition of the system.

Recommendation #9: Work with the California Highway Patrol, acquire the wireless call data and analyze the probable workload and technology impacts with the framework of the RED study. Position SR911 to accept the calls, as practical, to avoid unnecessary call transferring.

Recommendation #10: Review all 10 digit lines, remove or consolidate 10 digit lines as possible. Determine if SR911 is handling calls that may be directed to other departments or agencies and, where feasible, establish new call handling policies for those lines. Apply new phone system capabilities to distinguish between emergency and non-emergency calls by ring types and visual flagging, as much as possible.

Recommendation #11: Eliminate the co-directorship model at SR911 and civilianize the Director position.

Recommendation #12: Re-organize administrative and technical support around a Support Services Division that reports to the Office Manager. All Technology staff would be assigned to this new Support Services Division.

Recommendation #13: Maintain existing first-line dispatch supervision levels.

Recommendation #14: Maintain existing administrative support levels.

Recommendation #15: Eliminate the (third) vacant radio/telecomm position for the foreseeable future.

Recommendation #16: Authorize two (2) E911 call-taking Fixed-Posts on a 24/7 basis.

Recommendation #17: Authorize a “half-time” Fixed-Post for administrative call support from 0900-2100 hours.

Recommendation #18: Explore 3-1-1 and 2-1-1 call-taking options with SR911 partners in the future to potentially off-load a small portion of work from SR911.

Recommendation #19: Upon implementing and staffing new Fixed-Post call-taker positions, reduce dispatch Fixed-Post positions from 6.5 to 5.5 positions.

Recommendation #20: Upon implementing and staffing new Fixed-Post call-taker positions, staff only one (1) fire Fixed-Post Position from 2200-1000 hours. Modify fire dispatch 12-hour shift schedules to 2200-1000 hours and 1000-2200 hours.

Recommendation #21: Eliminate the “half-time” MPD Wants and Warrants Fixed-Post. If desired, maintain on an ancillary support (and payment) model.

Recommendation #22: To staff SR911 call-taker and dispatch Fixed-Post positions, determine whether Option #1 or Option #2 best meets SR911’s needs based on the Four Framing Elements concept. It is suggested Option #2 be given serious consideration despite its minor increased SR911 Operations cost impact compared to Option #1.

Recommendation #23: Maintain the existing 12-hour shift schedule with start/end time revisions previously noted.

Recommendation #24: SR911 should utilize the best management practices check-list provided to identify key areas in which it wishes to implement a best practice initiative.

Recommendation #25: Eliminate use of the existing SR911 Cost Apportionment Model for FY 2015/16 and beyond.

Recommendation #26: For any future SR911 cost apportionment model, formally adopt a guiding principle (criteria) at the executive management and Commission level that ensures the model has three key characteristics: 1) The public safety clients believe that dispatch costs are equitably distributed, 2) There is an ability to easily explain and audit the charge-back methodology to the public safety clients and others, and 3) There is consistent charge-back approach for all public safety agencies served by SR911.

Recommendation #27: Ensure any adopted SR911 cost apportionment model includes, for all user agencies, a workload variable of either incidents and/or community generated calls for service.

Recommendation #28: For SR911 fiscal year budget development, use the prior calendar year's workload variables (as opposed to fiscal year) for the model's development.

Recommendation #29: Allow SR911 customers to pay directly for ancillary services that can be specifically attributed to that agency. This would essentially be paying directly for identifiable Fixed-Posts for that agency that are dedicated exclusively to work for that agency.

Recommendation #30: Adopt the presented CAD Incident and calls for service cost apportionment model for SR911 beginning in FY 2015/16.

Recommendation #31: Revisit the cost apportionment model for potential revision every four years.

Recommendation #32: Maintain existing SR911 governance structure and modify, as necessary, within the terms and conditions of the 1999 Joint Exercise of Power Agreement.

Recommendation #33: Include at least three (3) SR911 Commission-appointed representatives to act as joint negotiators with SR911 unions, supporting Stanislaus County as the employee of record. One of these positions should be the County's identified union negotiator.

Recommendation #34: Given the impact of any SR911 customer leaving the agency, prior to the proposed departure of any SR911 service partner, an independent evaluation should be conducted regarding optional dispatch service opportunities available to the departing agency compared to SR911 services. This should be sponsored and paid for jointly by SR911 and that agency and should incorporate short, mid, and long-term costs and return-on-investment calculations.

Recommendation #35: SR911 should undertake various best management practices initiatives to become a best-in-class dispatch service provider.

Recommendation #36: Within the next 24-months SR911 should seek to become CALEA (Commission on Accreditation for Law Enforcement Agencies, Inc.) accredited and/or NAED (National Academy of Emergency Dispatchers) ACE (Accredited Center of Excellence) certified.

2. DESCRIPTIVE PROFILE

In the following pages is provided a descriptive of the organization and staffing of the Stanislaus Regional 911 (SR911). It summarizes our understanding after site visits to SR911 in August, September and October, 2014.

1. INTRODUCTION TO STANISLAUS REGIONAL 911.

The chapter, which follows, provides an Organizational Profile of the SR911 communications center. The purpose of the Profile is to document the project team's understanding of the Public Safety Answering Point (PSAP) organization, allocation of staff by unit and function, and principal assigned roles and responsibilities of staff. Data contained in the Profile were developed based on the work conducted by the project team, including:

- Dozens of interviews with supervisory and staff positions on location at SR911 including managers, senior staff, etc.
- Interviews with executive representatives for agencies served by SR911 including the communities of Modesto and Stanislaus County.
- Collection of various descriptive data describing organization and staffing.
- Documentation of key roles and responsibilities of staff assigned to SR911.

The Descriptive Profile does not attempt to recapitulate all organizational and operational facets of SR911; these are discussed throughout the report. In this chapter the structure of this Descriptive Profile is as follows:

- Description of staff positions, by classification, and description of appropriate reporting relationships.
- Summary descriptions of key roles and responsibilities of staff. The responsibility descriptions provided in the Profile also summarize the team's understanding of the major programs and service activities to which staff are currently assigned. It should be clearly noted that responsibility descriptions are not intended to be at

the “job description” level of detail. Rather, the descriptions are intended to provide the basic nature of the job.

- Organizational structure with actual staffing levels (as opposed to those presently authorized).

These data were reviewed for accuracy and completeness by relevant staff at SR911. Comments and corrections generated from staff reviews were incorporated into information presented herein.

2. ORGANIZATIONAL STRUCTURE OF SR911.

The following provides an overview of the organization, staffing and responsibilities of SR911.

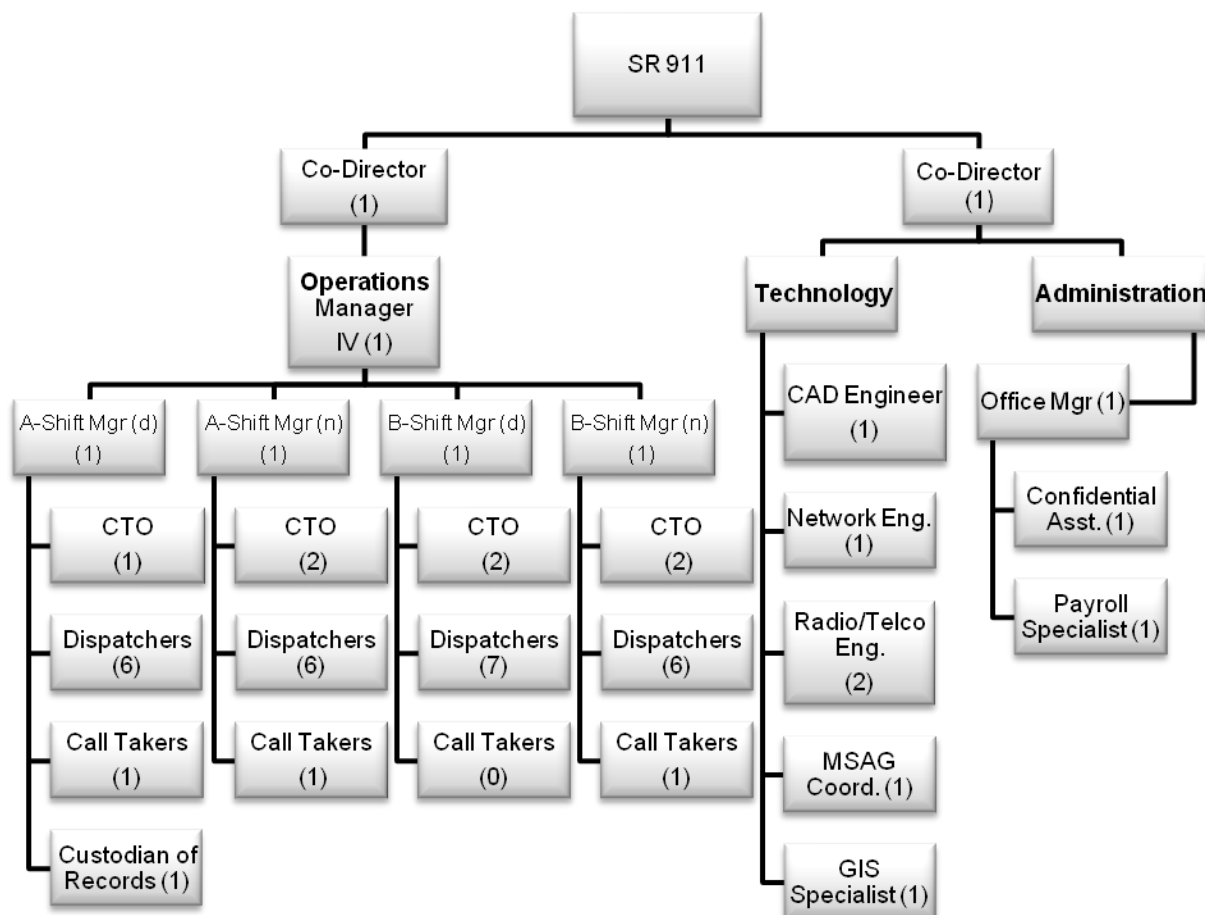
(1) Center Organizational Structure.

SR911 has 59 authorized/funded positions of which 6 are currently vacant, 4 Emergency Dispatcher, 1 Radio/Telco Engineer and 1 Full Time Call Taker. With respect to actual staffing levels, there are presently 4 shift managers, 34 Dispatcher/CTO positions¹ and 3 call-takers assigned over four shifts. Remaining full-time positions are dedicated to managerial, technical or administrative support functions. Additionally, there are 8 active part-time call takers that provide coverage assistance.

The following organization chart reflects actual trained positions currently assigned (excluding part-time call takers) in the SR911:

¹ The Custodian of Records is a 35th dispatch position that can serve in that role, as required.

Actual Full-Time Staffing Levels at Time of Study – SR911



(2) Staff Positions.

The extended table, which follows, provides summary descriptions of the roles and responsibilities of staff. These tables also describe various aspects of operations.

Unit / Position	No. of Positions		Responsibilities
	Auth.	Current	
Co-Directors	1.5	1.5	• Reports to the SR911 Commission. • Directly supervise the Manager IV, technical staff, and Office Manager positions. • Plans, organizes, and directs the activities of the SR911 to include oversight of budget, administration, operations, technology and compliance with professional standards. • Investigates and resolves internal/external complaints. • Interfaces regularly with SR911 service customers, including Chiefs, managers, and technical/administrative staff. • Interfaces with SR911 labor leaders on periodic basis. • Provides oversight and participates in monthly Advisory Committee and monthly (Board) Commission meetings, responding to inquiries and directives. Full-time Director, representing law enforcement, continues to serve in an ancillary capacity as the Sheriff's Air Support Unit Commander and Homeland Security Coordinator. • Part-time Director, representing fire, serves 20-hours per week.
Manager IV (Operations Manager)	1.0	1.0	• Reports to the SR 911 co-directors. • Directly supervises the four (4) SR911 Shift Managers. • Provides operational oversight of all dispatch-related functions. • Interfaces regularly with SR911 technical and administrative staff. • Develops policies and procedures, training regimens, performance objectives, tracks outputs to established standards and manages dispatch operation consistent with existing practices. • Performs HR-related duties, as needed. • Periodically monitors "floor" activity. • Periodically will staff a floor dispatch console. • Addresses discipline and performance issues. • Interfaces with union leadership. • Prepares reports, as directed. • Performs special projects, as assigned. • Investigates and resolve external customer complaints.

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Unit / Position	No. of Positions		Responsibilities
	Auth.	Current	
Shift Managers	4.0	4.0	• Reports to the Operation Manager. • Scheduled on A (0600-1800) and B (1800-0600) shift, both night and day, 3-days on/3-days off. Will overlap shifts in the event of absence of counterpart manager. • Directly supervises the floor, including dispatchers, communications training officers, and call takers. • Performs QA/QC during assigned shift. • Manages shift schedule including scheduled and unscheduled leave requests. • Provides training and conducts annual performance reviews. • Monitors all CAD station activities in office. • Works with and meets allied agencies to address issues and resolve problems. • Periodically listens to taped calls for QA/QC. • Answers E911 calls during peak periods. • May break staff during shift. • Performs various ancillary duties such as scheduling part-time call takers, training program assistance, etc.
Custodian of Records (Dispatcher)	1.0	1.0	• Dispatcher position primarily performing as a Custodian of Records, but will act as a dispatcher in an ancillary, as-needed role. • Reports to a designated Shift Manager. • Fulfills records requests for various state and local public entities as per legal requirements and internal policy. • Listens to audio recordings when necessary to fulfill requests made from outside agencies, editing them as necessary to ensure that all communication relating to the incident(s) in question is preserved in the exported file. • Retrieves information from the CAD database as per records requests. • Transfers exported information to a physical CD-ROM, which is then sent to the requesting agency. • Prioritizes records requests from different agencies according to their need and expected turnaround time. • Meets with District Attorney's Office quarterly, and corresponds as needed. • Primarily works a 10-hour shift four days a week. Sometimes works an 8-hour shift five days a week.
Communications Training Officer (CTO) Dispatcher	8.0	7.0	• Performs primarily as Dispatcher with additional responsibilities: • Provides in-house academy training for newly hired staff. • Provides probationary oversight for newly trained staff. • Provides periodic as-needed/as-requested mentorship to dispatcher and call takers. • Provides formal supervision / work direction in the absence of Shift Managers.

Unit / Position	No. of Positions		Responsibilities
	Auth.	Current	
Dispatcher	31.0	27.0	• Reports directly to the assigned Shift Managers. • As needed, interfaces with assigned CTOs. • Serve as a law enforcement dispatcher or fire dispatcher dependent upon Pod assignment: • Fire Dispatch (2 Fixed-Post positions) – Dispatches all medical and non-medical calls requiring response from the Fire Departments. – Scheduled on A (0600-1800) and B (1800-0600) shift, both night and day, 3-days on/3-days off. – Generally, one position assigned to MFD, one position to all other fire district agencies. – Tracks fire personnel and coordinates move-ups to ensure appropriate regional coverage. – Maintains radio contact with field staff. – Coordinates with Law Dispatchers, as necessary. – Acts as overflow/back-up call takers, as required. – Performs other duties, as assigned. • Law Enforcement Dispatch (4-5 Fixed-Post positions) – Dispatches all police and sheriff-related calls requiring a response from law enforcement. – Scheduled on A (0600-1800) and B (1800-0600) shift, both night and day, 3-days on/3-days off. – Generally 2 positions assigned MPD; 2 positions Sheriff and City of Newman; 1 position from 1400-0200 for MPD wants/warrants. – Enters all officer initiated incidents into CAD to include pedestrian and traffic stops. – Conducts wants, warrants, license, and other checks on persons of interest and vehicles. – Maintains radio contact with field staff. – Coordinates with Fire Dispatchers, as necessary. – Performs other duties, as assigned.
Call-Takers	4.0	4.0	• Reports directly to the assigned Shift Managers. • As needed, interfaces with assigned CTOs. • Call-takers respond to incoming landline, VoIP and cell phone traffic. – Answers all emergency and non-emergency calls for service. – Obtains requested information from reporting party and transfers information to dispatcher staff. – Transfers/Hands-off appropriate medical calls to American Medical Response for dispatch of their assets.
Part-time Call-Takers	8.0	8.0	

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Unit / Position	No. of Positions		Responsibilities
	Auth.	Current	
Office Manager	1.0	1.0	• Reports to Co-directors. • Performs budgeting and general accounting for SR911. • Develops and monitors SR911 budget. • Manages and provides oversight for internal service and vendor contracts. • Performs purchasing activities for goods and services including oversight of purchase requisition, processing liability certificates, etc. • Manages keys and proximity cards. • Oversees any Accounts Payable and Receivable efforts, including making deposits. • Conducts payroll audits. • Participates in various HR functions in concert with Confidential Assistant and Operations Manager. • Performs special projects, as assigned.
Confidential Assistant	1.0	1.0	• Reports to Office Manager and receives guidance from Co-directors. • Performs SR911 recruitment using NeoGov website. • In concert with County HR, performs job application review. • Prepares and sends acceptance and rejection letters. • Arranges candidate interviews. • Performs administrative background checks. • Schedules and oversees 'CitiCall' pre-employment testing and screening process for potential candidates. • Performs P-card (credit card) coding. • Prepares Commission agenda and takes/publishes minutes. • Provides secretarial support to co-directors. • Maintains personnel files. • Performs special projects, as assigned.
Payroll Specialist	1.0	1.0	• Reports to Office Manager. • In coordination with County, prepares (sophisticated) SR911 payroll. • Resolves potential reporting discrepancies with staff. • Performs Accounts Payable functions. • Supports Office Manager in processing purchasing functions. • Performs attendant clerical duties and responsibilities. • Performs special projects, as assigned.

Unit / Position	No. of Positions		Responsibilities
	Auth.	Current	
GIS Specialist	1.0	1.0	• Reports directly to Co-directors. • Creates and maintains GIS shapefiles, including those detailing the geographical boundaries of various jurisdictions, • Serves as the primary contact point for the addition of new address points, which are then reflected in updates to the street address shapefiles. • Provides relevant agencies, such as the Stanislaus County Department of Public Works [check] with updated data, corresponding as necessary. • Develops the resources contained within the physical map books distributed to dispatchers and other public safety personnel. • Ensures the accuracy of geographical data files as they relate to various factors which impact the travel time of units in the field. • Provides geospatial analysis relating to unit response times as directed by other agencies. • Works 8-hour shifts five days a week.
CAD Administrator	1.0	1.0	• Reports directly to Co-directors. • Maintains and administrates the Computer Aided Dispatch system, including all related functionality. • Develops and maintains the linkability of data from the CAD system to external databases and servers. • Communicates with Tiburon as needed regarding various issues that arise, as well as other relevant firms that have been contracted to provide technology software. • Corresponds with firms that have received contracts for the center's CAD-related technology. • Assists and develops projects generated from the center's management. • Provides cost estimates and feasibility assessments as needed. • Works in coordination with the CAD Engineer to ensure the proper maintenance all systems, cross-training as needed. • Incorporates emerging technologies and systems infrastructure as necessary and as directed by the center and County. • Remains actively on-call for a period of 7 consecutive days in alternating weeks with the Network Engineer in order to deal with any emergency technical problems that arise during non-working hours. • Primarily works 8-hour shifts five days a week.

Unit / Position	No. of Positions		Responsibilities
	Auth.	Current	
Network Engineer	1.0	1.0	• Reports directly to Co-directors. • Maintains all desktops and laptops, including the 21 CAD workstations. • Maintains and supports to overall functionality of the center's Local Area Network (LAN) and Wide Area Network (WAN) systems and infrastructure. • Provides application and hardware support to employees of Stanislaus County Regional 911, as well as to constituent member agencies. • Maintains routers and all other network infrastructure used by the center, ensuring maximum levels of uptime. • Maintains the all virtualization capabilities of computer and network hardware, including the center's intranet. • Assists and develops projects generated from the center's management. • Provides cost estimates and feasibility assessments as needed. • Corresponds with firms that have received contracts for the center's technology. • Maintains and updates the center's firewall, ensuring the security of all data that is stored and transmitted. • Works in coordination with the CAD Engineer to ensure the proper maintenance all systems, cross-training as needed. • Remains actively on-call for a period of 7 consecutive days in alternating weeks with the CAD Administrator in order to deal with any emergency technical problems that arise during non-working hours. • Assists personnel in completing password reset requests as needed. • Primarily works 8-hour shifts five days a week.
MSAG Coordinator	1.0	1.0	• Reports directly to Co-directors. • Primary responsibility for the timely maintenance of the master street address guide. • Corresponds and coordinates with telecom companies and VOIP providers as needed. • Participates in monthly conference calls with other county GIS coordinators. • Ensures the integrity of geographical shapefiles, kindling the boundaries of various zones and line data. • Trains and assists the GIS Specialist as needed. • Works 8-hour shifts five days a week.

Unit / Position	No. of Positions		Responsibilities
	Auth.	Current	
Associate Engineer II	3.0	2.0	• Reports directly to Co-directors. • Maintains and develops radio and telephone equipment and infrastructure in the field, as well as in the center. • Assists with the implementation of both minor and major upgrades to the radio and telephone infrastructure within the jurisdiction of Stanislaus County Regional 911. • Assists constituent agencies in completing projects as requested, both within and outside of contracts. • Prioritizes and manages workload. • Provides technical analysis as needed by both the dispatch center and its constituent agencies. • Coordinates, consults, and assists work crews in the field on behalf of the dispatch center. • Documents and reports on engineering problems, recommending plans of action to troubleshoot and/or fix the issues at hand. • Assesses the feasibility of various technical projects as directed by management and other agencies, providing analysis of technical needs, as well as basic cost implications. • Address other sub-systems such as door controls, CCTV, and other electrical/mechanical/technical requests for service as requested. • Works 8-hour shifts five days a week.

3. TECHNOLOGY.

The following table illustrates the project team's understanding of the technology in use at SR911. Information provided in this table was obtained from documentation provided by SR911 and interviews with operational and technical personnel.

Technology	Current System	Planned Change	Notes
Administrative Network Servers	Domain Controllers, FTP Server, Proxy, NAS, Netmonitor – Microsoft Server 2003 R2; VMWare/VSphere – Version 5.5	In process of upgrading domain controllers to Server 2012	
Administrative Network Hardware	Firewalls: Cisco ASA 5550, 5505; Servers: HP-DL380 G5, ML370, DL360 G8; Switches: HP Pro-Curve 2910, Cisco 2960G Series; Storage: Nimble CS210 Nimble; Desktops: HP		

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Technology	Current System	Planned Change	Notes
CAD Software	Tiburon DispatchNow Implemented (See Notes) June of 2012;		System is operational and working with Tiburon to resolve outstanding issues. The system is currently being upgraded.
CAD Hardware	Servers: Stratus and HP; Switches: Cisco and HP; Desktop: ClearCube Blades; OS: Server 2003 R2 Stratus 6200 and 4400 HP DL380 G5; Desktop OS: XP		
CAD Interfaces	Interfaces: RMS, AVL, E911, TDM-150, CLET's Message Switch, Hiplink, Air Pollution.		
Radio System(s)	Multiple Systems with Audio and Control paths to Orbacom console	Moving to 700/800 MHz P25 System; New system will have a Tait infrastructure (In the process of installation) 5 site, 5 channel Simulcast system.	Please later Diagrams for current system design.
Radio Consoles	Orbacom (now IPC) TDM150, 32 channels, 12 positions. Desktop OS: XP		Orbacom has reached "end of life". System no longer manufactured nor supported.
Regional Microwave System	3 paths: Harris 6 GHz Microwave, 8 T1 capacity between SR911 and Mt. OSO; Airstream 4.9 GHz, 18 megabit, SR911 and Modesto Jail site; Airstream 4.9 GHz, 18 Megabit between Modesto Jail Site and OSO (as a backup path)		Please see later diagram.
911 Phone System	9-1-1 Inc./Comdial-FXII	Phone system is in the process of being replaced with a new Vesta 4.0 system (now owned by Airbus DS). Implementation is underway with a due date set for early December 2014.	
911 Trunks	CAMA 20 trunks, lines are all conventional (CAMA) circuits.		
Dispatch Headsets	Plantronics Corded and Wireless Wireless Model: CA12CD		
Police RMS	Modesto PD uses Tiburon RMS		

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Technology	Current System	Planned Change	Notes
Fire RMS	Zoll system		
Recording	Stancil OS: Server 2003 R2 Admin Client 2.4.11		
Mobile	Almost all users utilize Verizon. Each agency provides their own service and support for Mobile data. Some agencies contract with County Strategic Business Technology division (SBT) for support.*		
GIS/Mapping	ESRI 10.2.2 ArcGIS Online, Extensions: 3D Analyst; Network Analyst; Spatial Analyst; Workflow Manager; Maplogic Layout Manger 4.1		
Fire Station Alerting	VHF Radio based 2-tone alerting system. System was developed "In-house."		
AVL	AVL location information is acquired over existing mobile data equipment and transported over the mobile data infrastructure (mostly Verizon) to CAD.		
Paging	Hiplink is used and fed by a CAD interface.		
EMD	Medical calls are transferred to AMR. AMR performs all medical questioning/ determination (beyond the answer of the call)		SR911 must determine the nature of the call and remain on the line when additional services may be needed such as Law and/or Fire under certain circumstances.
Netclock	Spectracom NTP Rev 4.2.0		
Emergency Power	UPS: Eaton Powerware Model # 9315 Generator: Generac		

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Technology	Current System	Planned Change	Notes
Back-up Facility	Located at 2727 3 rd Street, Ceres CA. Backup Center has 2 PD; 2 SO; 3 Fire, and 4 call taker positions.		Each dispatch position has CAD Radio and Phone. Initiation of the back-up facility requires having the Telephone Company transfer the 911 calls to that location. It also requires an individual, manual, forward of all required Administrative lines to the lines at the facility.

*The County Strategic Business Technology (SBT) division provides information technology services and support for County departments and divisions. SR911 utilizes the email hosting services. SBT services also include a number of IT services and support functions. Some agencies use or contract with SBT for Mobile Data support and other technology services.

3. RESULTS OF THE CUSTOMER SURVEY

The Matrix Consulting Group conducted a survey of the Public Safety Agencies (users) that use the services provided by Stanislaus Regional 911 (SR911) in order to gauge their views on a variety of issues. Surveys were distributed via each agency's executive staff to employees of the law enforcement and fire service providers within Stanislaus County. Respondents at Public Safety Agencies were emailed a link to the survey and approximately 217 responses were received.

1. INTRODUCTION TO THE PURPOSE AND STRUCTURE OF THE SURVEY.

The survey consisted of two sections. The first section contained 16 statements to which respondents were asked to select one of the following responses: "strongly agree," "agree," "disagree," and "strongly disagree." For those that were neutral or had no opinion, these additional selections were also provided. The statements in this section of the survey were designed to provide an understanding of the perceptions, attitudes, and opinions of SR911 users with respect to the following key areas:

- **Level of Service to the Community:** Users responded to statements about the level of service provided to the community and the agency by SR911.
- **Dispatch Processes & Classifications of Calls:** Users responded to statements about process for dispatching emergency and non-emergency calls and the classification of calls.
- **Staff Training & Responsiveness:** Users responded to statements concerning responsiveness of SR911 personnel and training levels.
- **SR911 Interagency Communication:** Users were asked to respond to statements in relation to information technology (IT) and communication systems integration and also communication / teamwork between the agencies.

In the second section respondents were asked to provide narrative responses regarding the current strengths and opportunities for improvement for SR911.

While the survey was confidential, respondents were asked in the beginning to indicate their type of service agency, the type of public safety role, and identify their public safety agency. The following tables present the number of respondents by whether they are Fire or Law Enforcement, Type of role (full vs. part vs. volunteer), and the specific public agency.

Type of Service Agency	No. of Respondents	% of Total Responses
Fire	37	17%
Law Enforcement / Other	180	83%
Total	217	100%

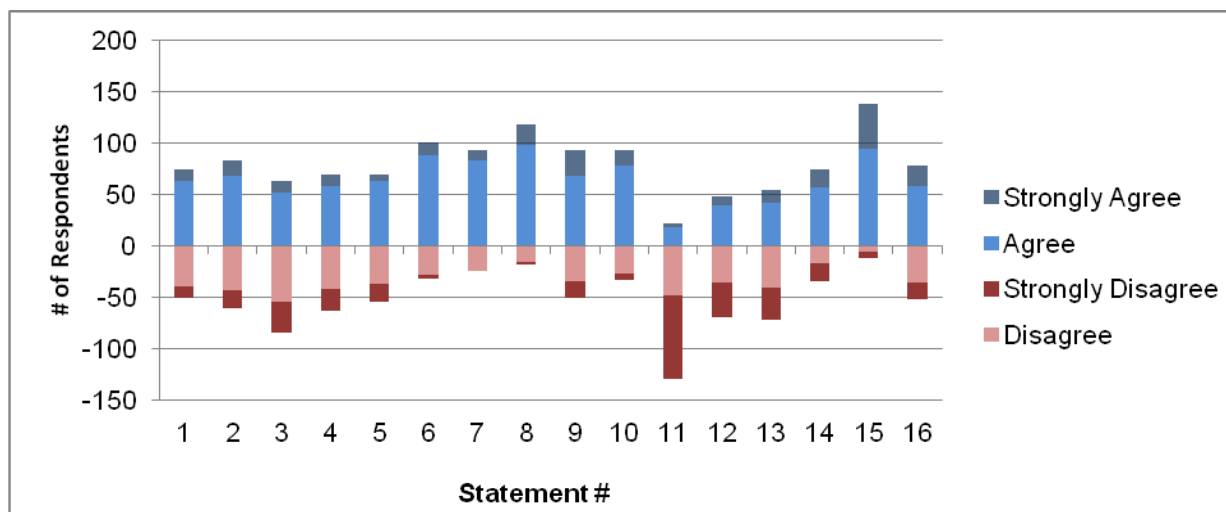
Type of Public Safety Role	No. of Respondents	% of Total Responses
Full-Time	190	88%
Part-Time	19	9%
Volunteer	8	3%
Total	217	100%

Agency	No. of Respondents	% of Total Responses
Burbank – Paradise Fire District	1	0.5%
Ceres Emergency Services	0	0%
Denair Fire District	0	0%
Hughson Fire Protection District	0	0%
Keyes Fire District	3	1%
Modesto Fire Department	28	13%
Modesto Police Department	140	65%
Mt. View Fire District	0	0%
Newman Fire Department	0	0%
Newman Police Department	10	5%
Oakdale City Fire Department	0	0%
Oakdale Rural Fire District	0	0%
Patterson City Fire Department	1	0.5%
Salida Fire Protection District	1	0.5%
Stanislaus Consolidated Fire Protection District	1	0.5%
Stanislaus County Fire Warden	2	1%
Stanislaus County Sheriff's Department	27	12%
Turlock City Fire Department	0	0%
Turlock Rural Fire Department	0	0%
Westport Fire District	0	0%
West Stanislaus Fire District	0	0%
Woodland Ave Fire District	0	0%
Other	3	1%
Total	217	100%

It is interesting to note that 12 out of the 22 agencies surveyed (55%) had no responses to this survey and over half of the respondents identified Modesto Police Department as their public safety agency. The agencies with no response are generally smaller fire service agencies.

2. RESPONDENTS GENERALLY AGREED THAT THEY WORKED WELL WITH SR911 IN MOMENTS OF CRITICAL INCIDENTS BUT HAD MIXED REACTIONS REGARDING SERVICE LEVELS, STAFF RESPONSIVENESS, AND DISPATCH PROCESSES.

This section of the survey provided respondents with an opportunity to discuss issues related to service levels, process of dispatching calls associated with SR911 and the interaction and conflict resolution with SR911 staff. The chart below provides a visual representation of the number of agree and disagree responses to each statement in this section. For each of the statements all respondents that agreed were assigned a positive value (blue), while the number of respondents that disagreed were assigned a negative value (red)².



As the chart shows, there was a wide range of opinions from statement to statement, with some statements clearly garnering much more favorable reactions, and

² By example -30 on the chart reflects 30 respondents disagreed with the statement.

others far less so. Overall, respondents had a mixed reaction in regards to the services provided by SR911.

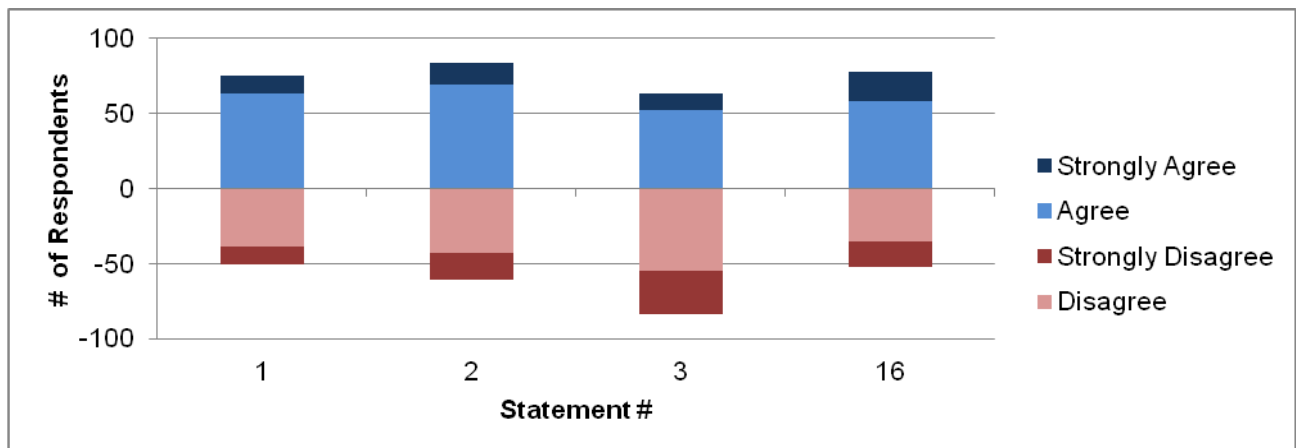
The following subsections examine responses to each question in more detail.

(1) Level of Service.

The table on the following page contains users' responses to statements regarding SR911's level of service to the community and its public safety partners.

Statement	Agree	Disagree	Neutral	No Opinion
1. SR911 is providing a high quality service to the people who call.	40%	27%	24%	9%
2. SR911 provides a high quality service to the personnel in my Agency.	45%	33%	21%	1%
3. SR911 provides a consistent level of service (day to day, shift-by-shift).	34%	45%	21%	0%
16. Overall, our Agency personnel are well supported by SR911 during calls for service.	42%	28%	27%	3%

The following graph presents a visual representation of the number of agreeing and disagreeing responses to each statement in this category. For each of the statements all respondents that agreed were assigned a positive value, while the number of respondents that disagreed were assigned a negative value.



The responses clearly indicate that there was no clear consensus regarding the level of service provided by SR911 among the various customers / users of the service.

However, it can be seen that the largest number of ‘strongly disagree’ responses (statement #3) were related to consistency of the service provided. Please note the following points:

- **Statements #1 & #2 – on level of service:** These two statements had a similar response pattern, with no clear majority in terms of agreeing or disagreeing with the quality of service provided to the community or the employees in the public safety agency. Comparing these statements, it is interesting to note that there was a higher number of strongly disagree and strongly agree responses in Statement #2 reflecting a wide disparity of opinion regarding service levels provided to each agency.
- **Statement #3 – on consistency of service level:** A plurality of all respondents (45%) disagreed with this statement. However, upon further analysis of these results by type of public safety agency (Fire vs. Law Enforcement), the survey revealed that nearly 65% of Fire agencies agreed that the service level provided by SR911 was consistent compared to just 41% of Law Enforcement users.
- **Statement #16 – on support from SR911:** Overall, respondents mostly had positive (42%) or neutral / no opinion responses (30%) in relation to agency personnel being well supported by SR911. Similar to the previous statement, Fire users had a much more positive reaction, with 71% agreeing that their agency personnel are well supported by SR911 during calls for service compared to 37% of Law Enforcement users.

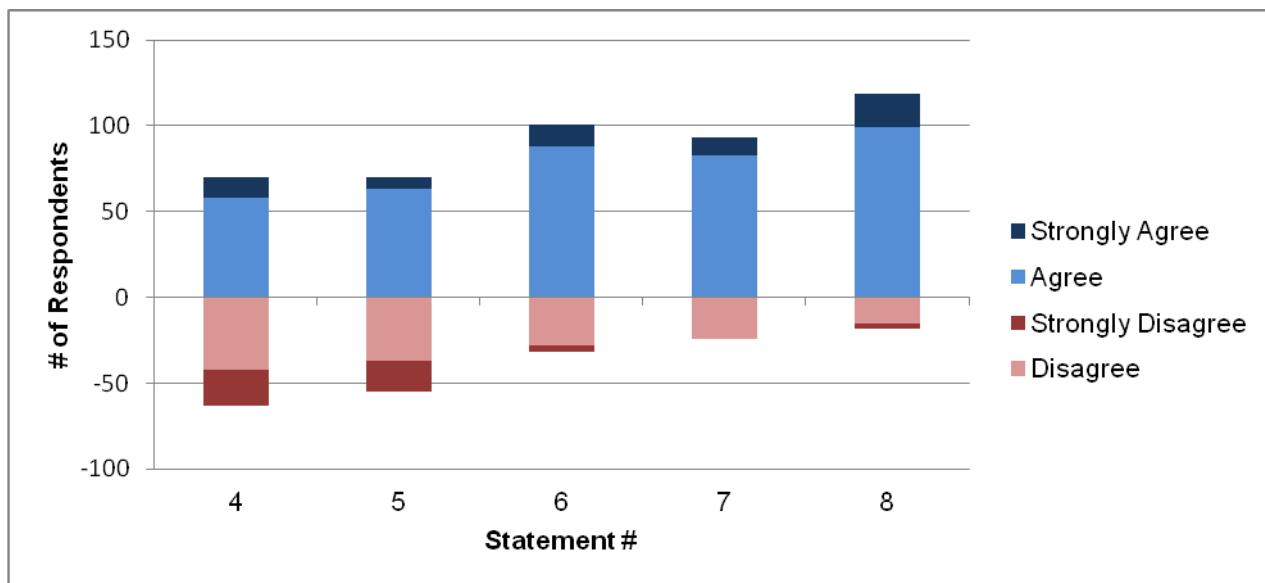
This section of the survey reveals there is a huge variation in responses related to the perception of service levels provided by SR911 to the employees in the various public safety agencies. This seems to be especially true in relation to the provision of a consistent level of service. However, further analysis of the survey responses revealed that Fire agencies had a much more favorable reaction to SR911’s service levels compared to Law Enforcement agencies.

(2) Dispatch Processes (including Call Classification).

The following table contains users’ responses to statements in section one about the SR911’s current policies and processes related to dispatching and classifying emergency and non-emergency calls.

Statement	Agree	Disagree	Neutral	No Opinion
4. The current process of dispatching emergency (911) calls for service is efficient and effective.	38%	33%	27%	2%
5. The current process of dispatching non-emergency calls for service is efficient and effective.	38%	30%	29%	3%
6. The initial information received from dispatch when responding to calls is accurate.	54%	17%	25%	4%
7. The initial classification of calls I am sent on is accurate.	50%	13%	29%	8%
8. The number and types of units dispatched to calls are appropriate.	65%	10%	19%	6%

The following graph presents a visual representation of the number of agreeing and disagreeing responses to each statement in this category. For each of the statements all respondents that agreed were assigned a positive value, while the number of respondents that disagreed were assigned a negative value.



Questions related to initial information and call classification yielded positive reactions, while statements related to efficient and effective dispatch processes resulted in negative comments. The following points provide further analysis on these results:

- **Statements #4 & #5 – on dispatch call processes:** Responses were fairly evenly split among agreement and disagreement in relation to the current dispatch processes being effective and efficient (38% agreement vs. 30-33% disagreement). This seemed to hold true for both emergency and non-emergency calls.

- **Statements #6 & #7 – initial information:** The majority of users (54%) agreed that the initial information received from dispatch is accurate, while half of the respondents (50%) agreed that the initial classification of calls on which they are being sent on is accurate. It is interesting to note that statement #7 was the only statement in the entire survey, which yielded no responses at all in the strongly disagree category. While some respondents may have disagreed regarding the accurate nature of the initial classification of calls, there was no strong disagreement.
- **Statement #8 – appropriate units dispatched:** This statement had one of the most positive reactions throughout the entire survey. A clear majority of respondents, 65%, agreed that the number and the types of units that are dispatched based on information provided by SR911 is appropriate.

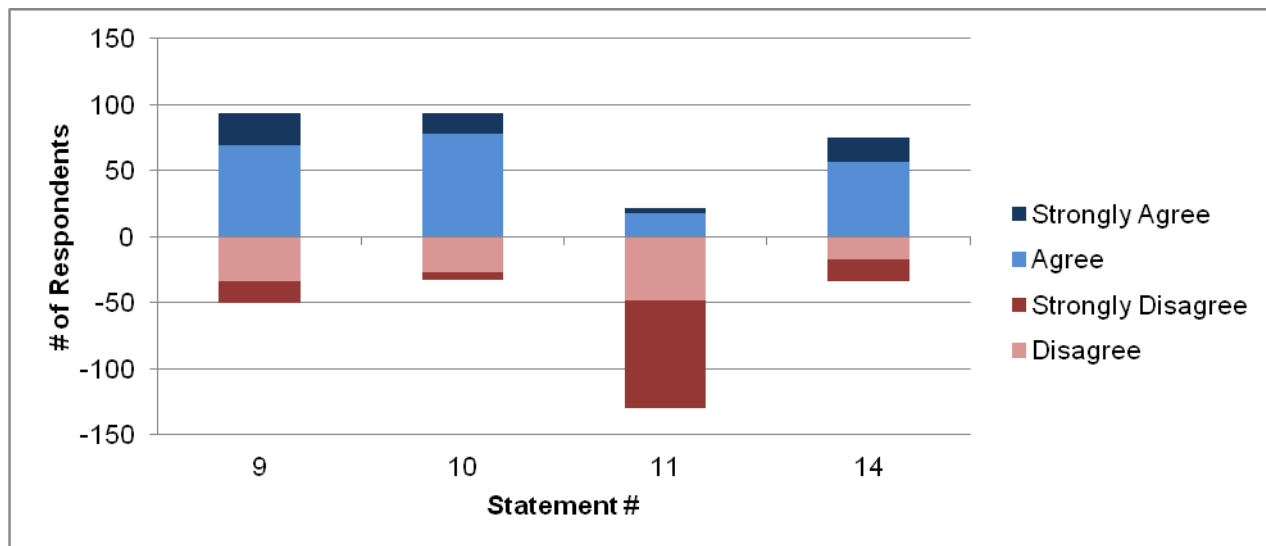
These statements suggest that while there is no consensus regarding current dispatch processes being efficient and effective, users of SR911 do agree that those same processes result in accurate information and types of units being dispatched.

(3) Staff Training & Responsiveness.

The following tables contain responses to statements in section one about the level of training and responsiveness of SR911 staff and shift supervisors.

Statement	Agree	Disagree	Neutral	No Opinion
9. The SR911 personnel are responsive when I need additional information.	50%	27%	20%	3%
10. Dispatch center personnel are trained to follow the appropriate policies and procedures for my agency's call responses.	51%	18%	26%	5%
11. SR911 is adequately staffed to meet our Agency's needs.	12%	70%	13%	5%
14. SR911 shift supervisors are available and responsive to my needs.	40%	18%	24%	18%

The graph below presents a visual representation of the number of agreeing (blue) and disagreeing (red) responses to each statement in this category. For each of the statements all respondents that agreed were assigned a positive value, while the number of respondents that disagreed were assigned a negative value.



As the graph above indicates users had positive reactions associated with personnel being responsive and adequately trained, but had strongly negative reactions to staffing levels being sufficient to meet their respective agencies' needs. Please note the following points:

- **Statements #9 and #14 – on staff responsiveness:** The two statements related to staff responsiveness present two different aspects of SR911 responsiveness. The first aspect is responsiveness in relation to any additional information being requested by the public safety agency and relates to all staff (Statement #9), while the second aspect deals with overall responsiveness of SR911 shift supervisors only (Statement #10). These different aspects explain the different response patterns, as half of the users (50%) agreed that staff was responsiveness compared to a somewhat lower percentage of 40% of those same users agreeing with shift supervisors being responsive to their needs.
- **Statement #10 – on staff training:** A slim majority of respondents, 51%, agreed that SR911 staff was trained to follow the appropriate call response procedures and policies for their respective public safety agencies.
- **Statement #11 – on SR911 staffing levels:** This statement yielded the most negative result throughout the entire survey, as approximately 70% of respondents disagreed that SR911 was staffed to meet the needs of their agency. Nearly 44% of those respondents strongly disagreed with this statement (highest strongly disagree percentage throughout the survey). The lack of adequate staffing could help explain the ability of SR911 staff to be responsive to the needs of the public safety agencies, as well as other negative perceptions demonstrated in the public safety survey.

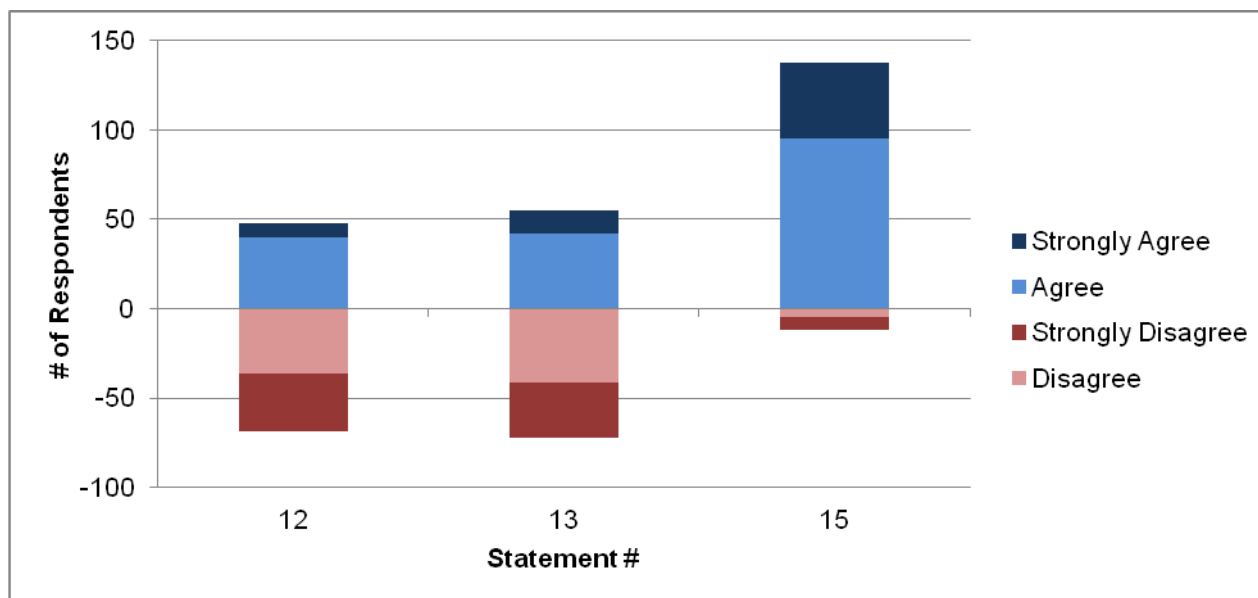
Overall, respondents disagreed with their being adequate staffing at SR911 to meet the needs of their public safety agencies; however, there was agreement on staff being responsive and also being trained in their respective agencies' calls procedures and policies.

(4) SR911 Interagency Communication.

The following table contains responses to statements about SR911's system integration with other agency's systems and the level of teamwork between SR911 personnel and the users of the service.

Statement	Agree	Disagree	Neutral	No Opinion
12. My IT and communication systems integrate well with SR911.	26%	37%	26%	11%
13. When issues arise between SR911 personnel and my Agency, they are resolved quickly and fairly.	30%	39%	22%	11%
15. My Agency and SR911 work well together during critical incidents.	74%	6%	16%	4%

The graph on the following page presents a visual representation of the number of agreeing and disagreeing responses to each statement in this category. For each of the statements all respondents that agreed were assigned a positive value, while the number of respondents that disagreed were assigned a negative value.



The graph above shows that responses are fairly mixed regarding IT and communication systems integrating well with SR911's systems and resolution of issues between SR911 staff and public agency staff. However, there was a strongly positive reaction to the statement that the respective agency and SR911 are able to work well together during any critical incidents. Further detail regarding the responses is provided in the following points:

- **Statement #12 – on systems integration:** Users of SR911 had no clear majority in any category related to their systems being able to integrate well with SR911. The plurality of responses (37%) disagreed with the integration of their systems with SR911's systems. However, nearly 37% were either neutral or had no opinion regarding their respective public agencies' systems being able to integrate well with SR911. Filtering these responses by agency also revealed no clear majority.
- **Statement #13 – on interagency issues resolution:** Similar to integration of systems, these responses were fairly evenly split between the three major categories of agree (30%), disagree (39%), and being neutral or having no opinion (33%). As the question asks for two separate criteria for conflict resolution – speed and fairness, there is a huge variance in responses, as some respondents might believe that issues are resolved quickly, but not always fairly, or vice versa.

- **Statement #15 – on interagency cooperation during critical incidents:** Nearly 3 out of 4 respondents agreed that during critical incidents their respective public agency is able to work well with SR911. This statement had the lowest level of disagreement throughout the entire survey (7%). Interestingly, no Fire user disagreed with this statement, with the only disagreement registered from Law Enforcement agencies.

While there were mixed reactions to the interagency conflict resolution, survey respondents believed that when it came time for critical incidents the agencies were able to work very well with SR911, regardless of whether their IT and communication systems integrated well with SR911's systems.

3. NARRATIVE SURVEY RESPONSES.

In addition to the survey's forced choice questions, respondents were asked to provide narrative responses to two open-ended questions (#5 - #6). The responses to the questions were grouped and summarized by the project team.

(1) What are the most significant strengths of SR911?

Those who chose to answer the open-ended questions wrote that the greatest strength of SR911 were its well-trained and quick to respond dispatchers. Some of the common themes are summarized below:

- **Greatest Strengths:**
 - Well-trained / Professional Dispatchers and Staff
 - Strong customer service skills
 - Ability to dispatch to multiple agencies
 - Effective handling of critical incidents
 - Strong sense of teamwork between agency employees and dispatchers

Most respondents believed that the greatest strength of the department was related to the training of the dispatchers in professionally, courteously, and quickly

dispensing accurate information to the users of SR911. Additionally, respondents described that dispatchers were very dedicated and quick to respond to follow-up questions and concerns related to specific incidents. These elective responses generally do not contradict feedback with the other results in the survey, such as feedback regarding staff training. However, these statements do conflict with the uncertainty surrounding the efficiency and effectiveness of current SR911 dispatch processes. Most of the narrative statements reflected favorably upon the dispatcher and their ability to handle the call, rather than the actual processes associated with dispatching and dispensing that information.

(2) What are the most significant improvement opportunities facing SR911?

The overwhelmingly general consensus of respondents for this question had to do with increasing staffing and addressing technological / work equipment issues. The comments are summarized on the following page.

- Improvement opportunities:
 - Increase staffing – dispatchers are also serving as call takers
 - Improve equipment – radio frequencies do not work for many agencies
 - Update IT Systems – CAD software is outdated
 - Improve staff morale / professionalism – complaints regarding attitudes of dispatchers and call takers
 - Provide more detailed / critical information when dispatching units
 - Leadership / Supervision – complaints regarding SR911 leadership and supervisory staff being responsive

Respondents believe the most important opportunity for improvement is to increase the current staffing levels as currently the dispatchers are also serving as call

takers. Several comments highlighted that dispatchers are placing units on hold to be able to answer other calls that are coming into SR911. The level of workload perceived interfering with dispatchers' core responsibilities could lead to the complaints regarding periodic attitude / negative behavior among SR911 staff, as well as other opinions expressed in the responses to the survey such as the ability of these dispatchers to provide all relevant information to the dispatched units. Ultimately, some comments suggested that all of these issues relate back to SR911 leadership, management and supervisory staff. Users believe that SR911 is using outdated equipment and technology, which had led to low service levels. The opinions expressed in this portion of the survey mimic the other statistical results presented throughout the survey.

4. RESULTS OF THE EMPLOYEE SURVEY

The Matrix Consulting Group conducted a survey of the Stanislaus Regional 911 (SR911) employees in order to gauge their views on a variety of issues. Surveys were distributed to all employees of SR911. Of the 63 full and part-time employees assigned to SR911 at the time of this survey, 39 responses were received for a “statistically significant” response rate of 62%.

1. INTRODUCTION TO THE PURPOSE AND STRUCTURE OF THE SURVEY.

The survey consisted of two sections. The first section contained 33 statements to which respondents were asked to select one of the following responses: “strongly agree,” “agree,” “disagree,” and “strongly disagree.” For those that had no opinion, this additional selection was also provided. The statements in this section of the survey were designed to provide an understanding of the perceptions, attitudes, and opinions of SR911 employees with respect to the following key areas:

- **Level of Service to the Community:** Employees responded to statements about the level of service provided to the community by SR911.
- **Recruitment, Career Development and Training:** Employees responded to statements about recruitment, career development opportunities such as compensation package and training opportunities available to employees of SR911.
- **Staffing and Workload:** Employees responded to statements about the staffing levels, workload, and overtime.
- **SR911 Management and Supervision:** Employees responded to statements about the management and supervisory staff of SR911.
- **SR911 Programs and Work Environment:** Staff was asked to respond to statements in relation to SR911 programs and work environment.

In the second section respondents were asked to identify factors that impact work morale at SR911.

While the survey was confidential, respondents were asked in the beginning to indicate their work status and their current assignment. The following tables present the number of respondents by whether they are full or part-time, day or night shift, their supervisory status, and length of employment with SR911.

Full vs. Part-Time	No. of Respondents	% of Total Responses
Full-Time Employee	36	92%
Part-Time Employee	3	8%
Total	39	100%

Shift	No. of Respondents	% of Total Responses
Day Shift	26	67%
Night Shift	13	33%
Total	39	100%

Supervisory Status	No. of Respondents	% of Total Responses
Dispatch / Call-Taker Personnel	25	62%
Supervisory / Management	7	18%
Support Personnel	8	20%
Total	40	100%

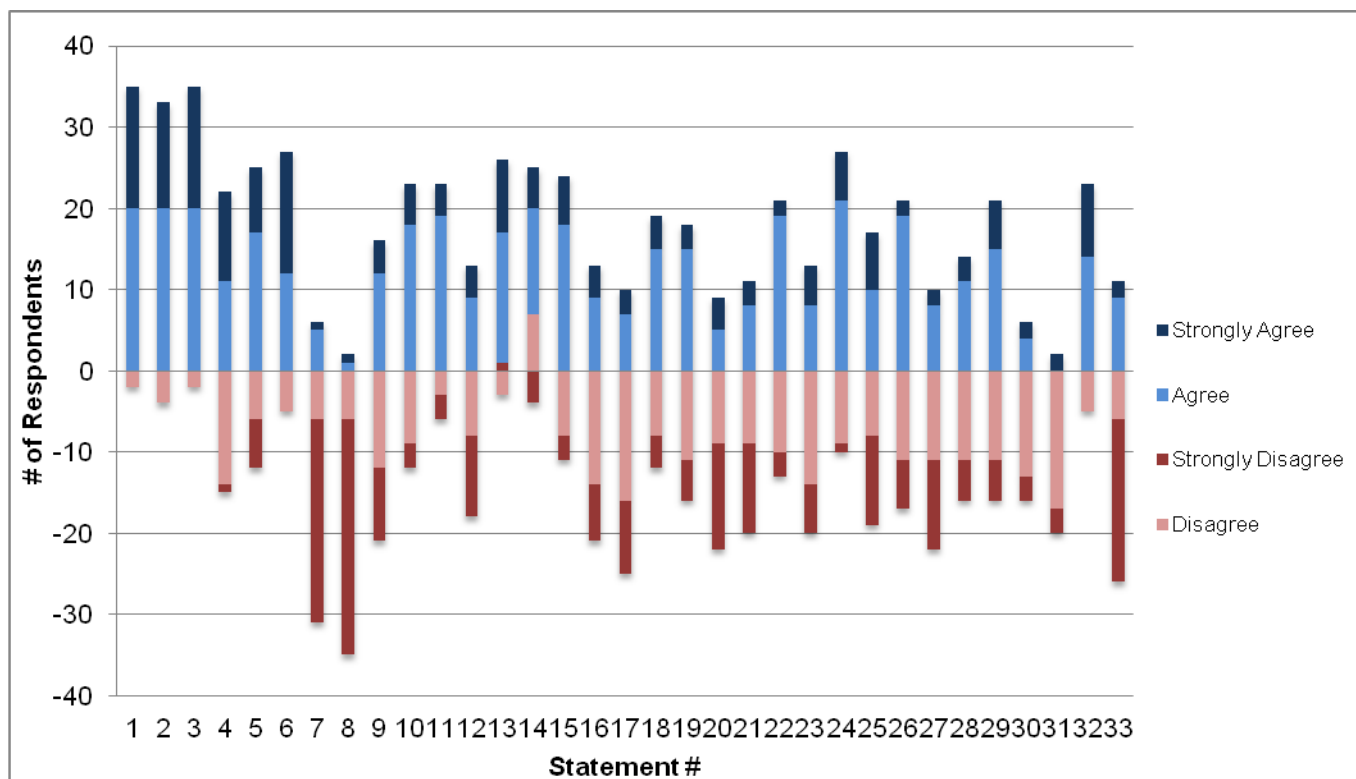
*Respondents had the option to check all that apply. One individual checked both supervisory and support personnel.

Length of Employment	No. of Respondents	% of Total Responses
0 – 3 years	5	13%
3 – 9 years	8	20%
10+ years	26	67%
Total	39	100%

2. RESPONDENTS GENERALLY AGREED THAT SR911 PROVIDES GOOD SERVICE TO THE PUBLIC, BUT HAD NEGATIVE REACTIONS REGARDING CURRENT STAFFING LEVELS AND THE OVERALL WORK ENVIRONMENT OF THE SR911.

This section of the survey provided respondents with an opportunity to discuss issues related to organization, operations, governance, and service levels associated with SR911. Responses to the statements in this section reflected mixed opinions on

the part of respondents. The chart below provides a visual representation of the number of agree and disagree responses to each statement in this section. For each of the statements all respondents that agreed were assigned a positive value, while the number of respondents that disagreed were assigned a negative value³.



As the chart shows, there was a wide range of opinions from statement to statement, with some statements clearly garnering much more favorable reactions, and others far less so. Overall, respondents had a mixed reaction in regards to the operation and organization of SR911.

The following subsections examine responses to each question in more detail.

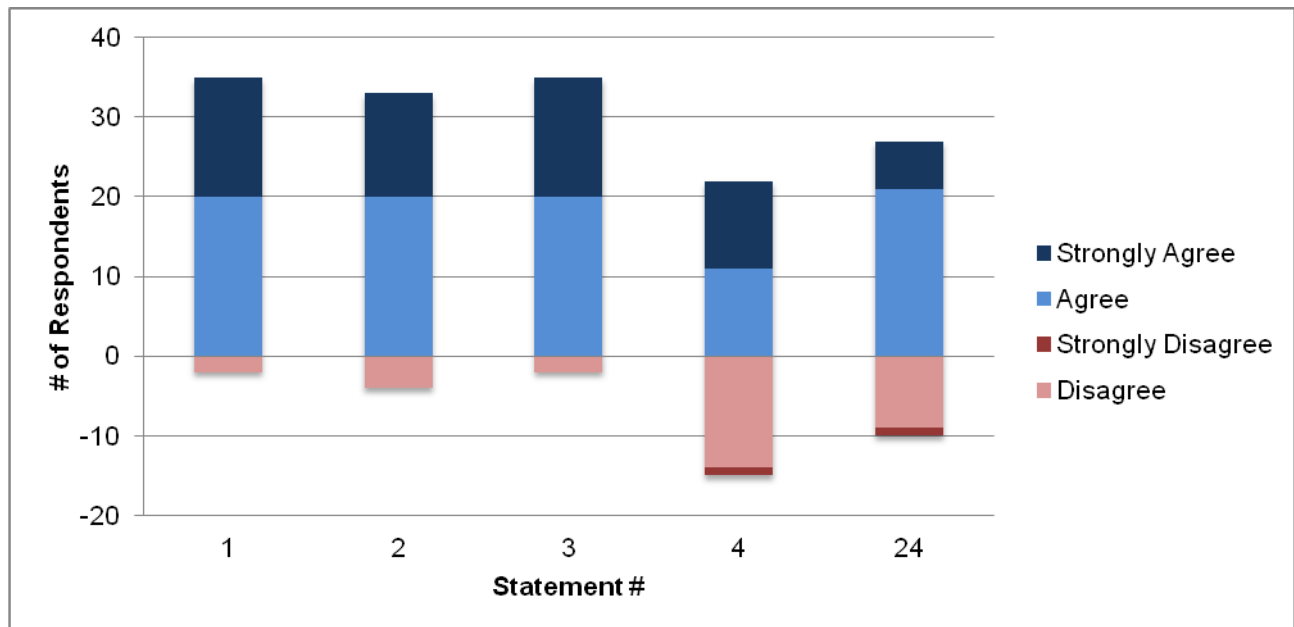
³ By example -30 on the chart reflects 30 respondents disagreed with the statement.

(1) Level of Service.

The table on the following page contains employees' responses to statements regarding SR911's level of service to the community and its public safety partners.

Statement	Agree	Disagree	No Opinion
1. Our dispatch agency provides a high level of service to our public safety partners and the community.	92%	5%	3%
2. We provide quality customer service to the public that calls in.	87%	10%	3%
3. We provide professional services to our public safety partners in the field.	92%	5%	3%
4. We provide a consistent level of service (day-to-day, shift-by-shift).	58%	39%	3%
24. We have a good working relationship with the law enforcement and fire agencies for which we dispatch.	71%	26%	3%

The following graph presents a visual representation of the number of agreeing (blue) and disagreeing (red) responses to each statement in this category. For each of the statements all respondents that agreed were assigned a positive value, while the number of respondents that disagreed were assigned a negative value.



The responses clearly show extremely positive responses regarding the services provided to the public and to the public safety partners. However, it can be seen that

there was significant number of 'disagree' responses (statement #4) related to consistency of the service provided. Please note the following points:

- **Statements #1 & #3 – on level of service and professionalism:** These two statements had a similar response pattern as an overwhelming majority, 92% of responses agreed with the statement and only 5% disagreed.
- **Statement #2 – quality customer service:** An overall majority of respondents agreed that SR911 provides quality customer service to the public, of which a third of those respondents strongly agreed with this statement.
- **Statement #4 – on consistency of service level:** Responses to this statement had the largest number of disagree responses (40%) in this category of statements. Sorting these responses by shift assignment reveals that 64% of day shift employees **agree** that there is a consistent level of service, while nearly 54% of night shift employees **disagree** that there is a consistent level of service.
- **Statement #24 – on working relationship with other agencies:** Overall, respondents agreed that the working relationship was good with other agencies. While 60% of employees who had worked for SR911 for less than 3 years agreed with this statement, those with longer tenure viewed relationships more favorably. 75% of employees who worked between 3-9 years, and 72% of employees who have worked for over 10 years with SR911 agreed with the statement.

Overall, perceptions about the services provided to the general public and the public safety partners are positive, which is a very common set of responses in our surveys of dispatch employees.

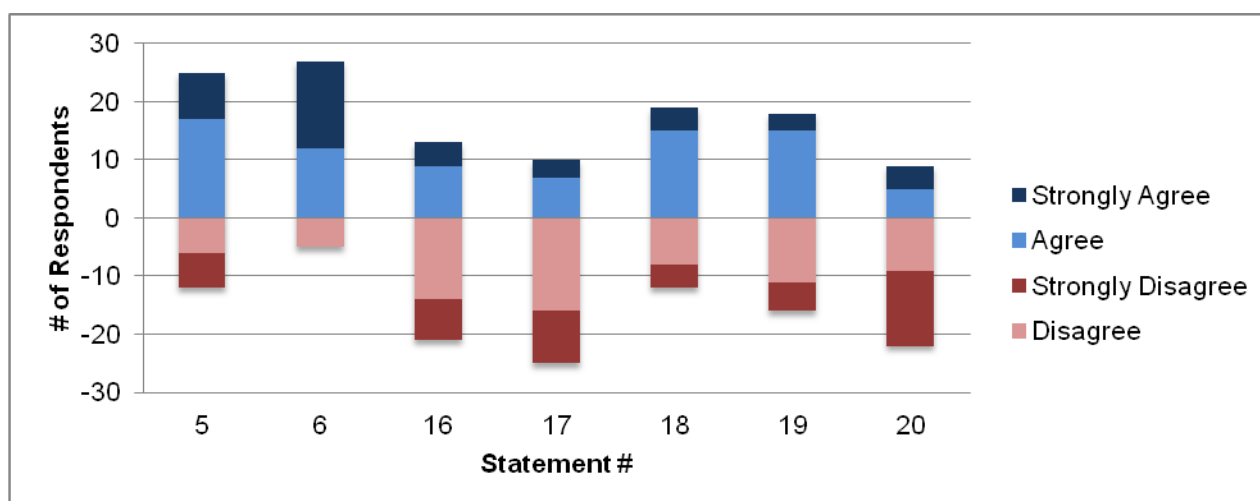
(2) Recruitment, Career Development, and Training.

The following table contains employees' responses to statements in section one about the SR911's current policies to recruit qualified employees, encourage career development, retain staff, and focus on providing training opportunities to employees.

Statement	Agree	Disagree	No Opinion
5. Our entire compensation package (salary and benefits) is fair and equitable compared to most dispatch agencies.	66%	32%	3%
6. I'm intending to make a career at my dispatch agency.	71%	13%	3%
16. We do a good job recruiting qualified applicants. We take the appropriate steps to hire the best-suited candidates for the agency.	34%	55%	10%
17. Our agency does a good job retaining qualified applicants.	26%	66%	8%

Statement	Agree	Disagree	No Opinion
18. The agency provides staff with a strong and consistent initial training program so they are prepared to do their jobs.	50%	32%	18%
19. I am able to attend adequate in-service and continuous training.	47%	42%	10%
20. Our CTO training is performed consistently among training staff.	24%	58%	18%

The following graph presents a visual representation of the number of agreeing (blue) and disagreeing (red) responses to each statement in this category. For each of the statements all respondents that agreed were assigned a positive value, while the number of respondents that disagreed were assigned a negative value.



Questions related to compensation and career development yielded positive reactions, while statements related to recruitment and retention resulted in negative comments. The following points provide further analysis on these results:

- **Statement #5 – on compensation levels:** A majority of respondents agreed that the compensation level is fair and equitable. Of the approximately one-third employees that disagreed, nearly half of those respondents strongly held such an opinion.
- **Statement #6 – on career with the dispatch agency:** In this category of questions, this statement had the largest number of responses in the strongly agreed category, suggesting that most of the respondents intend to make their career with SR911. Considering that nearly two-thirds of the respondents have been working for SR911 for over ten years, it would be expected that this question would have a positive reaction.

- **Statements #16 & #17 – on recruiting and retaining qualified applicants:** Respondents generally disagreed that SR911 was able to recruit and retain qualified applicants. This suggests that the majority of employees do not believe that SR911 is recruiting qualified applicants, but beyond that it does not do a good job of retaining qualified applicants that are hired.
- **Statement #18 – on initial training program:** Exactly half of the respondents agreed that the initial training program is strong and consistent. Filtering these results by seniority reveals that nearly 56% of employees that have worked for SR911 for over 10 years agree that the initial training program is strong and consistent compared to just 20% of employees that have worked for SR911 for less than 3 years. This suggests that there is a clear difference in the initial training program for employees that started 10 years ago compared to employees that started more recently.
- **Statement #19 – on in-service and continuous training:** Respondents had a mixed reaction to in-service and continuous training. Nearly the same amount of respondents agreed and disagreed with this statement. Filtering these responses by seniority reveals that 80% of employees who have worked for SR911 for less than 3 years agreed with this statement. However, this statement is much more relevant to the group of respondents that have worked for more than 3 years and of that group of respondents, nearly 42% agree and 45% disagree. For seasoned employees this suggests that there is a fairly even split between respondents that believe that adequate in-service and continuous training is available.
- **Statement #20 – on CTO training:** Employees disagreed that the CTO training is performed consistently among the training staff. This statement had the largest number of responses in the strongly disagree category, suggesting that the majority of respondents had a negative reaction regarding CTO training for newly-hired staff.

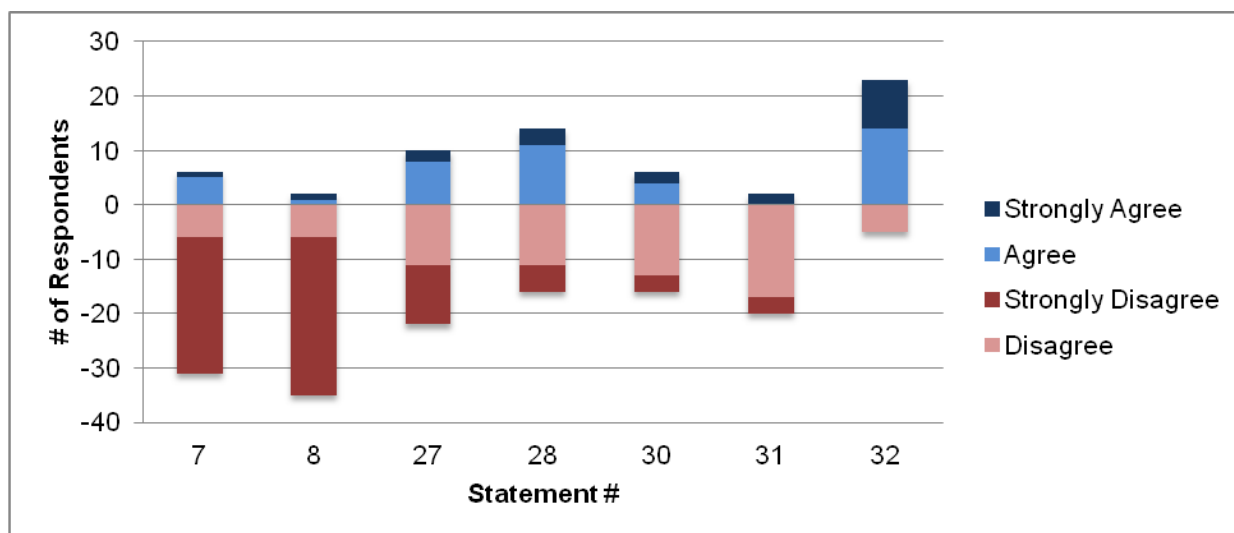
These statements suggest that while SR911 provides comparatively good compensation package and that employees intend to make a career with SR911, there needs to be significant improvement related to recruitment, retention, and training.

(3) Staffing and Workload.

The following tables contain employees' responses to statements in section one about the SR911's staffing, workload, and overtime concerns.

Statement	Agree	Disagree	No Opinion
7. We are appropriately staffed with dispatchers to meet our agency's needs.	16%	81%	3%
8. We are appropriately staffed with call-takers to meet our agency's needs.	5%	92%	3%
27. Workload is equitably distributed among individual dispatch work-stations (fire, sheriff, and police).	26%	58%	16%
28. Staff rotational practices among our work-stations result in equitable workload distribution.	37%	42%	21%
30. I personally work too much mandated overtime.	16%	42%	42%
31. I personally work too much voluntary overtime.	5%	53%	42%
32. Our entire agency works too much overtime.	61%	13%	26%

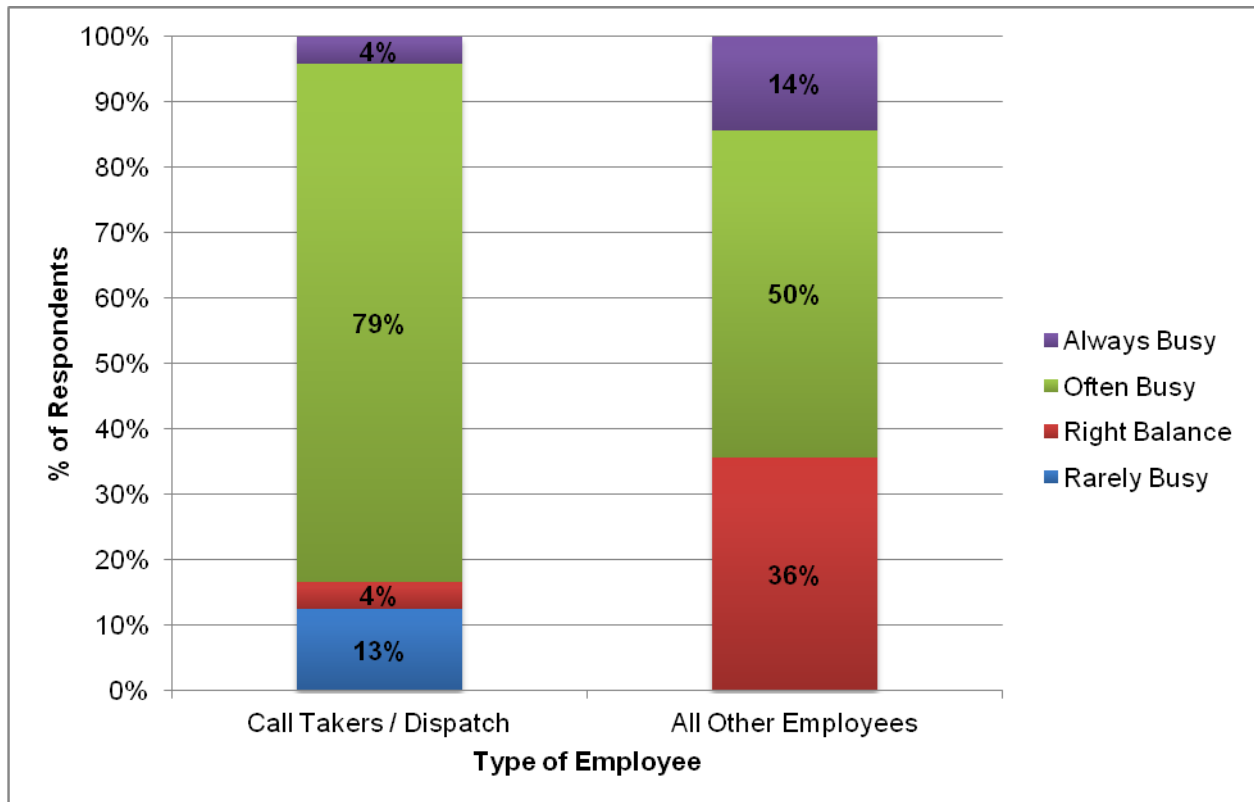
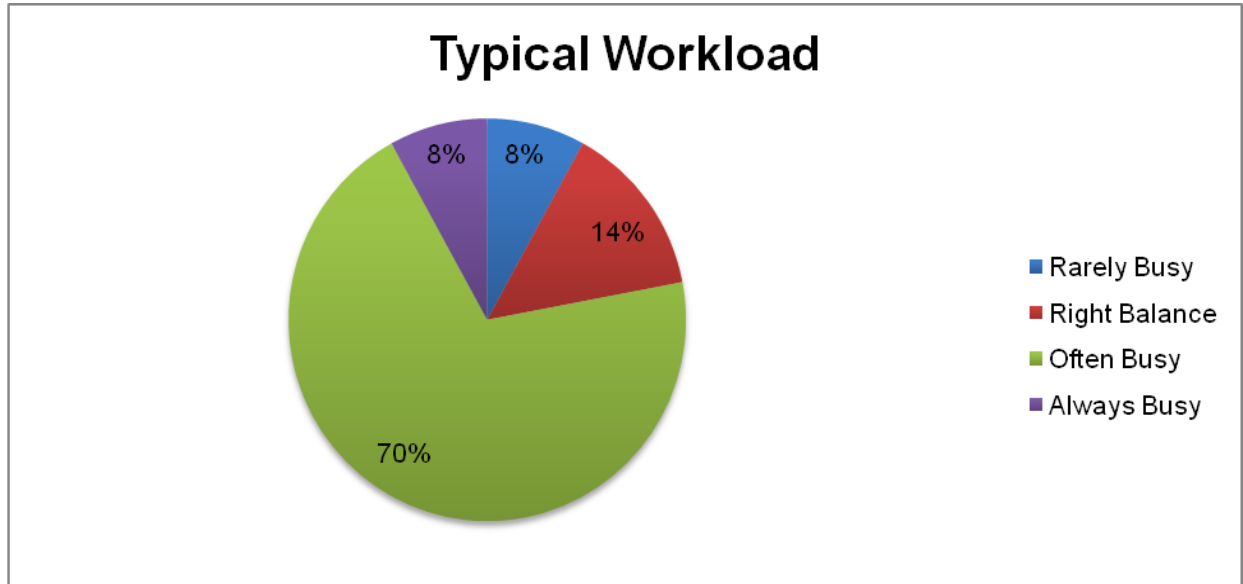
The graph below presents a visual representation of the number of agreeing (blue) and disagreeing (red) responses to each statement in this category. For each of the statements all respondents that agreed were assigned a positive value, while the number of respondents that disagreed were assigned a negative value.



The table below present information regarding an important workload-related question.

34. Please select one of the following choices to describe your current workload:	% of Responses
I am always busy and can never catch up.	8%
I have the right balance of work and time available.	14%
I am often busy but can generally keep up.	70%
I could handle more work given the available time	8%

The following charts further depict these opinions regarding workload. The pie chart reflects all responses from employees while the second stacked-bar chart breaks out those responses based on type of employee.



As the graphs above indicate, respondents emphasize that “they are often busy but can generally keep up.” This sentiment, predictably, is emphasized for dispatcher and call-taker personnel. Please note the following points:

- **Statements #7 and #8 – on staffing levels:** An overwhelming majority of respondents not only disagreed with staffing levels, but rather strongly disagreed with the current staffing levels for dispatchers and call-takers being able to meet the needs of SR911.
- **Statement #27 – on workload distribution:** Respondents generally disagreed that the workload was equitably distributed among the individual dispatch stations.
- **Statement #28 – on staff rotational practices:** Employees had mixed reaction regarding staff rotational practices among the work-stations. The majority of the responses were evenly split between agree and disagree responses. Responses by seniority do not provide any clearer reactions, as the same proportion of respondents for those employed less than 3 years or greater than 10 years (40%) agreed with this statement. This suggests that in general regardless of length of employment, respondents have no clear consensus whether staff rotational practices are able to equitably distribute workload.
- **Statements #30-32 – on overtime:** While Respondents disagreed that they work too much voluntary overtime, they did agree that SR911 as a whole works too much overtime. In terms of mandatory overtime, there was a bit of a mixed response with an equal amount of responses in the ‘disagree’ and, interestingly in the ‘no opinion’ categories.
- **Statement #34 – on typical workload:** The majority respondents felt that they were often busy, but still able to keep up with the workload. The same amount of respondents felt that they were either too busy or rarely busy. It is interesting to note that when these responses are sorted by length of employment it is revealed that 60% of employees who have worked for less than 3 years at SR911 have the right balance of work, while 43% of employees who worked between 3-9 years are often busy, and 80% of employees who have worked for more than 10 years are often busy but can keep up.

Overall, respondents do not believe that there is appropriate staff to meet the needs of SR911, including that workload is not distributed equitably among the various workstations. These responses also suggest that employees are fairly busy but are able to keep up. This translates into employees stating that they do not work too much

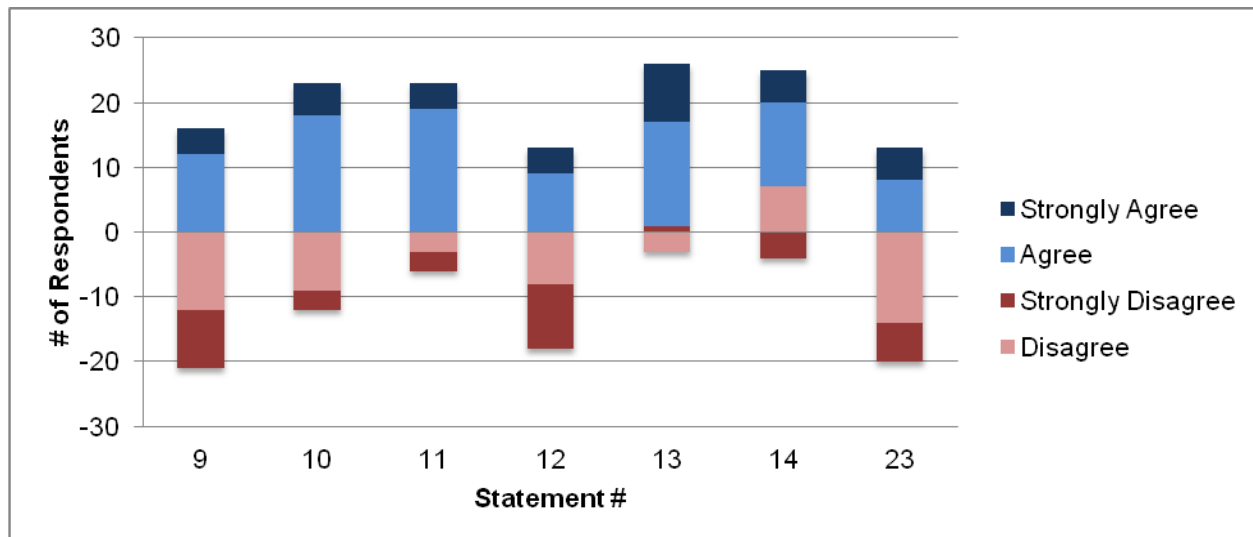
overtime (mandated or voluntary); however, SR911 as a whole is perceived by staff as working too much overtime.

(4) SR911 Management and Operations.

The following table contains employees' responses to statements about the SR911's management and supervisory procedures.

Statement	Agree	Disagree	No Opinion
9. Employees are held accountable for poor customer service, inter-personal or technical performance.	42%	55%	3%
10. My direct supervisor spends sufficient time with me to accurately evaluate my work performance.	60%	32%	8%
11. Our shift manager is available and responsive to my needs.	62%	16%	22%
12. Shift managers supervise, operate, and employ our policies & procedures consistently among shifts.	34%	47%	18%
13. Our operations manager provides adequate direction and leadership, which motivates me to work well.	66%	10%	24%
14. Our co-directors provide adequate direction and leadership, which motivates me to work well.	47%	29%	24%
23. Our daily operations are influenced too much by manager's and supervisor's discretion as compared to Standard Operating Practices.	34%	53%	13%

The following graph presents a visual representation of the number of agreeing (blue) and disagreeing (red) responses to each statement in this category. For each of the statements all respondents that agreed were assigned a positive value, while the number of respondents that disagreed were assigned a negative value.



The graph on the previous page shows that responses are fairly mixed regarding management practices, including being responsive to staffing needs. Further detail is provided in the following points:

- **Statement #9 – on accountability:** Respondents generally disagreed that employees were held accountable for their job performance. There was an even number of respondents that chose agree and disagree with this statement; however, it is interesting to note that there was a higher proportion of respondents that strongly disagreed with this statement compared to the respondents that chose strongly agree.
- **Statements #10 and #11 – work performance evaluation and responsiveness:** The majority of employees believed that the supervisor spent sufficient time to accurately evaluate their work performance and was responsive to their needs.
- **Statement #12 – on shift managers:** There was a mixed reaction to the ability of shift managers to supervise, operate, and employ policies and procedures consistently among the shifts. Sorting responses by shift shows that 53% of night shift employees disagreed that the shift management employs policies and procedures consistently compared to 44% of day shift employees.
- **Statements #13 & #14 – direction and leadership:** While employees agreed that the operations manager was able to provide them with adequate direction and leadership, there was no clear consensus regarding the co-directors. There was an even number of respondents that either disagreed or had no opinion regarding the co-director. Nearly 64% of day shift employees agreed that the co-directors provide adequate direction compared to 38% of night shift employees.
- **Statement #23 – on discretion of managers and supervisors:** A majority of respondents disagreed that the managers and supervisors influence the daily operations of SR911 rather than the standard operating procedures. Responses were fairly evenly split between strongly agree and strongly disagree categories.

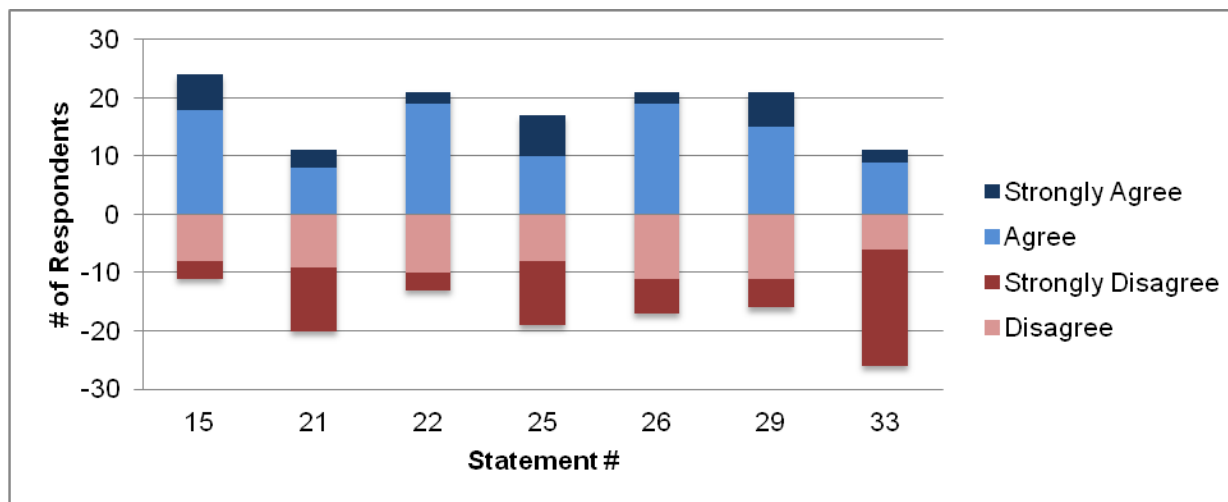
The mixed pattern of response on management and supervisors revealed that while staff does not feel that it is held accountable, generally supervisors and shift managers are responsive to their needs and can adequately motivate them. There is a mixed reaction regarding the ability of shift managers to consistently employ policies and procedures and for the co-director's ability to motivate staff members.

(5) SR911 Programs and Work Environment.

The following table contains employees' responses to statements in section one concerning SR911's programs and work environment.

Statement	Agree	Disagree	No Opinion
15. Over the last several months, any personnel, organizational or managerial changes have proven positive steps for the agency.	63%	29%	8%
21. Our CTO job assignment program is effective as currently designed.	29%	53%	18%
22. Our policies and procedures are clear and answer nearly all questions we may have.	55%	34%	11%
25. My work morale is high.	45%	50%	5%
26. We have the proper tools and technology necessary to effectively do our jobs.	55%	45%	0%
29. Our agency's work ethic is good.	55%	42%	3%
33. Our work environment is clean, healthy, and conducive to effective operations.	29%	68%	3%

The following graph presents a visual representation of the number of agreeing (blue) and disagreeing (red) responses to each statement in this category. For each of the statements all respondents that agreed were assigned a positive value, while the number of respondents that disagreed were assigned a negative value.



Responses to these statements resulted in mixed reactions. Further analysis regarding these statements is noted by the following points:

- **Statement #15 – on changes to SR911 within the past few months:** The majority of respondents agreed that over the past few months the changes in personnel, management, and the organization have resulted in positive changes for SR911.
- **Statement #21 – on CTO job assignment program:** The largest number of responses for this statement were in the strongly disagree category. In the previous section there was also a strong negative reaction to CTO training being performed consistently among the training staff. This suggests that overall there are concerns regarding the Communication Training Officer.
- **Statement #22 – on policies and procedures:** A slim of respondents agreed that policies and procedures for SR911 are clear. This is interesting to note, as 80% of employees who have been working for SR911 for less than 3 years agreed with this statement, compared to 63% of employees working between 3-9 years for SR911. However, less than 50% of staff working for SR911 for more than 10 years, agreed with this statement. This suggests that those employees who have worked for SR911 a longer time do have a less favorable opinion that policies and procedures are able to answer all the questions that they have.
- **Statement #25 – on work morale:** Exactly half of the employees disagreed that their own work morale is high at SR911, while a similar number of respondents (45%) agreed that their work morale is high. It is interesting to note that there was a higher proportion of strongly disagree responses than strongly agree responses for this statement. Further analysis reveals that 80% of new employees (0-3 years tenure) agree that their work morale is high compared to 63% of longer-term employees (3-9 years). The mixed reaction regarding work morale is for the 10+ years employees, as 40% agree that their work morale is high, while 48% disagree.
- **Statements #26 & #29 – on proper technology and work ethic:** A small majority of respondents agreed that there is the proper tools and technology to perform their work and that SR911 has a good work ethic.
- **Statement #33 – on overall work environment:** A clear majority of employees not only disagreed, but strongly disagreed that SR911's work environment is clean, healthy, and conducive to effective operations. Due to the variety of factors listed in the statement, it is difficult to assess as to which factors such as cleanliness or healthiness impact operations most significantly.

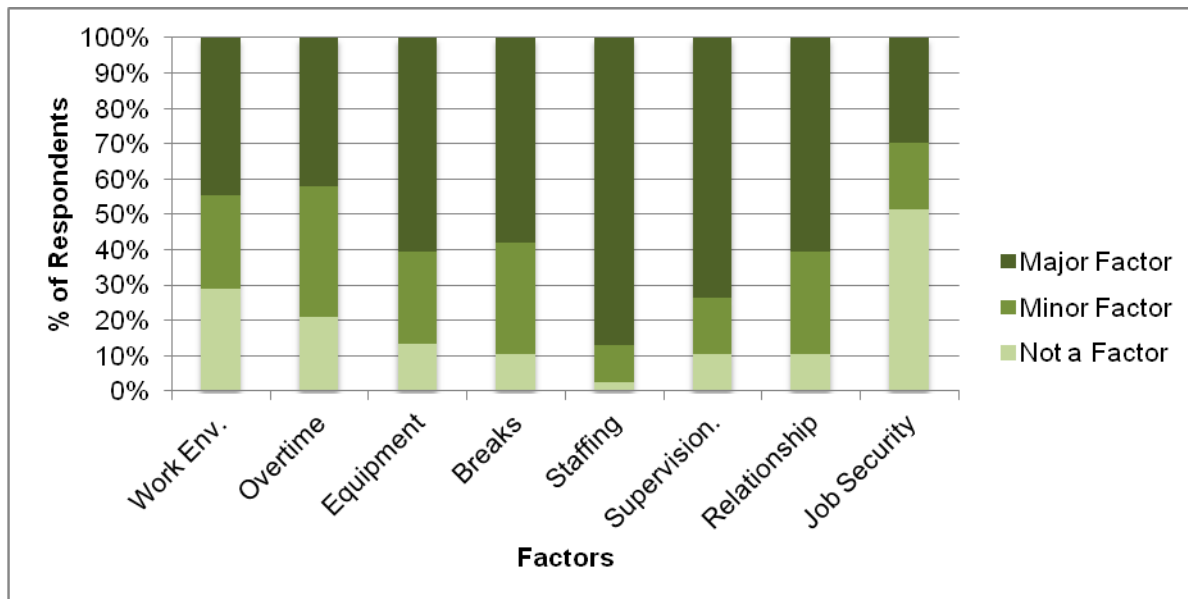
Respondents generally believe that the overall work environment is not conducive to effective operations, but that in the last few months operational changes have led to positive changes within SR911.

3. STAFFING LEVELS AND INCONSISTENCY IN SUPERVISION ARE MAJOR FACTORS AFFECTING WORK MORALE AT SR911.

As the previous sections responses confirmed employees had mixed opinions regarding their work morale within SR911. This section of the survey focuses on the factors that most affect work morale within SR911. The following table lists several different factors and the importance level of those factors.

Factors	Not a Factor	Minor Factor	Major Factor
Physical Work Environment	29%	26%	45%
Too Much Overtime	21%	37%	42%
Poor Equipment	13%	26%	61%
Limited or No Breaks	10%	32%	58%
Staffing Levels	3%	10%	87%
Inconsistency in Supervision	10%	16%	74%
Relationship Conflicts	10%	29%	61%
Job Security	51%	19%	30%

The following graph presents a visual representation of the percentage of responses associated with each factor.



The graph above clearly shows that the largest factor affecting work morale is staffing (the lack thereof) followed by inconsistency in supervision. This sentiment has been reflected through other statements within the survey. Outdated / poor equipment,

(lack of) breaks and relationship conflicts also played a major factor in affecting the work morale. Other factors such as the physical work environment and overtime were morale-impacting factors, but not frequently cited as major. A majority of respondents stated that job security was not a factor affecting work morale, and considering that nearly 67% of the respondents of this survey have been with SR911 for over 10 years, this response is not unexpected.

3. NARRATIVE SURVEY RESPONSES

In addition to the survey's forced choice questions, respondents were asked to provide narrative responses to two open-ended questions (#36 - #37). The responses to the questions were grouped and summarized by the project team.

(1) Please Indicate What You Believe is the Greatest Strength of SR911.

Those who chose to answer the open-ended questions wrote that the greatest strength of SR911 was its dedicated and committed workforce and the ability of the employees to come together and work as a team during moments of crisis.

(2) Please Indicate What You Believe is the Greatest Opportunity for Improvement at SR911.

The general consensus of respondents for this question had to do with increasing staffing and addressing accountability. Respondents believe that it is necessary to increase the current staffing levels to be able to handle the current workload and also improve consistency in service levels. There should also be a focus on making employees at all levels accountable for job performance and improving training. Additionally, respondents stated that updating equipment should be a focus of SR911, as that is considered to be one of the factors affecting work morale.

5. STAFFING ANALYSIS

The following chapter focuses on the Matrix Consulting Group's (MCG) analysis of SR911 staffing. Included within is the analysis, which can be replicated in the future, as well as findings and conclusions. Staffing recommendations are withheld until the Operations Chapter present later in this report as operational modifications can have key impacts on staffing needs.

1. STAFFING MODELS USE NUMEROUS VARIABLES TO DRIVE OVERALL DISPATCHER STAFFING REQUIREMENTS.

Developing an appropriate staffing model for a dispatch operation is not only critical to ensure effective service to caller, but for those public safety agencies being serviced. To operate in the most efficient and effective manner possible, it is important to right-size the operation's staff and the necessary infrastructure to support these staff. The MCG has reviewed and used a variety of dispatcher staffing models over the last several years. Indeed, as new information becomes available, these models are further modified to enhance their ability to assess the necessary staffing in a dispatch environment. Because of the importance in accurately predicting staffing requirements, the MCG will use a variety of models to evaluate dispatch staffing requirements for SR911 and ultimately use such information to arrive at our dispatch staffing recommendations.

Development of a staffing model begins with understanding and calculating several variables. The sub-section below deals with staff availability—a critical variable in all staffing models.

(1) Net Dispatcher Availability Approximates 1,782 Hours Per Year.

While one Full-time Equivalent (FTE) staff position is scheduled to work 2,080 hours per year in most professions, this is not always the case, particularly in public safety professions who have “exotic” schedules to meet service level demands. These often include 12-hour schedules where staff, such as dispatchers and call-takers at SR911, are scheduled to work 2190 hours per year.

A critical workload element to determine staffing requirements is the amount of annual time available for dispatch personnel to perform their work. The MCG defines net availability as the number of hours that a dispatcher is available to perform their key dispatcher roles and responsibilities after the impact of leave/unavailable time has been subtracted from their gross annual scheduled hours of work. Based on leave information provided by SR911, the following data was calculated by MCG.

Average Annual Leave Taken by Type	Average Annual Hours Taken
Vacation Hours	151.3
Sick Hours	70.4
Comp/Personnel Leave	143.3
Training Leave	24
FMLA, Military Leave	0
Bereavement	3.2
Meals/Break (if taken)	0 ⁴
OTHER leaves	16.2
Total Unavailable Time	408.4
NET ANNUAL AVAILABLE WORK HOURS PER POSITION	1781.6

(2) Turnover at SR911 is Low, 7% Annually, Compared to National Standards and Will Only Marginally Impacts Staffing Level Calculations.

Turnover at SR911 since calendar 2011 has been marginal at the dispatcher level and somewhat more significant at the part-time call-taker position. Over the last

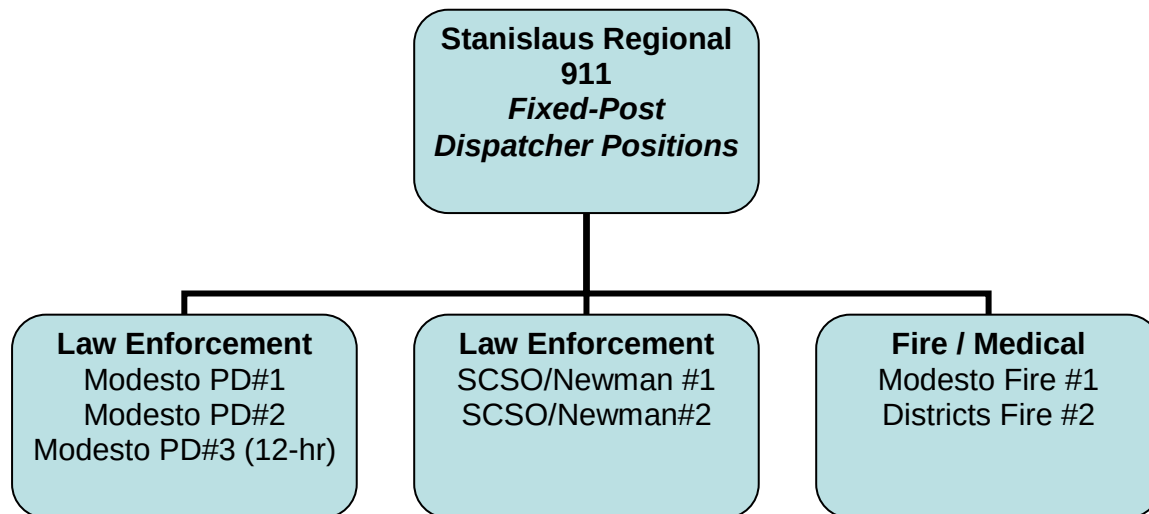
⁴ Meals/Breaks are generally not taken under existing operations. The impact of this will be considered separately and subsequently.

four years, turnover with respect to dispatcher positions has averaged 7% per annum compared to 17% nationally⁵. This percentage is used in staffing calculations to ensure coverage of positions that could be vacant as a result of retirements, resignations, etc.

2. BASED ON CURRENT SR911 DISPATCHER FIXED-POST DEPLOYMENT PRACTICES, APPROXIMATELY 34 DISPATCHER POSITION WOULD NEED TO BE AUTHORIZED BASED UPON LEAVE PATTERNS.

Based upon average net annual available work hours per dispatch position and historical turnover rates, SR911 would need 5.25 full-time equivalent (FTE) positions for each Fixed-Post work console⁶. A Fixed-Post position is an assignment that is typically deployed every day, irrespective of workload. Typically it is in reference to 24-hour, 7-day/week, 365-days/year deployments, although some Fixed-Posts are only for a portion of a 24-hour period.

SR 911 Currently deploys 6.5 dispatch Fixed-Post positions as shown in the diagram below.



⁵ 2005 APCO Project RETAINS.

⁶ This FTE calculation changes dependent upon the inclusion of a turnover factors, incorporating meals/breaks, etc. The 5.25 FTE baseline is generally a good benchmark for any type of fixed-post staff modeling.

As a consequence of this current deployment strategy of 6.5 Fixed-Posts, at 5.25 FTEs required for each post, 34 total dispatch positions would be necessary to provide coverage for these posts. There are a variety of important points to note with respect to this calculation.

- At the time of this study 31 Dispatcher positions and seven (8) Communication Training Officer positions were authorized with a total of 34 positions filled; this is equivalent to the 34 positions noted in the calculation.
- Of the 34 filled positions, two are on probation at the time of this report.
- Of the 34 FTE positions calculated, two (2) of these positions are “over-fill” positions as a consequence of turnover rates. While calculating “over-fill” positions into Fixed-Post staff modeling is considered best-practice by the Association of Public Communications Officials (APCO), it is not often accounted for in authorized budgeting or hiring practices.
- Based on real-world leave patterns (as opposed to modeling), occasionally the third Modesto PD Fixed-Post position running wants and warrants from 1400-0200 will go unoccupied.
- Overtime will be incurred to staff the fixed post positions. In FY 2013-2014 nearly 6,470 hours were expended for dispatcher overtime coverage. This equates to over 3.5 FTEs worth of coverage hours.
- This FTE calculation, as footnoted in the prior table, does not include leave time for meals and/or breaks. A common practice at SR911, particularly for Day Shift, is that staff are infrequently relieved for a meal time or break period. Indeed, 90% of SR911 staff who responded to the employee survey indicated the infrequency of meals/breaks impacted their morale to some degree.
- Including meal/break time in Fixed-Post staffing calculations would result the necessity of having 38 Dispatcher FTEs authorized or 35 without including the turnover (over-fill) variable of the staffing calculation.

In sum, the previous Fixed-Post modeling indicates that under current dispatch operational practices, SR911 cannot operate under the current Fixed-Post design without incurring some overtime for meal/break and other concurrent leave coverage. At issue, however, as in any dispatch agency is the necessity for each of these Fixed-

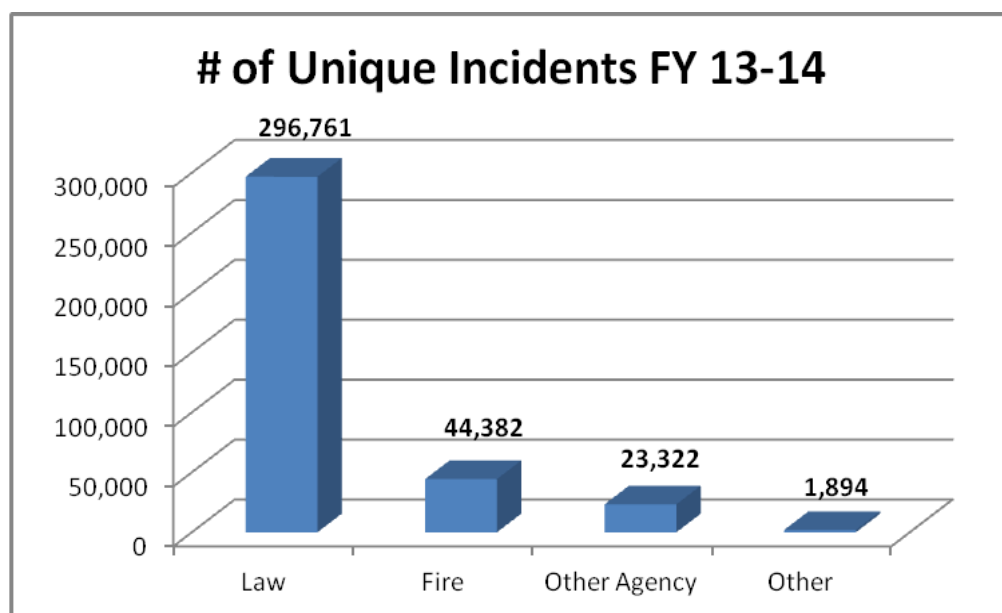
Post positions. This is discussed further in the context of workload-based dispatcher staffing models.

3. DISPATCHER STAFFING BASED ON WORKLOAD MODELING CAN OFFER OTHER DEPLOYMENT OPTIONS.

There are some very important workload elements that can be directly captured in various staff modeling options. These include identification of public safety incidents managed by the dispatch center, identification of community generated calls for service, and linking the numerous tasks related to managing this work. Additionally, major work drivers such as call volumes, radio transactions, key-stroke entries, etc. are all major variables that could be considered staff modeling exercises.

(1) Like Most Dispatch Agencies Dispatching all Public Safety, Law Enforcement Workload is Significantly Greater than Fire-related Workload.

Foundationally, a core workload metric for dispatchers is the number of unique computer-aided dispatch (CAD) incidents that are managed. The following chart shows the number of these unique incidents (366,359) for SR911 for FY 2013-14 by service category.



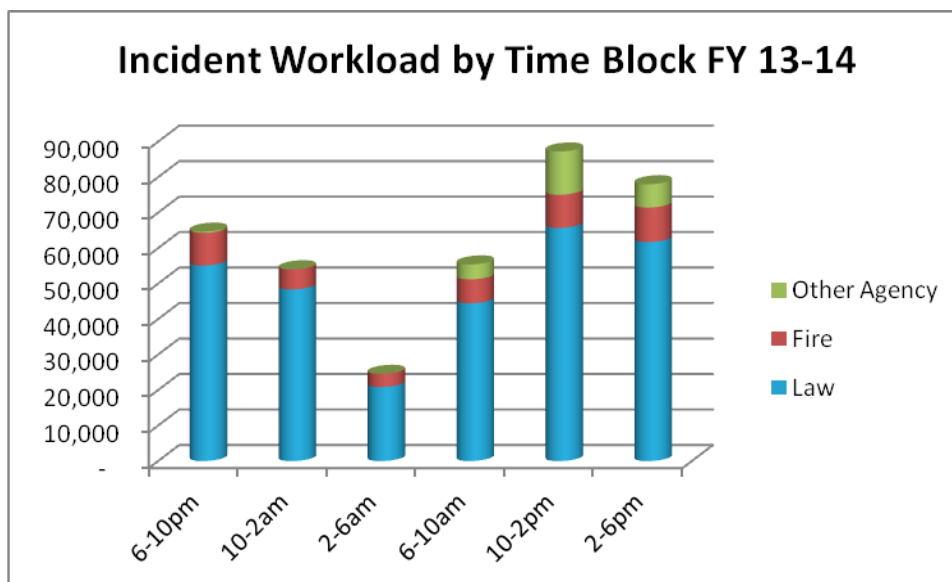
As reflected in the graph above, the largest majority of incidents (81%) are related to handling Modesto PD, Stanislaus County Sheriff (and their contract municipalities), and Newman PD⁷. Just over 12% of incidents are related to Fire / First-response medical incidents of which close to 58% of these are associated with Modesto Fire and Salida Fire while the remaining are generated from within the various other small fire districts in Stanislaus County. A small percentage of calls are classified as ‘Other Agency’ (6%) of which the significant majority (88%) is Stanislaus County Probation Department⁸. Interestingly, for comparative purposes, the Probation Department has approximately four-fifths of the incident workload when compared to Modesto Fire, yet MFD has a Fixed-Post position while Probation does not—such services are currently handled for Probation by the law enforcement dispatchers. There are key reasons for this however, as discussed later in this report as “incident-based” workloads are often not equivalent.

(2) Day Shift is Notably Busier than Night Shift.

Further refining incident workload shows a large discrepancy not only between law and fire incidents, but by time of day and SR911 Day Shift (6am-6pm) and Night Shift (6pm-6am) schedules. The following graph shows this order of magnitude.

⁷ As a point of reference, Newman PD represents approximately 4% of the law enforcement base incidents as shown in the graph; however, this workload will go away in January 2015 when NPD departs SR911.

⁸ The other agency is the Air Pollution Control District



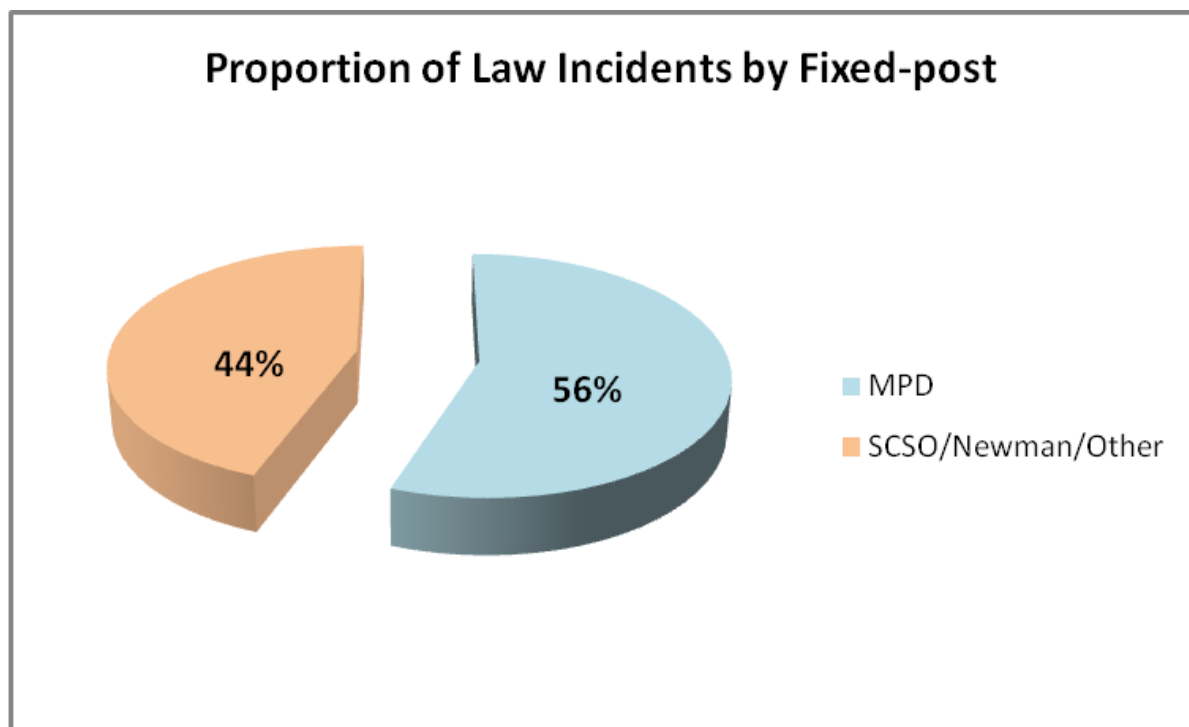
Evaluating incident workload further illustrates one of the (common) shortcomings of Fixed-Post staffing—workload can vary widely among duty stations and shifts. The following points are noted.

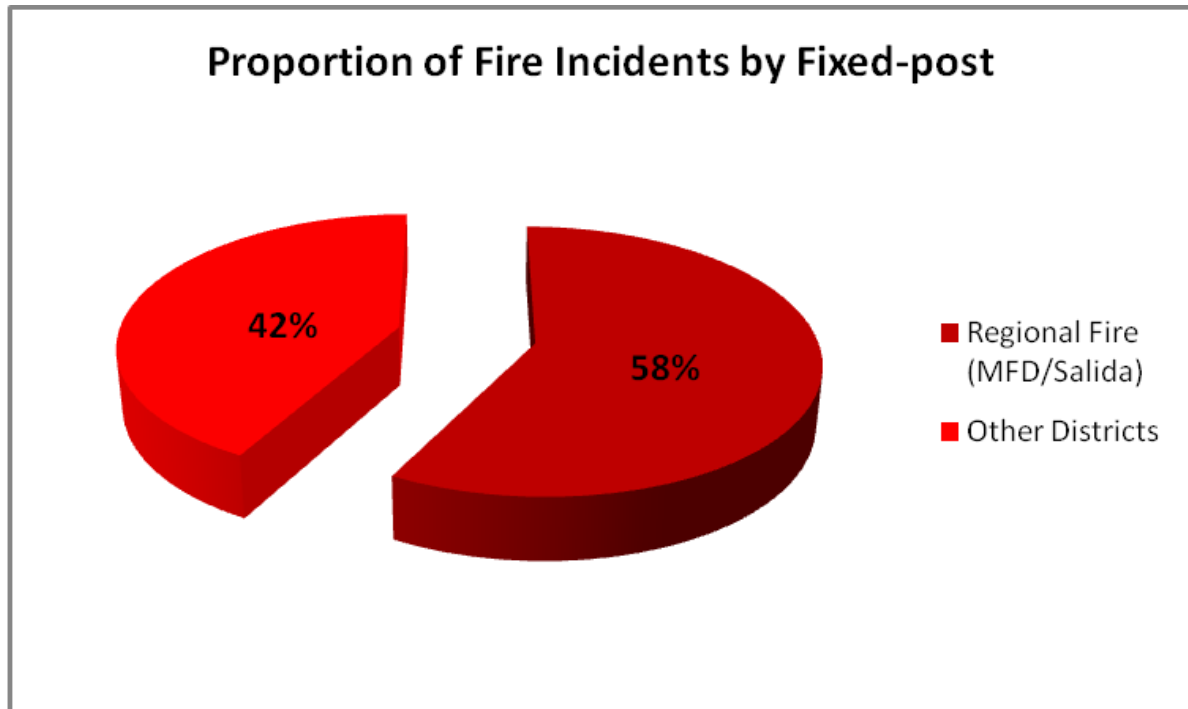
- Day Shift has 55% more incident workload than Night Shift. With the exclusion of the MPD Wants/Warrants “Cover Shift” position from 2pm-2am which only handles incidents secondarily (and may not be staffed at all), the Shifts are staffed with the same Fixed-Post positions.
- Fire and law enforcement incident workload is approximately 39% greater during Day shift than Night Shift, the remaining workload difference between Day and Night is attributed to County Probation which is deployed during the day.
- In fact, there are more County Probation incidents than Fire incidents in the 10 am to 2 pm timeframe. Unlike two (2) Fixed-Post fire positions, there is no fixed post position for County Probation which is handled by the sheriff’s Fixed-Post dispatchers.

While the discrepancy between law enforcement and fire workload may at first appear alarming, Fixed-Post Fire Dispatchers are also back-up call-takers, and while this was intended to be a secondary duty, given the number of call-taker positions SR911 currently has deployed (to be discussed later), this occupies a significant amount of Fire Dispatcher time.

(3) The City of Modesto Fixed-Post Dispatcher Positions are Somewhat Busier than the Remaining County Fixed-Post Duty Stations.

A further examination of incident workload by type shows that the Fixed-Posts deployed to service Modesto are somewhat busier than the other public safety counterparts elsewhere in the County. The following pie charts show the distribution of incident workload by these Fixed-Post assignments.





As shown again, incident workload varies dependent on the duty station assignment, with the City of Modesto Fixed-Posts being somewhat busier than other law enforcement and fire dispatcher Fixed-Posts serving the remainder of the County. In fact, given Probation Department (Other) workload goes away during the Night Shift, the MPD duty stations are much busier during the Night (by approximately 68%) than their nighttime law enforcement counterparts elsewhere in the County.

As demonstrated by the above data, incident workload varies widely for dispatcher duty stations dependent upon the type of incident (law versus fire), the time of day, whether staffing a Modesto Fixed-Post position versus other “County” position, etc. Indeed, workload varies in such a fashion that Fire Dispatcher staff have been tasked with the additional key duty of serving as primary call-taker “back-up” which has led to some other serious service provision issues. It is for these reasons that staffing levels based on workload modeling are further explored.

4. DISPATCHER STAFF MODELING BASED ON WORKLOAD REVEALS INTERESTING RESULTS.

Workload modeling can be somewhat daunting and in fact controversial as a variety of variables, assumptions and modeling approaches can be accomplished. These are detailed in the following pages.

(1) How Long a Dispatcher Should Be Occupied with Workload, Also Known as Their Utilization Rate, is a Function of Several Factors.

The calculation for net (hour) annual availability for dispatchers noted previously essentially results in the amount of time each dispatcher is available to perform work. In any profession, however, no position is occupied 100% of the time. By example, most blue-collar professions, such as fleet mechanics, are ideally occupied 80% of the time performing direct work on vehicles. This helps ensure productivity and, in the private sector, profitability. More relevant to the public safety field, law enforcement agencies would typically strive for patrol staff to have from 35%-50% unobligated patrol time thereby allowing them to selectively work, in this “free time,” particularly on community-oriented problems or proactive enforcement opportunities. This proportion of unobligated time also allows for patrol units to generally be available for relatively rapid response to community generated calls for service.

How much time is dedicated to actual work in the public safety dispatch field is a function of several inter-related variables. An allowance needs to be made regarding the proportion of time desirable to have a dispatcher actually involved in call handling, radio transmissions, keyboard entry, records search, etc. There are several reasons why tasks performed by dispatchers should not occupy 100% of their time, including the following:

- Dispatch centers which have excessively high utilization levels tend to "burn-out" staff and consequently have high levels of employee turnover.
- Professions which require extreme concentration during work activities, such as dispatch, air traffic control, trauma centers, or other professions in which failure brings unacceptable risk, should have lower work utilization rates to incorporate "down time."
- Dispatch centers which have high utilization levels experience "queuing" problems in which responses to incoming telephone calls and radio transmissions are regularly delayed because the dispatcher is pre-occupied with other concurrent workload.
- In dispatch centers with high utilization levels quality begins to suffer because dispatchers must cut calls and radio exchanges short, thereby impacting dispatcher effectiveness, perceived customer-friendly service, and potentially safety in the field for law enforcement, fire, and emergency medical response professionals.

Based on these variables the MCG continually refines the utilization rate based on prevailing practices. These include the following:

- For many years MCG used a utilization rate of **50%** for dispatchers to perform core dispatcher-related functions. This implies that dispatchers will be busy performing work an average of 30 minutes per hour or one second every two seconds of net available time. It should be noted that this utilization or "occupancy rate" is one of the primary drivers in workload-driven staffing requirements. Modifying this variable by relatively small increments can have an important impact on staffing requirements.
- Recent literature has suggested that the utilization rate can be raised somewhat to approximately **65%**. This has been the experience of various dispatch agencies throughout the country including Scottsdale, AZ; Middleton, TX and NORCOMM, WA.

These utilization rates will be used in the following staff modeling exercises.

(2) A Variety of Dispatch Staffing Models Use Different Workload Elements to Calculate Staffing Requirements.

There are some very important workload elements that are directly captured in staff modeling. These include identification of community generated calls for service and linking the significant amount of work related thereto. Additionally, major work elements

such as telephone call volumes, radio transactions, etc. are all major variables that can be used in staff models used. The following section begins with a discussion of APCO's staff modeling based upon workloads.

(3) APCO Has Developed a Staffing Model Based on Major, Though Not All, Workload Elements Performed by Dispatchers.

In the last few years APCO has published a staffing model as part of their Project RETAINS efforts, developed by the University of Denver Research Institute. In effect, the APCO project RETAINS model requires several discreet data elements based on actual workloads to be effective. These include:

- **Net (actual) annual staffing availability** as shown earlier in this chapter.
- **Average telephone busy time** (call duration in seconds), from phone or other records. This should ideally distinguish between law and fire E-9-1-1 calls and administrative calls for service.
- **Average call completion time** (in minutes, this includes time for keyboard data entry, radio transmission, address verification, etc.). Average call completion time is often not accurately available. While some agencies are capable of collecting accurate radio transmission time, other dispatcher-related workload, such as records checks or keyboard data entry by staff, is most often not available.
- **Average Processing Time**, or APT— which is the sum of the two above bullets.
- **Agent Occupancy Rate** (AO) which reflects the proportion of time that the agency desires a dispatcher to be occupied with workload. This is, in effect the same as the definition of Utilization Rate which calculates the proportion of time a dispatcher should have downtime as opposed to engaged with workload.

In brief, the APCO project RETAINS staffing model is an accepted methodology within the industry but it has its limitations. These include:

- The model is originally designed for a call-taker/dispatcher position whereby staff performs both functions simultaneously (e.g. similar to SR911's Fire Dispatchers). Many dispatch agencies now operate with distinct call-taker positions and dispatcher positions performing separate functions.

- The APCO model fails to account for the workload directly related to *other* activities that are unrelated to the tasks resulting from telephone calls. That is, by example, police officer self-initiated activities and the variety of tasks associated thereto. Fully 34% of SR911's incidents were transactional and did not involve a telephone call. This largely included deputy/officer initiated work or Probation Department radio inquiries.
- The APCO model suggests some kind of “estimate” for call wrap-up time, keyboard data entry, records checks, etc., with no suggested benchmark for this kind of workload.

The MCG uses the APCO model as a baseline for determining dispatcher or dispatcher/call-taker staffing levels based upon workloads and seeks to address the issues noted above. The workload drivers are further discussed below.

(3.1) The Time on Radio “Transactions” are a Major Workload Driver in this APCO-Based Model.

The APCO-based model can use the actual number of radio transmission transaction time as a primary workload driver. Dispatchers are responsible for relaying information effectively via the radio and are usually multi-tasking (keyboard entry or console monitoring) while such “air time” is transacting. It is a primary responsibility of dispatch staff. The total time associated with radio transactions is calculated to determine an average amount of time spent in this key task.

Based on three recent months (August, December and April) of data provided by SR911 with respect to radio time, we annualized this information to calculate the total hours of radio time per year. Based on this, we calculated the average amount of radio time that could be allocated to each unique incident noted previously. The result is as follows:

Radio Transaction Data	
Total Minutes (3 month's data)	99,988
Annualized Minutes	399,952
Annualized Hours	6,665.9
Total Annual CAD Incidents	366,359
ESTIMATED RADIO MINUTES PER CAD INCIDENT	1.09

Recognize that not every CAD incident requires approximately one minute of radio time, many are shorter and some are longer. However for modeling purposes all radio time must be captured by a key workload element.

(3.2) APCO Suggests Estimating Time Associated With Other Tasks Performed by Dispatchers in Staff Modeling.

Perhaps one of the most difficult workload elements to capture is the task time associated with an incident that is unrelated to radio time. This includes the aforementioned keystroke entries, records checks off-line, display monitoring, administrative data entry, e-mail checking, etc. APCO, NENA and others have not provided any benchmarks with respect to this kind of workload, suggesting an estimate be developed for such work. Other dispatch organizations have developed estimates ranging from 90 seconds for each call for service (as opposed to a CAD incident), to ten seconds per telephone call (NOT dispatcher activity) for call wrap-up, to no time allocation for such activities given many of them are accomplished during radio traffic as part of multi-tasking. Consequently, developing a reasonable time estimate for SR911 is the only current approach beyond an industrial engineering exercise which is beyond the scope of this study.

Given the MCG's experience in a broad array of dispatch agencies, we believe

that given the current operational environment at SR911, **2.5 minutes per incident** is a very reasonable estimate to capture incident “wrap-up” and related activities that include such things as keyboard entry, outbound telephone calls, display monitoring, etc. The result of this estimate is used in the following models.

Based on the totality of information and assumptions above, as well as data associated with unique incidents for law enforcement and fire, net hour availability for dispatcher staff, noted utilization rates and current turnover rates, staff planning related to this particular APCO model can be developed for the dispatch positions. The following tables reflect the staffing baseline necessary to handle the workload related to all unique incident activity with different staffing levels calculated dependent upon changes in staff availability and utilization.

APCO Model #1 – 50% Staff Utilization Rate, Higher Net Availability (FY 2013-14 Data)

Workload and Standards	Data Elements
Total Incidents	366,359
Radio and Wrap-up Minutes per Incident	3.59
Estimated Transaction Hours	15,814
Time Requirements	
Net Employee Availability (hours) No Calculated Meal/Break	1,781.6
Utilization Rate or Agent Occupancy Rate (AO)	50%
True Employee Availability (hours)	890.8
Staff Needed	
Full Time Equivalent Dispatchers required baseline using CFS Work	24.6
Turnover rate	7%
FTE's Baseline Required	26.3

APCO Model #2 – 50% Staff Utilization Rate, Lower Net Availability (FY 2013-14 Data)

Workload and Standards	Data Elements
Total Incidents	366,359
Radio and Wrap-up Minutes per Incident	3.59
Estimated Transaction Hours	15,814
Time Requirements	
Net Employee Availability (hours) Includes Meals/Breaks	1,599.1
Utilization Rate or Agent Occupancy Rate (AO)	50%
True Employee Availability (hours)	799.6
Staff Needed	
Full Time Equivalent Dispatchers required baseline using CFS Work	27.4
Turnover rate	7%
FTE's Baseline Required	29.3

APCO Model #3 – 65% Staff Utilization Rate, Higher Net Availability (FY 2013-14 Data)

Workload and Standards	Data Elements
Total Incidents	366,359
Radio and Wrap-up Minutes per Incident	3.59
Estimated Transaction Hours	15,814
Time Requirements	
Net Employee Availability (hours) No Calculated Meal/Break	1,781.6
Utilization Rate or Agent Occupancy Rate (AO)	65%
True Employee Availability (hours)	1,158.0
Staff Needed	
Full Time Equivalent Dispatchers required baseline using CFS Work	18.9
Turnover rate	7%
FTE's Baseline Required	20.3

APCO Model #4 – 65% Staff Utilization Rate, Lower Net Availability (FY 2013-14 Data)

Workload and Standards	Data Elements
Total Incidents	366,359
Radio and Wrap-up Minutes per Incident	3.59
Estimated Transaction Hours	15,814
Time Requirements	
Net Employee Availability (hours) Includes Meals/Breaks	1,599.1
Utilization Rate or Agent Occupancy Rate (AO)	65%
True Employee Availability (hours)	1,039.4
Staff Needed	
Full Time Equivalent Dispatchers required baseline using CFS Work	21.1
Turnover rate	7%
FTE's Baseline Required	22.6

The tables above reflect the baseline dispatcher staffing required based upon the APCO model technique presented. The APCO-based staffing model provides an important framework upon which to develop dispatch staffing requirements based upon workload as opposed to Fixed-Post staffing requirements.

(4) Workload and Data Elements Utilized in the MCG Dispatcher Staffing Model.

One of the primary duties, and indeed the core responsibility of dispatcher staff, is the effective handling of a community generated call for service whether arising from E911 or seven-digit telephone lines. Community generated call for service workload, like unique incidents, can be used as a primary workload driver in developing a dispatcher staffing model. This kind of workload element is foundational in deriving the total dispatcher staffing levels required in our MCG internal modeling methodology.

These calls certainly do not represent all workload, however, such as the variety and differences in administrative work that a dispatcher undertakes to support public safety staff in the field, the previously mentioned radio traffic related to field unit self-initiated activities, etc. Notwithstanding this fact, community generated calls for service does reflect workload that requires a mandatory response from the dispatch agency; the community expects immediate service when it telephones for public safety service. Whereas all other dispatcher activities are vitally important, community generated calls for service response is the primary core business of a dispatch agency.

Community generated calls for service, as defined herein, *represent contacts from the community (generally via E911 landline telephone, cell phone and also non-emergency lines) ultimately resulting in one dispatched event regardless of the number calls reporting the event or the number of public safety units sent in response.* It is

critical to understand this fundamental definition in order to comprehend how future analyses are performed in this particular staffing model.

(4.1) The MCG Has Developed a Quantitative Approach to Assess Dispatch Staffing Requirements Based on Community Generated Calls for Service Standards.

This quantitative approach utilized by MCG ties volumes of community generated calls for service workload, instead of unique incidents, with developed time standards to determine total communications center workload and the attendant staffing needs. This methodology has been utilized for over twenty years by members of our organization and despite its age and changes in dispatching service delivery, the outcome has withstood the test of time. This process starts from the premise that there are relationships among dispatch center workloads that are reasonably constant from one dispatch agency to another relating to the following:

- The total number of telephone calls received in a dispatch center can be expressed on a community-generated call for service basis and converted to average time requirements.
- The total number of radio transmissions received in a dispatch center can be expressed on a community-generated call for service basis and converted to average time requirements.
- The total number of other workloads (e.g. data entry) handled in a dispatch center can be expressed on a community-generated call for service basis and converted to average time requirements.

These assumptions are critical because while many public safety agencies believe that counting only incidents entered into CAD and/or capturing telephone calls is an appropriate reflection of workload, as noted previously few count other dispatching tasks that can include radio transmissions, keyboard entries, research tasks for officers and deputies as well as other administrative dispatcher activities related to providing

emergency services. Our firm has converted all these activities to total minutes of workload which are expressed on a per community-generated call-for-service basis. That is, estimates of total dispatch center workloads are converted to minutes and expressed on the basis of average work minutes required for each community generated call for service.

The time standards utilized in this study for law enforcement and fire/EMD are as follows:

- Our project team has researched that an average of 130 seconds (2.17 minutes) are allocated to process a community-generated emergency telephone call that is subsequently routed to a dispatch console. This standard incorporates the fact that multiple calls can be generated by each incident.
- Average call completion time – The average call completion time is related to dispatcher workload, is estimated at 6.73 minutes for *law enforcement* and includes the following time estimates.
 - Approximately 327 seconds of total radio transmissions related activity expressed on a per call for service basis — including call-related and officer self-initiated field workloads and administrative transmissions.
 - Approximately 13 seconds are allocated for records checks.
 - Approximately 64 seconds are allocated for other tasks associated with the dispatch center (e.g. administrative record-keeping, other activities).

Note that these standards represent averages — they do not represent actual workload per call. For example, it does not take 13 seconds to process a records request as some calls have more records research and others have none; however, the overall time required to process a records request averages 13 seconds per community generated call.

- Similar to the above law enforcement workload, *fire* time calculations reflect a grand total of 8.20 minutes total for community generated calls for service. This standard is slightly below the 8.9 minutes of law enforcement as there is typically less records-checking and other work associated with fire/EMD calls.
- Average call completion time, therefore, for a fire call for service is 6.03 minutes.

(4.2) Matrix Baseline Dispatcher Staffing Model Based Upon Community Generated Calls for Service.

Using the available data methodology described herein, as well as community generated calls for service for either law enforcement or fire, net hour availability for dispatcher staff, noted utilization rates and current turnover rates, staff planning related to this particular model can be developed for the dispatch positions. The following tables reflect the staffing baseline necessary to handle the workload related to all community generated calls for service with different staffing levels calculated dependent upon changes in staff availability and utilization.

Model #5 – 50% Staff Utilization Rate, Higher Net Availability (FY 2013-14 Data)

Workload and Standards	Data Elements
Law Enforcement Annual Community Generated Calls for Service (CFS)	197,348
Time Standard in Minutes for CFS	6.73
Total Time in Minutes for Workload	1,328,152
Fire/EMD Community Generated Calls for Service	43,627
Time Standard in Minutes for CFS	6.03
Total Time in Minutes for Workload	263,071
Time Requirements	
Grand Total Time in Minutes for Law and Fire Workload	1,591,223
Total Hours of Workload	26,520
Net Employee Availability (hours) No Calculated Meal/Break	1,781.6
Utilization Rate	50%
True Employee Availability (hours)	890.8
Staff Needed	
Full Time Equivalent Dispatchers required baseline using CFS Work	29.8
Turnover rate	7%
FTE's Baseline Required	31.9

Model #6 – 50% Staff Utilization Rate, Lower Net Availability (FY 2013-14 Data)

Workload and Standards	Data Elements
Law Enforcement Annual Community Generated Calls for Service (CFS)	197,348
Time Standard in Minutes for CFS	6.73
Total Time in Minutes for Workload	1,328,152
Fire/EMD Community Generated Calls for Service	43,627
Time Standard in Minutes for CFS	6.03
Total Time in Minutes for Workload	263,071
Time Requirements	
Grand Total Time in Minutes for Law and Fire Workload	1,591,223
Total Hours of Workload	26,520
Net Employee Availability (hours) Includes Meals/Breaks	1,599.1
Utilization Rate	50%
True Employee Availability (hours)	799.6
Staff Needed	
Full Time Equivalent Dispatchers required baseline using CFS Work	33.2
Turnover rate	7%
FTE's Baseline Required	35.5

Model #7 – 65% Staff Utilization Rate, Higher Net Availability (FY 2013-14 Data)

Workload and Standards	Data Elements
Law Enforcement Annual Community Generated Calls for Service (CFS)	197,348
Time Standard in Minutes for CFS	6.73
Total Time in Minutes for Workload	1,328,152
Fire/EMD Community Generated Calls for Service	43,627
Time Standard in Minutes for CFS	6.03
Total Time in Minutes for Workload	263,071
Time Requirements	
Grand Total Time in Minutes for Law and Fire Workload	1,591,223
Total Hours of Workload	26,520
Net Employee Availability (hours) No Calculated Meal/Break	1,781.6
Utilization Rate	65%
True Employee Availability (hours)	1,158.0
Staff Needed	
Full Time Equivalent Dispatchers required baseline using CFS Work	22.9
Turnover rate	7%
FTE's Baseline Required	24.5

Model #8 – 65% Staff Utilization Rate, Lower Net Availability (FY 2013-14 Data)

Workload and Standards	Data Elements
Law Enforcement Annual Community Generated Calls for Service (CFS)	197,348
Time Standard in Minutes for CFS	6.73
Total Time in Minutes for Workload	1,328,152
Fire/EMD Community Generated Calls for Service	43,627
Time Standard in Minutes for CFS	6.03
Total Time in Minutes for Workload	263,071
Time Requirements	
Grand Total Time in Minutes for Law and Fire Workload	1,591,223
Total Hours of Workload	26,520
Net Employee Availability (hours) Includes Meals/Breaks	1,599.1
Utilization Rate	65%
True Employee Availability (hours)	1,039.4
Staff Needed	
Full Time Equivalent Dispatchers required baseline using CFS Work	25.5
Turnover rate	7%
FTE's Baseline Required	27.3

Importantly, both staffing models noted provide staffing estimates within a reasonable range of one another. It should be noted that the MCG planning model is based on time standards (how long a call should take overall) versus the APCO-based model (how long work actually does take overall). The purpose of using multiple models is to discover an appropriate staffing level range that can be further refined based upon operational decisions with respect to scheduling, deployment and other related efforts.

The outcome of the dispatcher staffing tables throughout this chapter showing the different modeling techniques can be summarized as follows:

Workload Based Dispatcher Staffing Estimates Based on Varied Modeling Techniques

FTE Model	Dispatcher Staff Calculation Without Turnover Consideration	Dispatcher Staff Calculation <u>With</u> Turnover Consideration
Model #1	24.6	26.3
Model #2	27.4	29.3
Model #3	18.9	20.3
Model #4	21.1	22.6
Model #5	29.8	31.9
Model #6	33.2	35.5
Model #7	22.9	24.5
Model #8	25.5	27.3
Average	25.4	27.2

The modeling techniques demonstrated reflect the baseline dispatcher staffing required based on the numerous variables presented previously in this chapter. The following important points should be noted:

- The outcomes of the models can be compared to the present dispatcher staffing levels of 34 actual and 38 authorized positions.⁹
- The model does not calculate personnel needed for management, supervision and ancillary support services (e.g. information technology).
- The full-time equivalent (FTE) baseline assumes proportional workload distributions throughout a 24-hour, seven-day period are equal over the 168-hour work week. Clearly this is not the case as workload, and the attendant staffing requirements, fluctuates throughout the day.
- The full-time equivalent (FTE) baseline assumes only dispatcher related workload, not call-taker workload currently performed by call-taker positions, often by Fire Dispatchers, and occasionally Law Enforcement Dispatchers.
- The law enforcement and fire time standards of 8.9 and 8.2 minutes, respectively, used in the MCG modeling techniques, do not reflect actual work performance but the ideal work outputs in a public safety dispatch environment. These standards may not be achieved due to a variety of factors including technical limitations in radio, phone, or CAD systems; policies which dictate communication protocols (e.g. use of “10” or “12” code versus “plain English”); community expectations relative to the amount of time spent on the phone; contract stipulations with serviced entities; officers/deputies use of Mobile Data

⁹ Includes the 7 CTO positions.

Computers (MDC) in cruisers to conduct their own records checks, clearances, etc; and a variety of other possibilities.

- As noted previously, the impact of the Utilization Rate can have a dramatic impact on staffing estimates. As shown, adjusting these rates from 50% to 65% has a notable impact on staffing.

Despite the above caveats, the FTE calculations of 25-27 dispatcher staff needed based on dispatcher staff workload exclusively can be compared to the 34-38 dispatch staff required based on Fixed-Post position analysis and the 34 dispatcher positions presently deployed. This suggests opportunities for dispatcher staffing refinement to be discussed in the subsequent Operations Chapter.

4. CALL-TAKER STAFFING IS BASED ON A DIFFERENT MODEL APPROACH.

A third model that can be used to estimate staffing needs is based on the work of Danish engineer Agner Erlang. Unlike the prior two models which estimates staffing based upon different kinds of work outputs, the Erlang model uses workload variables but the primary driver is related to developing staffing recommendations based on desired levels of performance or “response time.” In effect, the Erlang Model is a predicted performance model that calculates the probability of a certain average wait time that a caller would experience. One of the primary criticisms of the Erlang model is that it assumes an acceptable “on-hold” time for the caller. While initially this may seem to make the Erlang model impractical for use in an E-9-1-1 Public Safety Answering Point (PSAP) environment, using national or local policy-driven standards for call answering times eliminates the shortcoming of an assumed hold time. The Erlang model uses calculations to find the amount of time it takes to answer a call based on a certain level of staffing; these times can then be compared to standards to assure performance minimums are achieved. Although the Erlang model has been traditionally

used to estimate staffing needs and performance predictions for non-emergency call center operations, the input values can be manipulated such that the model is well adaptable to a Public Safety Answering Point.

As it relates to standards, according to the National Emergency Number Association (NENA), PSAPs should meet or exceed the minimum standard of 90% of E911 calls answered within ten (10) seconds and 95% of E9-1-1 calls answered within twenty (20) seconds. Local and state standards may be different but these standards should be considered reasonable operating protocols. In 2012 APCO published a paper also supporting the Erlang approach to call-taker staffing estimates.¹⁰

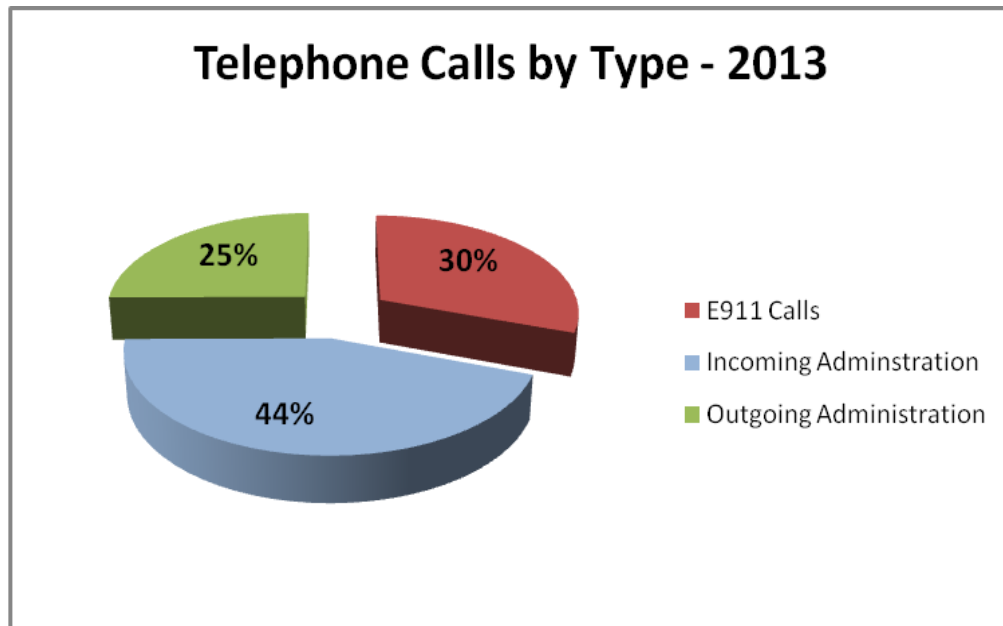
The Erlang model uses sophisticated formulae based on probability theory and Poisson distribution¹¹ which will not be explored in this report. Suffice that the model is regarded as a sound methodology.

(1) Call Workload Must be Distinguished Between E911 Calls and Other Administrative Calls for Appropriate Erlang Modeling.

While answering administrative calls is an important customer service component, it is not critical to an E911 operation and thus does not need to achieve the emergency response standards noted above. Consequently, considering the breakdown of calls by type is important prior to deploying the Erlang model. The following pie chart reflects the proportion of calls by major category:

¹⁰ Improve Your 9-1-1 Service by Answering the Phone, CDE#31806, APCO January 2012.

¹¹ The Poisson distribution is most commonly used to model the number of random occurrences of some phenomenon in a specified unit of space or time. For example, the number of phone calls received by a telephone operator in a 10-minute period.



As shown above, only one-in-three telephone calls at SR911 involve an E911 call for service. Despite this, these emergency line calls represent approximately 170,000 calls per year with total telephone transactions per day averaging over 1,500 calls per day. When recalling that SR911 currently only has three (3) full-time call taker staff and some part-time call takers, it is clear that Dispatcher staff can become preoccupied with telephone workload well beyond just dispatcher responsibilities.

(2) Present Actual and Authorized Staffing Levels for Call-Takers is Insufficient at SR911 Based on Erlang Modeling Techniques.

Given calculations of E911 call workload and length of call information based upon provided SR911 data, the following table shows the average number of call takers SR911 needs to deploy to handle E911 calls only. This is based on an average of nearly ten (10) E911 calls per half hour, an average 73 second call duration and our MCG estimate of a 15-second call wrap-up (CAD administrative time) per E911 transaction.

Erlang Modeling Table Based on E911 Activity

Incoming call rate	9.74	calls per half hour
Average call duration	88.14	seconds
Required service level <i>Probability of target answer time</i>	90.0%	
Target answer time	10	seconds
Number of Agents Required:	2	

As shown in the Erlang table above, the number of E911 call-takers (agents) required averages two (Fixed-Posts) during any given time period. This results in a staffing level of approximately ten (10) full-time E911 call-takers to achieve the recommended and noted targets which should be achieved, based on Erlang modeling, approximately 92% of the time. In sum, current call-taker staffing levels at SR911 are clearly insufficient to properly handle telephone workload and, most importantly, critical E911 telephone calls.

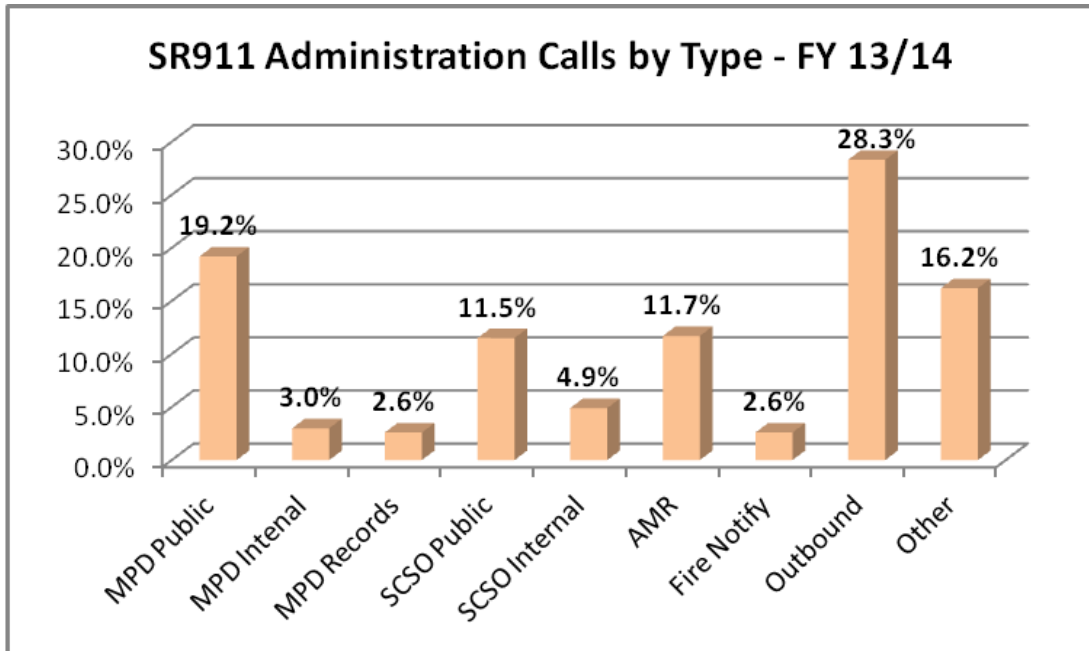
(3) Further Details With Regard to SR911 Administration Calls Indicate Other Options to Internally Handle Workload.

Administration calls are transacted on approximately 50 different trunks each with a separate definition. A review of the traffic on these trunks is informative. Those trunk-

series with 10,000 or more administration calls are defined below to provide a sense of the kinds of calls (and their inherent urgency) are transacted by SR911 call-takers and dispatchers.

- **Modesto PD Public:** Two trunks that are the seven-digit lines to SR911 for non-emergency requests for MPD service, used in lieu of E911. Approximately 63,500 calls per year.
- **Modesto PD Internal:** Two trunk lines whereby MPD staff contact dispatchers directly for information. Approximately 12,000 calls per year.
- **Modesto PD Records:** Incoming and outgoing line between SR911 dispatch and MPD Records. Approximately 10,000 calls per year.
- **Sheriff's Office Public:** Two trunks that are the seven-digit lines to SR911 for non-emergency requests for SCSO service, used in lieu of E911. Approximately 44,000 calls per year.
- **Sheriff's Office Internal:** Two trunk lines whereby SCSO staff contact dispatchers directly for information. Approximately 19,000 calls per year.
- **American Medical Response (AMR):** The Incoming and Outgoing direct ring between AMR and SR911. Approximately 45,000 calls per year.
- **Fire Department "Emergency" Notification:** Two trunks that the seven-digit lines to SR911 for fire-related reporting from citizens, alarm companies, and California Highway Patrol (CHP). Approximately 10,000 call per year.
- **Outbound Lines:** Six trunk lines dedicated to all SR911 outbound calls that may have inbound calls due to recipient calling back directly based on "caller ID." Approximately 108,500 calls per year.

This information can be translated into the following graph showing the proportion of these administration calls relative to one another.



The information above shows that there are a variety of administration call types that reflect different kinds of public safety workload that must be handled by SR911 staff. Indeed, our examination of the “Other” call types (16.2%) indicated no real opportunity to off-load those calls through a different telephone management approach such as 3-1-1 or 2-1-1 telephone answering programs.

Based on administration calls, a further use of the Erlang model can be for incoming telephone calls classified as on administrative lines. These typically do not have the same sense of urgency as E911 calls. If one additional call-taker were dedicated during busier hours to manage administration lines, this would facilitate additional internal efficiencies. However, the rapidity in which such calls would be answered declines considerably (and reasonably) compared to the E911 lines. In sum, based on Erlang modeling, two-thirds of these administrative calls would be answered within 30 seconds, with the remainder of calls being placed on hold for a period of time

or (properly) transferred to dispatcher staff to handle incoming dispatch-related inquiries from the field.

(4) Concluding Observations on Call-Taking Positions.

The information above reflects the baseline call-taker staffing required to handle both E911 and incoming administrative calls based upon the Erlang Performance Model presented. The following important points are noted:

- As in all previous models, the full-time equivalent (FTE) baseline assumes proportional workload distributions throughout a 24-hour, seven-day period are equal over the 168-hour work week. Staffing adjustments for hourly variances will need to be made.
- The Erlang Model does not accommodate for turnover and “over-fill” staffing.
- Recommended Erlang staffing levels are based upon telephone call answering performance expectations which achieve NENA recommended standards. Lowering such standards would be an important policy decision.

In summary, the use of the Erlang model demonstrates the need for additional call-taker staff at SR911.

5. THE RESULTS OF THE EMPLOYEE AND CUSTOMER SURVEY GENERALLY CORROBORATES STAFFING LEVEL FINDINGS.

The employee and customer service survey instruments used by MCG generally corroborate a perception of staffing issues. Whereas workload data suggests there are more than sufficient dispatcher staff to handle workload if they were able to exclusively focus on this type of work, incoming telephone call volumes preclude such focus given call-taker positions are significantly understaffed. This translates into various perceptions shown in the survey instruments. By example:

- 39% of employee survey respondent’s disagreed that a consistent level of service was provided. Similarly, 45% of over 180 customer survey respondents felt the same.

- 92% of employee survey respondent's disagreed that SR911 was appropriately staffed with call-takers to meet the agency's needs. Interestingly, 81% felt similarly about dispatcher staffing.
- Counter intuitively, 79% of dispatcher/call-taker staff believe, "I am often busy but can generally keep up." Approximately 4% indicate, "They are always busy and can never catch up."
- 58% of employee survey respondent's disagreed workload was equitably distributed among dispatch work stations.
- 87% of employee survey respondent's ranked staffing levels as a major factor in influencing current morale (negatively). This was the highest ranking among possible choices for factors influencing morale.
- 70% of customer survey respondent's disagreed that SR911 is adequately staffed to meet their agency's needs with 44% of these strongly disagreeing.
- Various narrative comments from the customer service survey corroborate interviews and include:
 - "They don't have enough call-takers and we end up saying traffic stops and subject stops several times. It's a huge officer safety issue."
 - "We are continually put on hold or told to 'standby' because they are on a 911 (telephone) call."
 - "Officers should never have to 'standby' while a dispatcher answers a phone/911 call!!!!"
 - "Please, time and time again we tell you. They need more people!"

In summary, based on survey quantitative and qualitative data, there is further strong evidence that there is an overall staffing issue at SR911 related to the dispatcher and call-taker positions.

6. FIRST-LEVEL SUPERVISION IS APPROPRIATE.

As shown in the Profile Chapter, there is a shift manager over each of the four shifts. These positions report directly to the Operations Manager. This supervisory structure is appropriate and consistent with best practice. In addition to line supervision

and management, SR911 is overseen by two Co-Directors. This managerial structure will also be addressed in the Operations Chapter.

7. TECHNICAL AND ADMINISTRATIVE SUPPORT STAFFING LEVELS ARE APPROPRIATE WITH POTENTIALLY ONE EXCEPTION.

As shown in the Profile Chapter, there are a variety of technical support positions supporting SR911 operations. With little exception, each position has discreet duties and responsibilities that must be performed. Currently there is a vacant radio/telecomm engineer position that was newly approved—the third of now three authorized positions. Given the new Vesta 4.0 phone system has been replaced and the P25 radio system is in the process of being replaced with a due date set in the near future, it does not seem practical to field a third radio/telecomm position until the technology landscape is refined, particularly since maintenance support is included by the vendor on some of these systems. As such, this position should not be filled until the phone and radio system has been fully implemented and operationally experienced.

8. KEY FINDINGS AND CONCLUSIONS.

Throughout the chapter a variety of findings and conclusions has been raised with respect to SR911 staffing levels. These understandings are fundamental to recommendations explored in the Operational Chapter later in this report. The following summarizes these key findings and conclusions:

KEY FINDINGS:

- SR911 currently deploys 6.5 dispatch fixed post positions. Given dispatcher annual leave, 34 FTEs would need to be authorized to provide coverage; this excludes approximately 200 hours per person in meal and break time which is often forgone at SR911. To include meal/break time in Fixed-Post staffing calculations would result the necessity of having 38 Dispatcher FTEs authorized. At the time of this study 31 Dispatcher positions and eight (8) Communication Training Officer positions (also dispatchers) were authorized with a total of 34 positions filled. In summary, SR911 authorizes sufficient staff to occupy existing Fixed-Post deployments but has not filled these positions to capacity.

- Workload can vary widely among Fixed-Post duty stations and shifts. The largest majority of incidents (81%) are related to handling Modesto PD, Stanislaus County Sheriff (and their contract municipalities), and Newman PD. Just over 12% of incidents are related to Fire / First-response medical incidents of which close to 58% of these are associated with Modesto Fire and Salida Fire. The City of Modesto Fixed-Posts are somewhat busier than other law enforcement and fire dispatcher Fixed-Posts serving the remainder of the County. Given Probation Department workload goes away during the Night Shift, the MPD duty stations are much busier during the Night than their nighttime law enforcement counterparts elsewhere in the County. Day Shift has 55% more incident workload than Night Shift. There are more County Probation incidents than Fire incidents in the 10 am to 2 pm timeframe. Unlike two Fixed-Post fire positions, there is presently no fixed post position for County Probation which is handled by the Sheriff's Fixed-Post dispatchers.
- While the discrepancy between law enforcement and fire workload may at first appear alarming, Fixed-Post fire dispatchers are also back-up call-takers, and while this was intended to be a secondary duty, given the number of call-taker positions SR911 currently has deployed this occupies a significant amount of fire dispatcher time.
- Based on workload modeling exclusively for dispatch-related tasks, the FTE calculations of 25-27 dispatcher staff needed can be compared to the 34-38 dispatch staff required based on Fixed-Post position analysis and the 34 dispatcher positions presently deployed at SR911. This suggests opportunities for dispatcher staffing refinement.
- Erlang staff modeling for call-taker positions results in the need for approximately ten (10) full-time E911 call-takers to achieve the recommended NENA response targets. In consideration of the call volume for administrative calls, an average of one Fixed-Post position could be deployed for these types of calls, requiring five (5) additional call-taker positions. In sum, current call-taker staffing levels at SR911 which are authorized at four (4) full-time positions are clearly insufficient to properly handle telephone workload and, most importantly, critical E911 telephone calls.
- The employee and customer service survey instruments used by the Matrix Consulting Group generally corroborate a perception of staffing issues.
- Staffing with respect to administrative and technical positions is appropriate; however the vacant radio/telecomm position should be frozen for the immediate future until forthcoming telephone technology upgrades are fully addressed.

KEY CONCLUSIONS:

- Based on dispatcher workload tasks exclusively, there is insufficient workload to fully occupy 6.5 Fixed-Post staff positions and the attendant 34 to 38 authorized positions that would be required to staff these Fixed-Posts.
- Unlike dispatcher-related workload, there is telephone call workload that is far in excess of the present capabilities of authorized full-time call-taker staff. Even in consideration of part-time call-taker assistance, call-taker positions can be inundated, leading to perceived customer service issues.
- Current dispatcher staff are not only devoted to core dispatcher duties and responsibilities, but also call-taking efforts as well. This is particularly the case for the two fire Fixed-Post positions. This call-taker workload that is allocated to dispatcher staff is presently occupying dispatcher time in a fashion that is leading to customer service complaints. This is reflected in both the customer service survey and interviews.

- Operational changes need to be explored to address the current workload imbalances. These could require important shifts in operational strategies, policy changes, and agreements with end-user public safety partners.

The following chapter discusses technology-related aspects of SR911. With the foundational understanding of staffing and technology, key operational changes are then discussed in the subsequent Organization and Operations Chapter.

6. TECHNOLOGY ANALYSIS

The following chapter focuses on the Matrix Consulting Group's (MCG) analysis of SR911 technology. Included within is our analysis, findings, conclusions and recommendations. Summary information with respect to particular technology elements is noted in the prior Profile Chapter.

1. OUR PROJECT TEAM FOCUSED ON KEY TECHNOLOGY QUESTIONS.

As a part of our research and data gathering, we reviewed SR911 from a technological point of view. The purpose of this review was to assess SR911's position as it related to:

- What new technologies will need to be addressed to account for growth and ensure a full service capacity?
- What radio and associated transport system is in place and could be required in the future?
- Is existing technological equipment acceptable or is new equipment necessary?
- What are the current GIS and mapping capabilities and future requirements, and how do they integrate into the various CAD packages? What changes to CAD / RMS overall should be anticipated?
- What are the number of consoles and other devices?

Additionally, we reviewed the following possible issues:

- Cell phone calls (wireless) to 9-1-1 are first routed through the regional California Highway Patrol (CHP) dispatch center. The process of the CHP frequently transferring calls to SR911 or AMR based on the needs of the reported incident may be affecting response times and the overall efficiency of the 9-1-1 call handling process.
- Many seven-digit telephones are routed from varied sources into SR911, so that it is handling a large number of non-emergency calls.

- SR911 currently uses a Tiburon, DispatchNow, CAD system. There are reported issues with features and functionality of the system.

MCG addressed these questions with key SR911 staff during interviews held on September 30, and October 1, 2014. During this process, we met with the following SR911 personnel who provided important feedback with respect to technology.

Staff Interviewed Regarding SR911 Technology
Sarah Kamienski, GIS Specialist
Marie Collins, MSAG Coordinator
Darren Eudy, CAD Engineer
Rebecca Leonardo, Network Engineer
Marie Collins, MSAG Coordinator
Kurt Kline, Radio/Telco Engineer
Nate Olson, Radio/Telco Engineer
Wendy Silva, SR911 Operations Manager
Cecil Ridge, Co-Director
Mike Parker, Co-Director

Beyond the interviews noted, staff above were interviewed an additional 1-2 times to get further feedback regarding SR911 technology, operations, and other issues.

2. AS IN MANY DISPATCH CENTERS, SR911 TECHNOLOGY IS DIVERSE AND HAS STRENGTHS AND OPPORTUNITIES FOR IMPROVEMENT, MANY OF WHICH ARE BEING ADDRESSED.

This section of the chapter presents a brief review of our findings as it relates to some of the specific systems utilized by SR911 and the system's current situation and status. Information contained in this section was acquired based on interviews, tours and other data gathering techniques. In this section, we do not attempt to recapitulate all technological and related operational facets of SR911, but those that are key to operations.

Importantly, we note that SR911 is fairly well positioned from a technology perspective. Enhancements in the areas of 9-1-1 call talking and two-way radio technology, as well as the operational control of the GIS function, are examples of good

technological positioning.

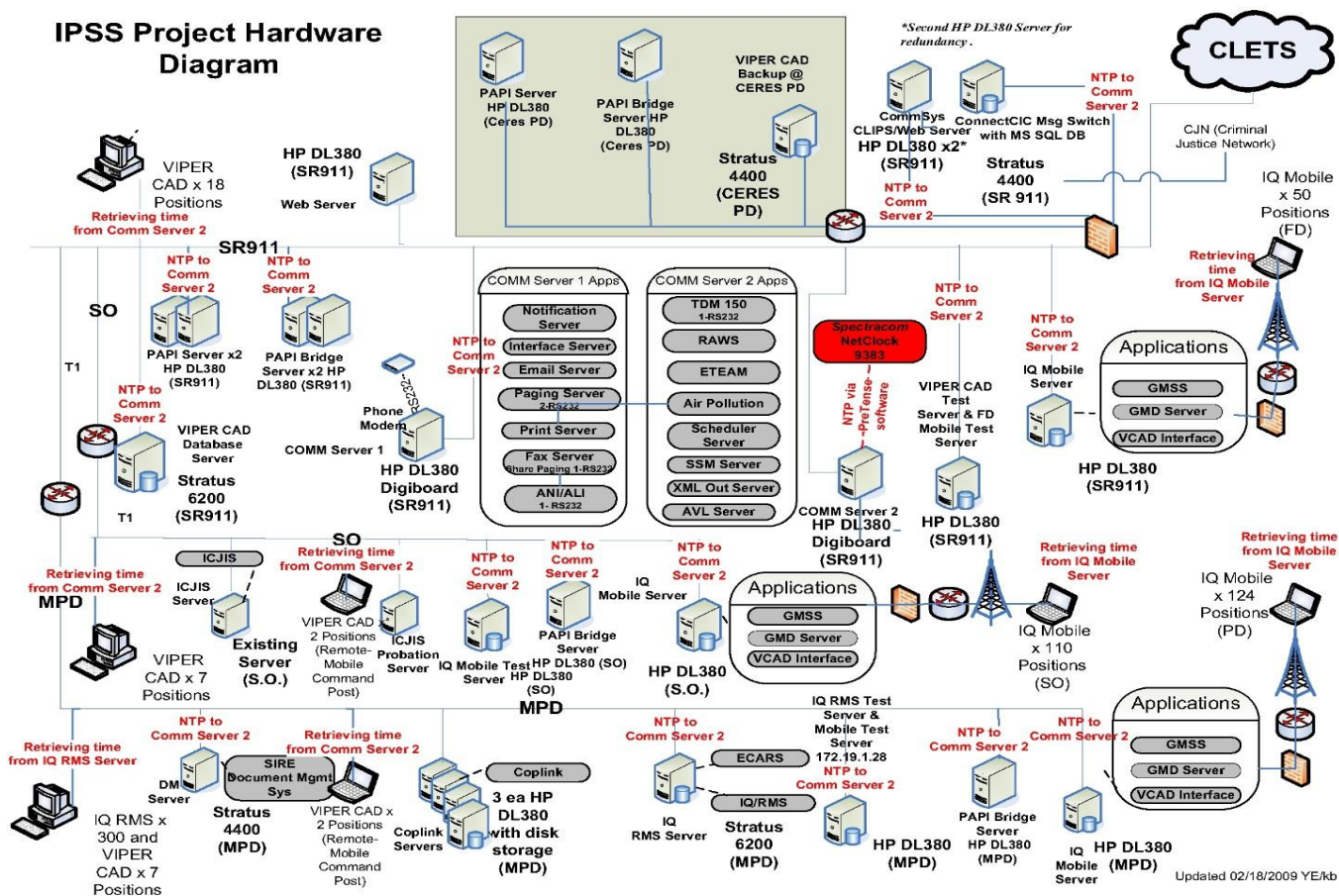
For example, the new phone system is NG 9-1-1 capable. The system is also expandable. Once the State notifies the County that NG 9-1-1 service may be delivered to the Center, interfacing and accepting the Internet Protocol (IP) based digital transport of 9-1-1 calls, should not be an issue. Additionally, the radio system enhancement of a P25 digital trunked system is underway. Other technological areas of 9-1-1 call taking and dispatching that we believe require additional support are noted under the “Key Findings and Conclusions” heading in this section.

(1) Computer Aided Dispatch (CAD)

SR911 uses the Tiburon DispatchNow CAD system. The CAD system was implemented in June of 2012 and was a replacement from their older PRC CAD system. The system incorporates multiple interfaces including interfaces to Records Management Systems (RMS), Automatic Vehicle Location (AVL), E911 Phone system, Radio Console (TDM-150), California Law Enforcement Telecommunication System (CLETS) Message Switch, Hiplink text/paging system and Air Pollution. The system is perceived as operational but reported issues and problem resolution is ongoing. This opinion is further substantiated in the employee survey whereby 45% of respondents disagree that they have the proper tools and technology necessary to effectively do their jobs. It is enlightening to also note that 61% of respondents indicated “poor equipment” is a major factor in deleterious morale.

SR911 personnel continue to work with Tiburon to resolve the issues and complete the implementation to their satisfaction. Version DispatchNow 2.0 is planned for installation once the current version is completed. The following diagram depicts the

IPSS Project Hardware Diagram



The current GIS system utilized by SR911 personnel is an ESRI (Environmental Systems Research Institute) based 10.2.2 ArcGIS Online, hosted system. Extensions include 3D Analyst, Network Analyst, Spatial Analyst, Workflow Manager, and Maplogic Layout Manager 4.1. The ESRI ArcGIS system provides the infrastructure for making maps and geographic information available to SR911 and their associated agencies. Additionally, the SR911 GIS function provides map information to other agencies, such as the Stanislaus County Department of Public Works.

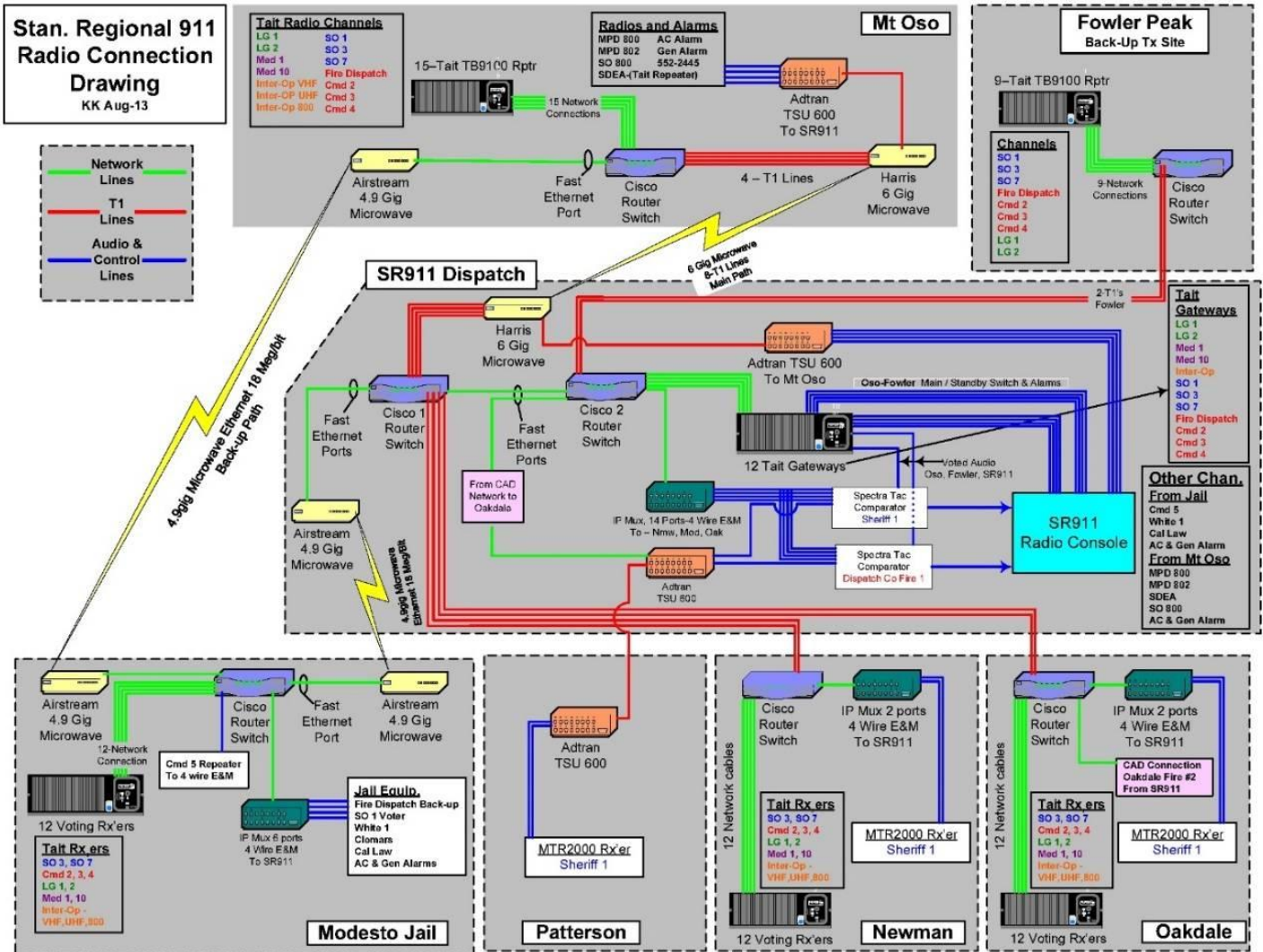
(3) Radio Systems

The current two-way radio systems used by agencies dispatched by SR911 are comprised primarily of multiple, discreet channel radio systems, on multiple frequency bands. The systems are controlled by bringing audio and control circuits back to SR911 and using the Orbacom radio console to control and interconnect them as needed. Like the telephone system, a new radio system is in the process of being implemented. The new system is a 700/800 MHz Project 25 (P25) digital system. The new radio system uses a Tait infrastructure and is comprised of a 5 site, 5 channel simulcast system. The system is capable of expansion beyond its initial design as users are added. Radio personnel have accounted for interim patching of existing systems and the P25 system to allow for the transition to the new system and operation of the new system in conjunction with existing systems.

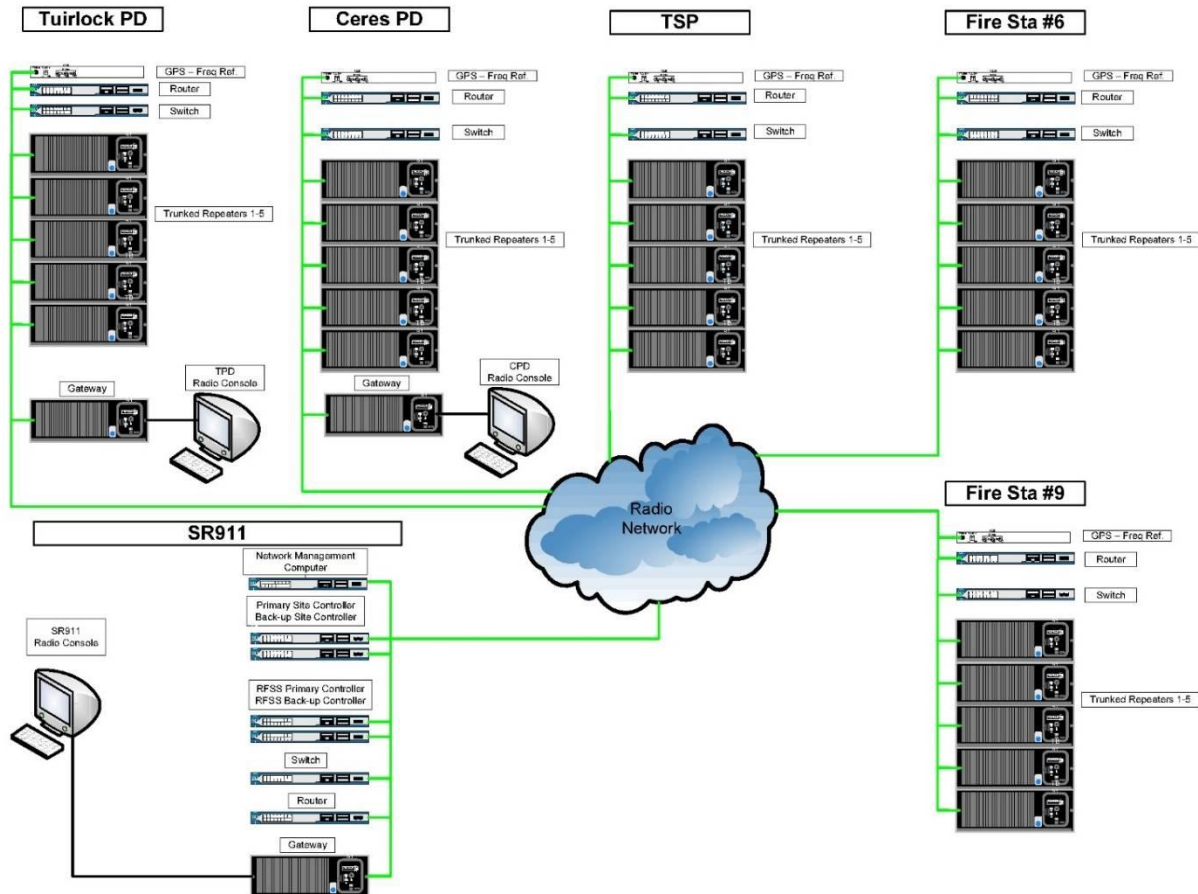
(4) Radio Console

The radio console equipment used by SR911 provides for the control of the multiple existing systems and the patching of channels and systems as required by operational needs. The existing Orbacom (now IPC) TDM150 console has 32 channels and 12 positions. The Orbacom console equipment is no longer manufactured. The following diagrams present an overview of the existing and future radio system design.

Existing Radio System Connectivity



New P25 System Design



(5) 911 Phone System

The current phone system has been replaced with a new Vesta 4.0 system (now owned by Airbus DS). The implementation was completed in the winter of 2014. The new system will provide advanced features including the positioning of SR911 to accommodate Next Generation 9-1-1 (NG 9-1-1) technology. Enhanced capabilities of NG 9-1-1 will include the ability for digital delivery of all 9-1-1 calls directly, eliminating

discreet 9-1-1 circuits, and the ability to accept text and data, including digital photos and video as procedures and policies may allow.

The SR911 center has a total of 18 physical call-taking and dispatch positions. Eleven (11) are full positions that include CAD, radio and phone system capability. The remaining seven positions are “Call Taker” positions and have phone system and CAD capability. The phone lines coming into the Center includes 20 CAMA 911 trunks, divided into four dedicated groups.

- Fourteen (14) lines are Modesto/Stanislaus County 911 lines;
- Two (2) Stockton 911 lines;
- Two (2) Santa Clara 911 lines;
- Two (2) San Andreas 911lines.

There are approximately 50 “administrative trunks” that appear in the SR911 Center. They are a combination of non-emergency and emergency lines. Of these, two lines are used for calls transferred from the California Highway Patrol. CHP transfers are typically delivered over the 911 trunks. However, some exceptions such as 911 calls routed to an adjacent CHP dispatch center located outside of the local Central Office area, may require a 10 digit transfer which is accomplished over these lines.

One line is used for calls between SR911 and AMR. Two lines are used as Fire, 10 digit emergency lines. Two lines are referred to as “VoIPXFR” and are used, as an exception to direct 911 calls by VoIP vendors, to transfer emergency calls to the Center. The approximately 43 remaining lines are essentially non-emergency lines. Of the remaining lines, six lines are “outbound”, however if someone is called on these lines they may use caller ID and return the call on the same line.

3. WIRELESS CALL ROUTING IS PROBLEMATIC AND SHOULD BE RESOLVED.

The current environment of 911 call routing and handling in Stanislaus County today includes two Public Safety Answering Points (PSAPs), and one secondary PSAP. The primary PSAPs that receive the initial 911 calls are the California Highway Patrol (CHP) for most wireless (Cell phone) calls¹², and Stanislaus Regional 911 (SR911) for all landline (conventional, wired telephone lines) and Voice of Internet Protocol (VoIP) lines. With the exception of incidents that only require the California Highway Patrol to respond (such as some highway traffic accidents), wireless 911 calls that route to the CHP and that may involve other law enforcement, fire and/or emergency medical services (EMS) are transferred accordingly. Medical calls that are answered by CHP may be transferred directly to the privatized AMR, which is considered a secondary PSAP. All other calls (other law and all fire) are transferred to SR911 by the CHP.

Calls received by SR911 that are determined to be traffic accidents in CHP jurisdiction and require only CHP response, are transferred to CHP. Medical calls are transferred to AMR unless classified as “life threatening” in which case fire units will concurrently respond to render aid. It is our understanding, if there is any perceived possibility that a medical call may require a law enforcement and/or a fire response, SR911 staff will listen to the transferred call until a determination is made, and SR911 will dispatch other agencies as required.

Call routing, the method by which a 911 call is directed to the most appropriate PSAP to handle the caller’s emergency, is typically based on the physical location of the caller. Call handling differs from call routing and is the activity that occurs with the call

¹² SR911 directly answers Cricket, Team Mobile, Metro PCS, and Sprint calls.

once it reaches the call-taker position. In many cases the call is entered as a call for service in the CAD system and routed to the correct dispatcher to be dispatched to the field units. In other cases, the call may be transferred to another PSAP, a secondary PSAP or even transferred to another call-taker within the same PSAP. The primary focus on call routing for SR911, relates to the separation of “wired” or landline calls, which are routed to SR911 and wireless cell phone calls that are directed to the CHP.

In jurisdictions where one PSAP dispatches for all of the emergency service providers (Law Enforcement, Fire, EMS) in a specific geographic area, the call routing can focus entirely on the location of the caller and in most cases, it will get the caller to the correct PSAP without any need for the call to be transferred to any other PSAP. The routing becomes complicated, however, when the same geographical area is serviced by more than one PSAP with overlapping dispatching responsibilities. This is the case in Stanislaus County.

Across the Country, there are various configurations of PSAPs, which determine 911 call routing and call transfers. ***The primary best practice is to minimize the number of call transfers between PSAPs.*** In our experience with many PSAPs across the Country, eliminating call transfers is a significant concern. Transfers are frequently one of the primary rationales when a region is considering PSAP consolidation. Call transfers add time to the overall call handling process, which ultimately delays the response by an estimated 30 seconds per call transfer. From an efficient delivery of emergency services perspective, it is less than ideal to transfer a caller to another PSAP when the reporting party may need immediate assistance. It is,

however, not always feasible to eliminate call transfers completely, so many PSAP configurations across the Country still incorporate transfers, often to secondary PSAPs.

According to the *2012 Consolidation Feasibility Study for the State of Connecticut*, “Approximately, 60 percent of the PSAPs statewide provide dispatch services for all three public safety disciplines: law enforcement, fire and EMS. Approximately ten percent of the PSAPs transfer law enforcement calls, 15 percent transfer fire related calls, and 25 percent of the PSAPs transfer EMS related calls to a secondary PSAP for dispatch and/or EMD. These percentage groupings total more than 100 percent since each percentage grouping is not mutually exclusive of the others as all PSAPs do not provide service for police, fire and EMS.”¹³ In effect, nearly half of all PSAPs are transferring calls despite the fact this is inconsistent with best practices.

Each County and municipality is tasked with determining which configuration will work best for their population and their Public Safety agencies. As noted above, the ideal configuration is one that handles the 911 calls quickly and efficiently with as few transfers as possible (understanding that transfers are rarely avoided entirely). Consequently, SR911 should look closely at its call routing protocols to determine ways to minimize time lost as a result of transfers between public safety agencies.

Although the benefit of reducing call transfers by changing the routing of wireless calls seems clear, the impact to SR911 of receiving all wireless calls, currently routed to the CHP, requires further analysis. A primary factor in the decision to change the routing of the wireless calls is the potential increase in 9-1-1 traffic and the potential impact on workload. Currently SR911 receives all of the wireless 9-1-1 calls that require

¹³ Study can be found at http://www.ct.gov/despp/lib/despp/oset/rpt120118srw_state_of_connecticut_consolidation_feasibility_study_finalv2.pdf.

resources dispatched by SR911. However, the number of wireless calls that the CHP may be currently “screening” and not transferring to SR911 is not clear. These screened calls may include:

- Unintentional calls to 9-1-1, which may require a call-back.
- Abandoned or disconnected 9-1-1 calls that may require a call-back.
- Multiple calls for the same incident (often a traffic accident or a fire creates numerous calls for the same incident).
- Calls that will need to be handled only by CHP or AMR

The impact of possible increased traffic may affect the workload of SR911 and also may require the addition of “wireless” Centralized Automatic Message Accounting (CAMA) trunks (usually provided as a separate group of trunks), which is an additional ongoing cost. We understand that the 9-1-1 Coordinator requested this traffic data from CHP for potential further analysis, but has not received it as of this writing.

4. KEY FINDINGS AND CONCLUSIONS.

Throughout the chapter a variety of findings and conclusions has been raised with respect to SR911 technology. These understandings are fundamental to recommendations shown below and further explored in the Operational Chapter later in this report. The following summarizes these key findings and conclusions. Each element in this section begins with a statement of the issue or question, provides our findings and conclusions related to that issue and if appropriate, is followed by the associated recommendation.

- (1) What new technologies will need to be addressed to account for growth and ensure a full service capacity and: is existing technological equipment acceptable or is new equipment necessary?

KEY FINDINGS:

- SR911 is fairly well positioned from a technology perspective. For example, the new phone system is NG 9-1-1 capable. The system is also expandable. Once the State notifies the County that NG 9-1-1 service may be delivered to the Center, interfacing and accepting the Internet Protocol (IP) based digital transport of 9-1-1 calls, should not be an issue. The benefits of NG 9-1-1 are significant in many ways, including the flexibility of seamlessly transferring 9-1-1 calls to the backup center when needed. NG 9-1-1 will also offer the delivery of Text (SMS or Short Message Service) messaging, digital media (MMS or multimedia messaging service) such as photos and video. Accepting the new communication media will require developing policies and procedures as well as training, before those NG 9-1-1 features are accepted by the Center. There appears to be little knowledge of the State NG 9-1-1 project or timeline within SR911.
- The CAD system has not met the expectations of SR911 personnel or management. A number of functionality issues, including falling short of SR911 expectations with multi-agency capability and flexibility, and numerous other technical issues, have created a lack of confidence of SR911 personnel regarding the abilities of the system. Some progress is reported by SR911 management in moving toward mitigating some of these issues. SR911 personnel continue to work with Tiburon to mitigate these issues as much as possible.

KEY CONCLUSIONS:

- SR911 is working toward implementation of up-to-date technologies but must demonstrate more assertive due-diligence with respect to resolving long-standing technology issues.
- Information suggests there is further opportunity to more closely manage the resolution of outstanding issues with CAD implementation and shortcomings. Support for increased assertiveness toward resolving continuing issues is warranted.
- Resolution of CAD-related issues with the vendor should be managed and tracked consistent with project management principles, treating the CAD implementation as an unfinished project requiring close scrutiny until all “punch list” items are resolved.

Recommendation #1: Designate appropriate personnel to interface with the State NG9-1-1 project and to participate in the project as much as possible. Plan for receiving NG 9-1-1 capabilities including text and digital media, by developing policies and procedures and develop training. Work with other PSAPs that accept NG 9-1-1 technology to help to understand any potential impact to SR911 resources.

Recommendation#2: Continue to work with Tiburon to achieve the desired features and functionality expected from the product.

Recommendation #3: Perform a thorough legal review of all current Tiburon contracts and agreements. The review should identify all terms and conditions that Tiburon should be meeting. An analysis of the state Tiburon’s meeting those conditions should be documented.

Recommendation #4: Review SR911's internal project management structure and process for the Tiburon implementation and problem resolution tracking. The output of the contractual review, and the definition of key existing issues, should be incorporated into a formalized and structured process for problem resolution.

Recommendation #5: Set a specific date that, if SR911 management and Board believe that Tiburon has not yet met its contractual obligations, or if there remains irresolvable and extensive dissatisfaction with Tiburon as the CAD product to achieve SR911's operational requirements, prepare for and release a Request for Proposal to replace the Tiburon system.

Recommendation #6: In the event Tiburon CAD replacement is warranted, explore legal action alternatives whereby SR911 legal counsel identifies and concurs with any potential contractual liability that can be recompensed.

(2) What radio and associated transport system is in place and could be required in the future?

KEY FINDINGS:

- The current two-way radio systems used by agencies dispatched by SR911 are comprised of multiple, conventional channel radio systems, on multiple frequency bands. The systems are controlled by bringing audio and control circuits back to SR911 and using the Orbacom radio console to control and interconnect them as needed. A new radio system is in the process of being implemented and has been underway long term. An equipment replacement policy, that would include periodic replacement funding, is not in place. Radio funding has in large part been grant funded.
- Our "Key Findings" for Radio Systems points out that the existing radio systems are on multiple frequency bands and are individually brought into the SR911 system for control by Dispatch. The present model involves each agency supplying its own radio system and being responsible for the operation and maintenance of those systems. SR911's involvement with the systems is specific to the operation from a dispatch perspective. The Radio personnel provide operational support for that interface function. Given diverse ownership, funding for replacement of these assets is not centrally determined. If the agencies are interested in a coherent, interoperable radio system, then governance and funding structures for a regional radio system should be explored.
- The lack of a planned replacement funding mechanism places public safety communications in some jeopardy. Significant dollars are expended for radio communications systems. Our experience is that this finding is not unique to SR911. Usually the purchase of a new communication system is in the range of 10's of millions of dollars. Many agencies find themselves in a difficult situation when the system reaches its expected end of life and there are no replacement funds. Systems will generally begin to have accelerated failures over time.
- The Orbacom radio console equipment is well beyond its "end of life" and is no longer manufactured. The current console system is well maintained and operated by the SR911 radio technicians. As time goes on, parts to expand or repair the system will become harder to find. New radio system console and switching technology is available. The newer systems typically employ Internet Protocol (IP) technology and provide greater functionality and less hardware to maintain. The potential for system failures and the decreasing ability to maintain the system creates a risk for SR911 and their user agencies.

KEY CONCLUSIONS:

- Users will begin to lose confidence in the reliability of the communications system. The SR911 will eventually be placed in the difficult situation of having to “bond” or lease, at significant cost, a new radio system unless replacement funding is considered.
- The potential for radio console system failures due to the “end of useful life” and the decreasing ability to maintain the system creates a risk for SR911 and their user agencies.

Recommendation #7: Initiate a planned radio equipment replacement policy, including a process and a funding mechanism. If the agencies are interested in a coherent, interoperable radio system, then governance and funding structures for a regional radio system should be explored.

Recommendation #8: Replace the existing Orbacom Console equipment with modern technology. Develop a Request for Information to estimate the cost, acquire the funding, and release a Request for Proposal for the acquisition of the system.

- (3) What are the current GIS and mapping capabilities and future requirements, and how do they integrate into the various CAD packages? What changes to CAD / RMS overall should be anticipated?

KEY FINDINGS:

- The current GIS system utilized by SR911 personnel is an ESRI (Environmental Systems Research Institute) based 10.2.2 ArcGIS Online. There are dozens of GIS systems available in the marketplace. ESRI systems are one of the most common mapping programs used by Emergency Call Centers such as SR911. Typically the use of a particular GIS product is the result of a de facto product standard within a municipality, county or region. ESRI prides itself on being “Standards Based” and open, and participates in many GIS standards organizations. Based on our experience, we believe it would be hard to find a viable CAD system that does not have a method to convert or directly utilize ESRI based data.
- SR911’s having an internal GIS/mapping resource is a great benefit to the Center. Typically we find that a PSAP has little or no ability to update or create maps or layers. The mapping function is usually provided by an agency or department that has other priorities and objectives that are of greater importance to that agency. This often creates a situation where the PSAP is utilizing obsolete maps and frequently unable to obtain a new map layer or correct known errors in a timely manner. In the case of SR911, the center is leading the creation and updating of mapping.

KEY CONCLUSIONS:

- ESRI is compatible with a large number of formats and platforms. Consequently, the current CAD system used by SR911 has tools to convert the ArcGIS output to the Tiburon Map system, as necessary.
- In the case of SR911, the center is leading the creation and updating of GIS mapping.

(4) What are other technology issues of importance that should be addressed?

KEY FINDINGS:

- Although the benefit of reducing call transfers by changing the routing of wireless calls seems clear, the impact to SR911 of receiving all wireless calls, currently routed to the CHP, requires further analysis.
- As shown in the staffing chapter, many seven-digit telephones are routed from various sources into SR911, so that it is handling a large number of non-emergency calls. Different methods to address this call volume should be explored.

KEY CONCLUSIONS:

- The State of California recognized they were experiencing issues with wireless 911 call routing and embarked on a project, called Routing on Empirical Data (RED), to improve accuracy. The project used historical call data to determine how best to route wireless 911 calls. The project began in 2008 and was time and labor intensive, as well as costly. It did, however, appear to have a positive impact. As of 2011, “The 4.9 million unanswered calls per year statewide in 2007 have dropped to 639,000 since the RED Project began.” (Emergency Management, 2011). California’s RED project allowed the participating agencies to make decisions on how to route wireless 911 calls based on actual historical call data rather than solely on location, and is available to SR911 as a framework for future decision-making.
- The current phone system provides three (3) ring types. The ring types would help distinguish an emergency (9-1-1) call from a 10 digit line. However, some of the lines defined as 10 digit emergency lines may have the same ring type as a non-emergency line. The new phone system under implementation may provide additional flagging of 10 digit lines that are considered “emergency” lines.

Recommendation #9: Work with the California Highway Patrol, acquire the wireless call data and analyze the probable workload and technology impacts with the framework of the RED study. Position SR911 to accept the calls, as practical, to avoid unnecessary call transferring.

Recommendation #10: Review all 10 digit lines, remove or consolidate 10 digit lines as possible. Determine if SR911 is handling calls that may be directed to other departments or agencies and, where feasible, establish new call handling policies for those lines. Apply new phone system capabilities to distinguish between emergency and non-emergency calls by ring types and visual flagging, as much as possible.

7. ORGANIZATION AND OPERATIONS ANALYSIS

The preceding chapters with respect to surveys, staffing and technology resulted in findings and conclusions that have laid the groundwork for a better understanding of SR911 organization and operational strengths and opportunities for improvement. There can be little argument among any service provider that an ultimate goal is to deliver *the most productive level of service to the consumer*. This essentially translates into the most effective (i.e. quality) level of service that can be provided in the most cost-efficient manner. And while cost is quantifiable, effectiveness elements have important quantitative and qualitative characteristics. As a consequence, agreeing upon what is “most productive” is often arguable, as service providers’ interpretation of quality can differ, let alone *what types of services should be offered*. Customers’ perception of quality and cost can also differ dramatically. Nevertheless, there are some fundamental frameworks upon which nearly all public safety service delivery professionals can agree, and as such, they can help the decision-making process.

1. FOUR FRAMING ELEMENTS FOR DISPATCH ORGANIZATIONAL AND OPERATIONAL REVIEW.

To help frame decision-making for alternative approaches to SR911 dispatch service delivery these *Four Framing Elements* are critical in developing the analysis which follows.

- **It is Crucial to Minimize Delays in Public Safety Service Response for Effective Service Delivery to the Community.** As noted in detail throughout the body of this report, the impact in delivering timely public safety personnel and apparatus to a call for service scene can be critical. It should be considered an imperative service delivery goal, particularly with respect to the highest priority requests for service.
- **Highly-Trained Professional Dispatchers Employing Consistent Protocols are the Ideal Solution to Effective Public Safety Service Delivery.** Those that

make a full-time profession providing public safety dispatch services are typically the most well-trained and thus reliable dispatcher staff. There are assignment approaches in effect throughout the country which use part-time dispatchers positions, sworn staff on temporary assignment, and staff that are performing multiple assignments at a single duty station (i.e. concurrently dispatching fire, medical, EMS and call-taking). While these models work, and by necessity must be used all of the time or part of the time in some (particularly smaller) locales, the ideal model is deploying a fully-trained dispatcher professional able to focus on a few key service delivery tasks.

- **In an Era of Government Fiscal Constraint, Taxpayers Deserve Highly Effective Dispatch Services at the Most Reasonable Cost.** Performing effective dispatch service at the most reasonable cost should be considered a vital few priority. This requires careful balancing of operating costs against service level requirements and requires some of the most difficult decisions in a dispatch organization.
- **Operational Changes from Alternative Dispatch Delivery Initiatives should have a Net Operational Benefit to Public Safety Services Overall.** Determining “net” benefit is not only a quantitative effort but a qualitative effort as well. Agencies and customers with disparate needs will judge this differently. Nevertheless, it is important to attempt to articulate the “net benefit” from any operational or organizational change.

Based on this framework, and using these essential elements as core principles, the Matrix Consulting Group will provide organizational and operational modifications for consideration in this chapter. Our analysis is presented in the following sections.

2. GUIDING PRINCIPLES FOR EFFECTIVE ORGANIZATIONAL STRUCTURES.

The purpose of an organizational structure is not only to provide the traditional command and control of an agency, but also to help define job duties and responsibilities, ensure efficient and effective workflow, establish a reporting hierarchy, and ultimately determine appropriate lines of authority and accountability. To accomplish this, the design of an organizational structure and placement of employees within the organization should be established on general principles that provide the

organizational cohesion necessary to accomplish the primary mission of the work unit, in this case, Stanislaus Regional 911. These organizational principles include:

- **Responsibility & Authority:** A structure must have clear lines of responsibility to accomplish the mission and goals of the organization; and the authority within the organization to manage assigned operations to accomplish the organizational mission and stated goals.
- **Accountability:** A structure that provides clear lines of accountability among management and supervisory staff. While this is highly dependent upon the individuals assigned to the functions, the organizational structure itself should facilitate, and not impede, general supervision of employees and the daily performance of an organization.
- **Complementary Functions:** Like functions are grouped together to support regular interaction for planning and scheduling approaches and for effective service delivery.
- **Coordination of Work Efforts:** The organizational structure should facilitate communication and working relationships among staff and work units. Many functions need close or indirect alignment in order to maximize efficiency and effectiveness. The structure should also provide easy identification of job function to people outside the organization, including other government partners and user agencies.
- **Degree of Organizational Risk:** This relates to how much risk a function incurs if an activity is not performed or is performed poorly. Risk might involve operations, consequence of error, or service level concerns. Generally, higher risk functions have closer management oversight.
- **Degree of Public Scrutiny:** This factor is concerned with the degree to which public attention is routinely paid to a given activity. Activities with potentially high public scrutiny, such as a communications center, are best performed under closer supervision.
- **Supervisor & Management Span of Control:** This relates to whether supervisors are fully devoted to overseeing a select few primary activities or a broader set of duties and responsibilities. Appropriate spans of control are related to both the number of staff directly supervised as well as the complexity of activities overseen.
- **Degree of Centralization:** The geographic or physical dispersal of functions also relates to supervisory and management requirements – the greater the level of physical decentralization, the greater the number of managers and/or supervisors are generally required.

These important principles provide guidance with respect to determining various organization and operational changes as discussed below.

3. SR911 IS WELL POSITIONED TO TRANSITION TO A CIVILIANIZED DIRECTORSHIP.

As shown in the profile chapter, SR911 currently has a shared directorship with a SCSO and fire services representative sharing executive responsibility. SR911 has been under the oversight of both sworn and civilian directors, but has operated under the sworn model for several years.

One of the issues identified during the course of this study was to determine the benefits and disadvantages of the directorship being a sworn position or a civilian position. The project team evaluated the pros and cons of a sworn manager compared to a civilian manager. In this regard, it is important to note that none of the items are a reflection of the interest and performance of existing sworn personnel currently assigned. These co-directors are credited with taking a direct interest in trying to stabilize the SR911 work group, decrease the number of vacant positions, and provide a positive work environment.

Some of the “pros” and “cons” relating to this director position being filled by a sworn manager or a civilian manger are listed below.

(1) Generally Perceived Pros and Cons of a Sworn Dispatch Director.

- Pros:
 - Thorough knowledge of field services public safety needs;
 - Good relationship with sworn staff;
 - More able to deal with sworn supervisors to resolve problems/issues between the Dispatch organization’s staff and sworn staff;

- A perception of being more able to be an advocate for the Dispatch organization within the primarily sworn management structure of the user agencies.
- Cons:
 - Typically not trained as a dispatcher, so has less knowledge of dispatch operations, functions and technology than a civilian dispatch professional;
 - Oftentimes the sworn person assigned to Dispatch would rather be in a different assignment, leading to a lack of personal interest and investment in the dispatch assignment;
 - A duty assignment rotation of three years is not long enough to understand, plan, develop and implement multi-year projects (such as technology initiatives) or understand all nuances associated with managing this specialized profession.
 - May have conflicting priorities as a consequence of additional ancillary or tertiary duty assignments (SWAT, Canine, Training, etc.).
 - In a multi-jurisdictional dispatch agency serving several different clients, may be perceived as being beholden to their own agency executives as opposed to the dispatch centers governing board or other clientele.

(2) Generally Perceived Pros and Cons of a Civilian Dispatch Director.

- Pros:
 - Professionally trained as a dispatcher and supervisor, so will have specific preparation to manage a dispatch organization;
 - Intimately familiar with the hardware, software and other special technologies in a dispatch center;
 - Personal identification with the line dispatchers having gone “through the ranks;”
 - Educated specifically in the dispatch/communications field and the attendant knowledge base, typically will have better technical skills than sworn counterparts;
 - Dedicated exclusively to the dispatch/communications profession, resulting in progressive knowledge of the field;
 - The civilian classification of the executive management position provides a career path for civilians. According to APCO’s most recent survey, the tenure of a Director averaged 14 years of service in their communications centers.

- Generally less expensive compensation packages compared to sworn counterparts.
 - Cons:
 - Not a sworn employee, so will likely have to work diligently develop and maintain a good relationship with sworn field staff;
 - May not be as willing to deal with problems/issues with sworn staff that affect the dispatchers.
 - May not have a good grasp of the field's public safety culture.
- (3) An SR911 Civilianized Director Advantages Outweigh Those of the Current Sworn Co-Director Model.**

The current co-director model suffers from some difficulties as outlined in the previous guiding principles. With regard to *Responsibility & Authority*, staff that report to two different positions of equal authority can be problematic and exacerbate effective communications. With respect to *Accountability*, it is difficult to hold persons accountable when there are no clear lines of authority and accountability in the shared leadership model employed at SR911; there is no place where “the buck stops here.” As it relates to *Coordination of Work Efforts*, it is again difficult to communicate the same message to different managers with the same responsibilities but different schedules, focus, knowledge, skills and abilities. This can impact the coordination that would result in the most efficient and effective work efforts and resulting outcomes.

While a person who has good inter-personal relationship skills and leadership abilities can be found in both sworn and civilian ranks, there consequently is no “right answer” with respect to sworn or civilianized dispatch organization directorships. Nevertheless, according to APCO’s most recent survey, 59% of managers/directors are

civilian.¹⁴ Furthermore, there is a significantly greater likelihood of finding a technically competent and potentially long-term civilian dispatch professional director (someone who is a career professional and intends to stay in the profession) than sworn staff who are directly employed by one public safety agency and are rotated through the position on an impermanent assignment.

Based on our interviews, the survey responses, and our knowledge of scores of dispatch agencies throughout the United States, overall the project team believes that a single civilian director for SR911 provides the best option for long-term executive management of the agency. While the project team recognizes SR911 had less than complete satisfaction with prior civilian directorships in the past, and this was a driver in going to a co-director sworn model, this prior experience does not predict future outcomes. While any directorship model has pros and cons as noted previously that must be mitigated, at minimum SR911 should have only one director position on a move-forward basis.

4. RE-ORGANIZE ADMINISTRATIVE AND TECHNICAL SUPPORT AROUND A SUPPORT SERVICES DIVISION, REPORTING TO THE OFFICE MANAGER.

Currently, as shown in the profile chapter, the SR911 technical staff currently report directly to the two co-directors. This is presently another six (6) direct reports, all technical professionals, beyond the office manager and operations manager that report to executive leadership. This arrangement suffers from some difficulties as outlined in the previous guiding principles. With regard to *Complementary Functions*, technical staff support Operations (dispatch) just as the administrative services staff support SR911 overall. As it relates to *Organizational Risk*, the myriad technical aspects of

¹⁴ <https://www.apcointl.org/resources/retains.html>

SR911 result in this functional area carrying risk for the SR911 organization. As a result, these functions deserve direct oversight and dedicated management rather than the minimal direct oversight that can be provided by an organization's director. With regard to *Supervisor & Management Span of Control*, given the duties and responsibilities of the co-directors, having eight (8) direct reports of which three-quarters are professionals (as opposed to supervisors) is too broad. With regard to the Office Manager, having two direct reports is too narrow a span of control.

While the office manager would need to gain additional insights with respect to information technology at SR911, having technical services combined with other administrative services is not an uncommon organizational approach. Several municipalities throughout the nation have administrative services divisions composed of finance, IT, human resources, and/or general service functions. In fact, this organizational structure with HR and IT reporting to one director is currently deployed in the City of Modesto. Direct supervision of the technical staff by a mid-level supervisor or management position should be considered a best practice.

5. REVISE CALL TAKER AND DISPATCHER AUTHORIZED STAFFING LEVELS DEPENDENT UPON FIXED-POST STAFFING RE-ALIGNMENT.

The most significant impact, and perhaps most controversial issue, involving SR911 operations will be any modifications to dispatcher and call-taker staffing levels. These changes will impact the quality and timeliness of service provided to the general public and user agencies, and is crucial to the costs of operation for SR911 as salary and benefits of SR911 staff represent 78% of the agency's operating budget.

(1) Authorize Ten (10) Full-time Call Taker Staff to Provide E911 Service to SR911, Resulting in Two (2) E911 Call Taker Fixed-Post Positions.

As detailed in the staffing chapter, call taker staff at SR911 are severely understaffed to address the in-coming emergency call workload generated by the serviced communities. To compensate, SR911 uses fire dispatcher and other dispatch staff to address this call workload while assigned at a dispatcher Fixed-Post position. This has created numerous internal operational and customer service issues previously articulated, ranging from too frequent “stand-by on 911” comments from dispatchers taking calls to their public safety partners in the field, to lower morale, to perceptions by numerous parties of lower and periodically rude customer service being provided to the in-calling community.

Two Fixed-Post E911 call taker positions should be deployed on each shift, effectively requiring 10.5 FTE’s for full coverage; SR911 will have to internally manage coverage for the 0.5 FTE excess, likely using part-time call taker staff.

(2) Authorize Two (2) Full-time Call Taker Staff to Provide Administrative Call Taking Support to be Deployed on a 12-Hour Fixed-Post from 0900 to 2100 Hours.

The staffing chapter showed that in-coming administration calls were nearly 50% greater than E911 calls for service. These calls do not have nearly the call-taker response time requirements of E911 (e.g. goal of 90% of call answered in 10 seconds or less), and thus do not require the same level of staffing requirements as E911 services. Administrative calls, however, do require a short, mid and longer-term call management approach. Based on this workload, we believe with the ancillary administrative call taking support provided from dispatchers and E911 call takers that a 12-hour fixed post position from 0900-2100 hours is warranted to handle the bulk of administrative calls which peak for several hours during this timeframe. This “half-time”

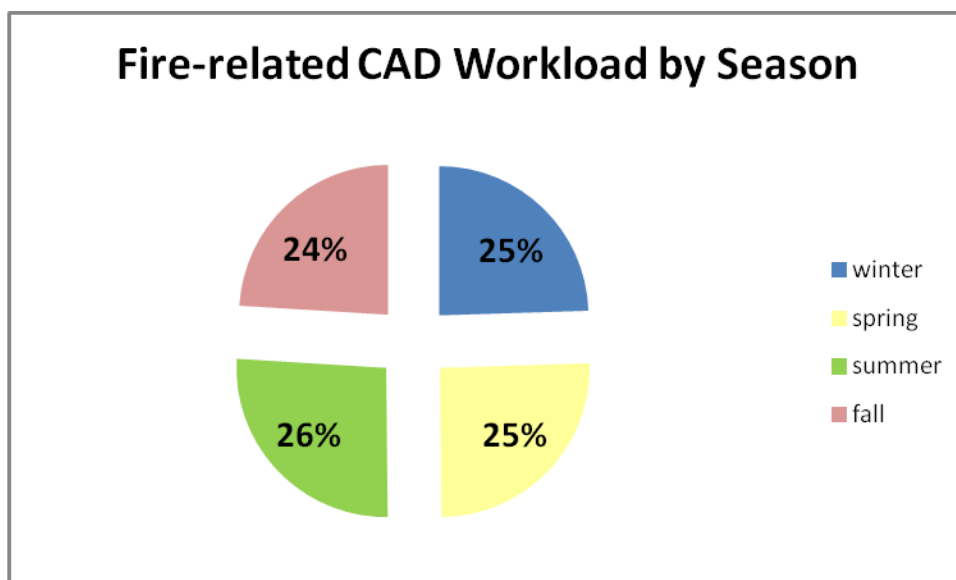
Fixed-Post position would effectively require 2.6 FTEs for full coverage based on leave patterns. This coverage would be provided by the two call-taker positions noted and back-filled by current part-time call taker staff.

(3) Strongly Consider Revising Dispatcher Fixed Post Staffing from 6.5 Fixed Post Positions to a Permanent 5.5 Fixed Post Position Strategy.

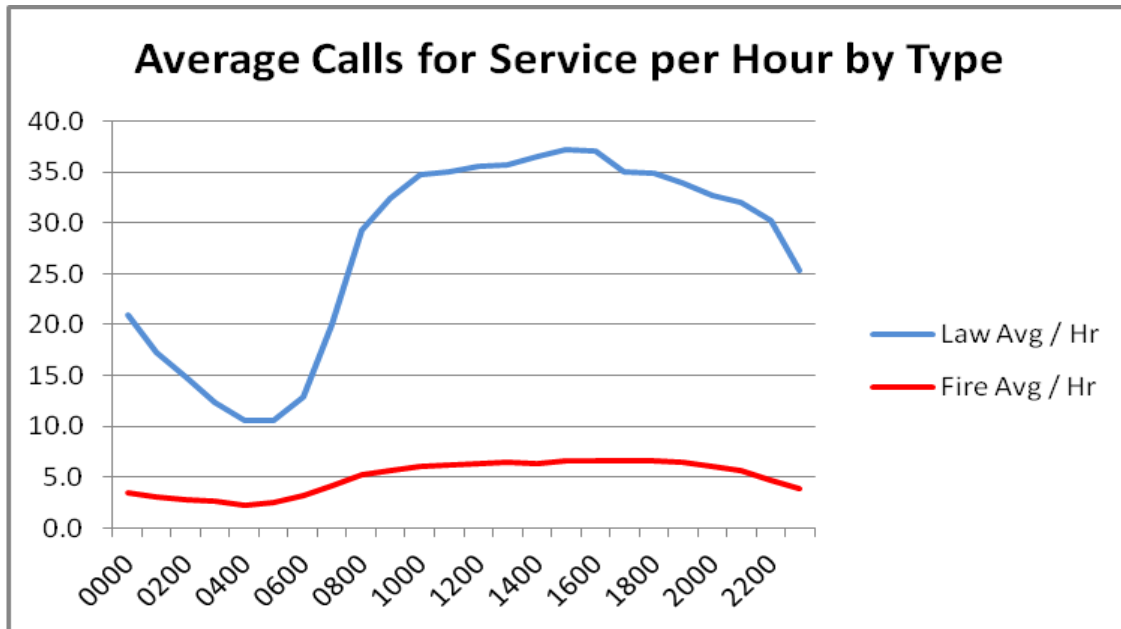
The staffing analysis performed in an earlier chapter indicated that there is workload capacity for dispatcher staff based on dispatcher-only work that excludes call-taking support as currently provided. To fill 6.5 Fixed-Post positions requires 34 FTEs (if meal/break time is generally provided as overtime pay) or 38 Dispatcher FTEs authorized allowing for meal/break periods—this is the current authorized number of dispatchers at SR911.

(3.1) Reduce Fire Fixed-Post Staffing to One Position from 2200-1000 Hours.

Despite the Fixed-Post staffing calculation needs, actual dispatcher workloads are such that there is workload capacity at these staffing levels based on workload modeling accomplished in the staffing chapter. Workload for fire-related dispatch services only changes marginally by season as shown in the graph below.



The following chart shows the fluctuations in calls for service, by type of call, comparing the dispatch workload of fire and law enforcement.



As implied by the chart, and based on the staffing analysis performed earlier, there is very reasonable work capacity for fire dispatch Fixed-Posts based on dispatcher-only workload at certain times of the day. The following is noted:

- Reiterating, law enforcement presently has 4.5 Fixed-Post positions while fire has 2 Fixed-Post positions. As demonstrated in the graph above, the dispatcher-only workload difference between law and fire is a very large order of magnitude.
- Beginning at 10pm at night (2200 hours), fire calls for service drops below an average of five calls per service per hour, declining to less than two calls for service, and increasing to an average of 5.6 calls per hour by 10am in this twelve-hour time period. The overall average number of calls for service during this period is 3.6 calls for service per hour. This overall average reflects approximately 22 minutes per hour of dispatcher-related fire workload.
- With call-taking responsibilities generally eliminated from fire dispatchers through the hiring of additional E911 call-takers, there is capability to reduce fire dispatch Fixed-Posts during a period of the day. There is no strong evidence that overall dispatch workload fluctuates significantly based on season, although it is recognized more fire-related workload typically of larger magnitude occurs during hotter seasonal periods.

In effect, based on the data, fire dispatch Fixed-Post staffing could be reduced from 2 Fixed-Posts to 1 Fixed Post from the hours of 2200-1000 hours upon hiring E911 call-taker positions that will transfer this telephone answering work from the fire dispatchers.

This fire staff reduction is clearly a policy decision as reduction to a single Fixed-Post staff position can carry risk. This is largely mitigated as two-thirds of all SR911 dispatchers are cross-trained in fire and could provide support in case of a major event during these “quieter hours of the day.” What must be counter-balanced are the *Four Framing Elements* noted at the introduction of this chapter. The Matrix Consulting Group believes that the financial benefits outweigh the operational risks; such judgment should be corroborated by SR911 Management and the Commission.

(3.2) Eliminate the MPD Wants and Warrants Fixed-Post Position Currently Assigned from 1400-0200 Hours as Part of the Core Dispatch Operation.

Another policy decision is the inclusion of elimination of ancillary Fixed-Posts unless these posts are directly paid for as discussed later in the cost allocation section of this report. As discussed previously, MPD has a dispatch Fixed-Post position for twelve hours dedicated to running wants and warrants for field staff while providing back-up law dispatch services to MPD, as necessary. Based on real-world leave patterns with the existing staffing levels, this third Modesto PD Fixed-Post position will occasionally go unoccupied. Many dispatch organizations, particularly those that have important fiscal-related issues, will forego such ancillary and supporting dispatch positions as they are typically absorbed by the core dispatch Fixed-Posts.

It should be noted, however, that for MPD the 1400-0200 hour period is very busy: over 2.5-times as busy as their sheriff’s department counterparts. As such, this

may be an opportunity to have one sheriff dispatch assignment to provide wants and warrants to all law enforcement agencies. However, if this is not practical, workload for MPD in the noted time frame still averages approximately 40 minutes per dispatcher for the two positions which is active but within the benchmarks of agent occupancy rates.

In sum, we recommend elimination of this Fixed-Post position as part of the core dispatch services for the foreseeable future.

(3.3) Do Not Create a Twelve-hour Probation Department Fixed-Post Dispatch Position.

The Probation Department has approximately four-fifths of the incident workload when compared to Modesto Fire, and while it could be claimed these are comparable, in reality there are dramatic workload differences between Probation support and Fire support. First and foremost is Probation does not generate calls for service workload.¹⁵ Secondly Probation workload largely mirrors law enforcement field support work and does not carry the complexities, recording, radio and other administrative tasks usually associated with calls for service. This, in addition to the reduction of workload as a consequence of the Newman PD departure, which based on prior information of time to handle incidents and NPD volume equals nearly 700 hours per year in dispatcher workload that is eliminated, strongly suggests this Fixed-Post position is not warranted. When evaluated against the *Four Framing Elements* discussed at the beginning of this chapter, a Probation Department Fixed-Post should be eliminated. Not creating this position will require adjustment to the existing Probation Department service contract.

(4) An Optional Deployment Strategy is The Elimination of the Call-Taker Job Classification and Deploy Dispatcher Job Classifications in Fixed-Post Positions.

¹⁵ Except in the most unusual circumstances.

Excluding incentives (e.g. cross-training) paid to the dispatcher job classification, the compensation differential between dispatcher and call-taker job classifications is approximately 10.2%. If SR911 is willing to incur a moderate additional cost, the following deployment approach could be executed in the context of the previously recommended Fixed-Post changes:

- Eliminate the call-taker job classification.
- Field the dispatcher job classification in the call-taker Fixed-Post positions.
- Increase exiting authorized dispatcher staffing levels from 38 to 44 positions to staff all SR911 Fixed-Post positions.
- Regularly and consistently rotate dispatchers through all Fixed-Post assignments based upon their cross-training. (Call-taker, sheriff, police, fire).

While there is a small additional monetary cost incurred by fielding a “higher classified” job in all positions, some organizations would strongly believe the operational flexibility associated with dispatchers in all positions is worthwhile. This perceived benefit needs to be juxtaposed against the incurred cost as noted below.

6. ESTIMATED ANNUAL FISCAL IMPACTS FOR MODIFIED SR911 STAFFING LEVELS.

Based on the staffing changes for the different options noted above, the following outcome results:

- Reduction of the fire dispatcher Fixed-Post staffing levels and elimination of the MPD twelve-hour wants and warrants Fixed Post results in a reduction of SR911 Fixed-Post staffing levels from 6.5 to 5.5. Based on SR911 dispatcher leave and turnover patterns, and the desire to frequently incorporate shift/meal breaks, the Fixed-Post staff model for 5.5 positions results in the need for **32.16** dispatcher FTEs.
- Increase call-taker Fixed-Post staffing levels to two (2) Fixed-Posts for E911 on a 24/7 basis and a twelve-hour Fixed-Post for administrative call support and E911 back-fill from 0900-2100 hours.

- Increase authorized SR911 full-time call-taker staffing levels from four (4) to 12 positions. Maintain the existing part-time call-taker positions for back-fill purposes.
- An increase of 8 call-taker FTEs results in an approximate annual cost incursion of \$575,000 per year in salary/benefits.

Option #1 for Dispatch

- Reduce authorized SR911 dispatcher staffing levels from 38 FTEs to 32 FTEs based on the operational changes recommended. This staffing level, only after incorporating recommended changes, should be sufficient for coverage for a good portion of meals/break time and also includes over-hire components as a result of SR911's minimal turnover.
- Reduction of 6 dispatcher FTEs results in an approximate annual cost avoidance of \$475,000 per year in salary/benefits. Note that at the time of this report and 34 actual dispatch positions this is only a reduction of two (2) existing FTE that should be accomplished through attrition.

Option #2 for Dispatch

- Consider the optional deployment strategy of a Dispatcher-only deployment approach discussed in Section (4) above to staff the Fixed-Post staff positions resulting in an increase of exiting authorized dispatcher staffing levels from **38 to 44 positions** to staff all SR911 Fixed-Post positions (with the elimination of the full time call-taker job classification).

Administrative

- Elimination of the presently vacant (third) Radio/Telco Engineer position resulting in an approximate annual cost avoidance of \$116,000 per year in salary/benefits.¹⁶
- Consolidation of the two (2) sworn co-director positions into one (1) civilian Director position resulting in an estimated annual savings of \$40,000 annually¹⁷.

These changes are summarized in the following table showing position, net change, and estimated costs:

¹⁶ All costs based on top stop for comparative purposes.

¹⁷ Based on estimated salary paid to a new Director job classification.

Estimated Operating Budget Change Based on Revised Staffing

FTE Position	+/- Change in FTE	+/- Est. Cost Change
Director	-0.5	(\$40K)
Engineer	-1.0	(\$116K)
Option #1 Additional Call Takers Fewer Dispatcher Positions		
Dispatcher	-6.0	(\$475K)
Call-Taker	+8.0	+\$575K
Option #2 Additional Dispatchers No Call-Taker Classification		
Dispatcher	+6.0	+\$475K
Call-Taker	-4.0	(\$288K)
Option #1 Net Annual Change (Savings):		(\$56K)
Option #2 Net Annual Change (Cost):		+\$31K

In summary the net change in cost between Option #1 and Option #2 is estimated at \$87K per annum (excluding possible incentive pays)—this reflects approximately 1% of SR911’s budget. In the context of *Four Framing Elements*, the Matrix Consulting Group recommends Option #2 be strongly considered as the deployment approach of choice.

7. REVISED SR911 ORGANIZATIONAL STRUCTURE.

Based on the information contained in this organizational and operational chapter, the following organizational chart displays the new SR911 organizational structure to include recommended reporting relationships.



8. ALTERNATIVE SHIFT SCHEDULES.

Various shift schedules can be implemented in a public safety agency, from a 5-day, 8-hour workweek (or some derivative like SR911's prior 6-3 shift program), to the four-day, 10-hour workweek to the 12-hour deployment schedule which is currently used by SR911. The most cost effective are those schedules that are equally divisible in a 24-hour period. All shift schedules which are not equally divisible into 24 hours of the day suffer from cost inefficiencies. By example, in a 4/10 plan, this requires three shift deployments totaling 30 hours of paid time to cover a 24-hour timeframe. The staffing requirements for a 9, 10 or 11 hour schedule increases the number of staff needed on duty, and where some effectiveness can be gained by the shift overlaps provided in these types of schedules, it is clearly more costly and thus less efficient than schedules equally divisible in a 24 hour time period. This fact is noted in the following

table which illustrates how many baseline FTEs are necessary to cover one “24/7/365” Fixed-Post position based upon the type of shift schedule implemented.

Impact of Shift Types on Staffing Needs

SHIFT TYPE:	8 hr	9 hr	10 hr	11 hr	12 hr
Target Staff / Hr	1	1	1	1	1
Shift Schedule (Hrs)	8	9	10	11	12
Shift Factor ¹⁸	71%	64%	57%	52%	50%
Shifts / Day	3	3	3	3	2
Total Hours Covered / Day	24	27	30	33	24
Shift “Inefficiency”	0%	13%	25%	38%	0%
FTE Staff Required	4.2	4.7	5.3	5.8	4.0

As shown by the table, the 4/10 work schedule is 25% less cost-effective than either the 5/8 or 3/12 schedules. The worst schedule from a cost perspective is the 11-hour shift program. Interestingly, the 12-hour shift schedule is the most cost effective from the total number of staff positions required because of the additional 104 work hours per annum that are potentially provided by that staff position. In instances where this additional time is not worked, the “efficiency” of the 12-hour shift is equivalent to the 8-hour shift.

SR911’s current call and incident patterns over a 24-hour period do not lend themselves well to a schedule with an overlap and consequently would not benefit from such a shift schedule. In fact, the current 12-hour schedule is overall the best one, with the only recommended adjustment to the shift start/end times for the Fire Fixed-Post position(s).

For public safety agencies with fluctuating workload, the 8-hour work program gains advantages as the agency grows larger, as resources can be more effectively deployed in smaller time blocks. Despite this, the 8-hour work program is becoming

¹⁸ Shift Factor is the number of days scheduled for work versus days to be covered in the work period. By example, 5-days/7-days = 71%.

less popular among most organizations' personnel. In sum, SR911 is not in organizational situation where there would be benefit to implementing the 8-hour shift program.

9. DISPATCH ORGANIZATION BEST MANAGEMENT PRACTICES.

In order to conduct business effectively, all organizations should implement Best Management Practices as practical. These go beyond what is considered common practice. It should be noted, however, that agencies may not be able (or are unwilling) to completely implement a best practice for a variety of reasons that include:

- Insufficient resources, whether personnel or fiscal, to adopt a best practice.
- Inadequate available time to emphasize and proactively implement new practices as a consequence of focus on managing critical day-to-day issues (core business).
- Insufficient support from political, executive, or managerial personnel to adopt a best practice.
- Inadequate buy-in from line staff to implement a best practice.
- Disagreement that the best practice, although successfully implemented in other agencies, would not be successful in the agency under BMP review (for various cultural, organizational, or local/regional issues), and therefore is not a "best practice" from said agency's perspective.

Although there are relevant reasons, as noted above, to not implement an identified best practice, the ultimate intent should be to strive for implementing as many practices as feasible within the capabilities of the organization.

Located within the Appendix of the report is a check-list of dispatch-related best management practices surrounding a variety of functional areas in the dispatch profession. Our scope of services did not entail the comprehensive evaluation of each service provided against a particular best practice; nevertheless, the check-list is

provided for SR911's future use with our observations regarding SR911 and such practices placed in the following context:

- Based on the variety of data collection conducted, SR911 performs a number of best practices admirably, several of them related to the manner in which operations are performed.
- While some best practices are obviously in place, others are not. SR911 should utilize the best management practices check-list to identify key areas in which it wishes to implement a best practice initiative. Some best practice areas in which the Matrix Consulting Group suggests SR911 could benefit from include:
 - Enhanced and transparent reporting of key performance metrics (e.g. % of calls answered within 10 seconds; dropped E911 calls);
 - Eventual CALEA, ACE and/or NAED certification.
 - Exploration of a County-wide E911 cost recovery fee.
 - Enhanced work environment.
 - Improved recruitment and selection protocols.

In summary, the implementation of Best Management Practices can help distinguish the average agency from those widely recognized as a best-in-class operation.

10. KEY FINDINGS AND CONCLUSIONS.

Throughout the chapter a variety of findings and conclusions has been raised with respect to SR911's organization and operations. The following summarizes these key findings and conclusions.

(1) Four Framing Elements Should Drive How a Dispatch Agency is Organized and Operated.

KEY FINDINGS:

- A dispatch organization and operation review should be conducted in the context of four framing elements. These are: **1)** It is Crucial to Minimize Delays in Public Safety Service Response for Effective Service Delivery to the Community. **2)** Highly-Trained Professional Dispatchers Employing Consistent Protocols are the Ideal Solution to Effective Public Safety Service Delivery. **3)** In an Era of Government Fiscal Constraint, Taxpayers Deserve Highly Effective Dispatch Services at the Most Reasonable Cost. **4)** Operational Changes from Alternative Dispatch Delivery Initiatives should have a Net Operational Benefit to Public Safety Services Overall.
- The project team evaluated the pros and cons of a sworn director compared to a civilian director. In this regard, it is important to note that none of the analysis was a reflection of the interests and performance of existing sworn personnel currently assigned. There are a variety of “pros” and “cons” relating to this director position being filled by a sworn manager; however, we believe the benefits of civilianization outweigh any risks associated with developing a new non-sworn director position to oversee E911.
- The SR911 organization should be re-aligned, with one Director, one Operations Manager and one Office Manager. Dispatch staff would report to the Operations Manager as currently accomplished, with a revision to reporting relationships whereby all technology staff would report directly to the Office Manager instead of the Director position.

KEY CONCLUSIONS:

- The purpose of an organizational structure is not only to provide the traditional command and control of an agency, but also to help define job duties and responsibilities, ensure efficient and effective workflow, establish a reporting hierarchy, and ultimately determine appropriate lines of authority and accountability. The design of an organizational structure and placement of employees within the organization should be established on eight general principles that provide the organizational cohesion necessary to accomplish the primary mission of the work unit. The realignment of the SR911 organizational structure, to include elimination of the co-directorship, civilianization of a single director position, and revised reporting relationships, are consistent with the guiding principles of effective organizational structures.
- The SR911 organization should be re-aligned, with one Director, one Operations Manager and one Office Manager. Dispatch staff would report to the Operations Manager as currently accomplished, with a revision to reporting relationships whereby all technology staff would report directly to the Office Manager instead of the Director position.

Recommendation #11: Eliminate the co-directorship model at SR911 and civilianize the Director position.

Recommendation #12: Re-organize administrative and technical support around a Support Services Division that reports to the Office Manager. All Technology staff would be assigned to this new Support Services Division.

(2) Based on SR911 Operations and Staffing Model Outcomes, Revise Current Staff Deployment Strategies, Increasing Overall Staff.

KEY FINDINGS:

- Based on Erlang-C staff modeling which ensures E911 call-taking meets the national benchmarks for call response as established by NENA, call taker staff at SR911 are severely understaffed to address the in-coming emergency call workload generated by the serviced communities. To compensate, SR911 uses fire dispatcher and other dispatch staff to address this call workload while assigned at a dispatcher Fixed-Post position.
- In-coming administrative calls were nearly 50% greater than E911 calls for service. These calls do not have nearly the call-taker response time requirements of E911 and do not require the same level of staffing requirements as E911 services. Administrative calls, however, do require a short, mid, and long-term call management approach.
- Once call-taking workload has been generally eliminated from fire dispatch positions, based on the staffing analysis and call volumes, there is very reasonable work capacity for fire dispatch Fixed-Posts at certain times of the day. From 10pm to 10am (12 hour period) the overall average number of calls for service during this period is 3.6 calls for service per hour. This overall average reflects approximately 22 minutes per hour of dispatcher-related fire workload. Thus, there is capability to reduce fire dispatch Fixed-Posts during this period of the day.
- MPD has a dispatch Fixed-Post position for twelve hours dedicated to running warrants and warrants for field staff while providing back-up law dispatch services, as necessary. The Probation Department radio/dispatch workload is currently performed by Sheriff dispatch Fixed-Posts but Probation was provided future Fixed-Post coverage in their service contract. Organizations that have important fiscal-related issues can rarely afford “ancillary and supporting” Fixed-Post dispatch positions that are typically absorbed by core dispatch services.
- With the recommended increase in call-taker Fixed-Posts and reduction of dispatcher Fixed-Posts from 6.5 to 5.5, there are alternative ways in which all these posts could be staffed. They can be staffed by separate dispatcher and call-taker classifications, or only by dispatcher classifications.
- Staffing with respect to first-line supervision, as well as administrative and technical positions are appropriate; however the vacant radio/telecomm position should be frozen for the immediate future until forthcoming telephone technology upgrades are fully addressed.

KEY CONCLUSIONS:

- Two Fixed-Post E911 call taker positions should be deployed on each shift, effectively requiring 10.5 FTE's for full coverage; SR911 will have to internally manage coverage for the 0.5 FTE excess, likely using part-time call taker staff in this role.
- With ancillary administrative call taking support provided from dispatchers and E911 call takers, a 12-hour fixed post position from 0900-2100 hours is warranted to handle the bulk of administrative calls which peak for several hours during this timeframe. This "half-time" Fixed-Post position would effectively require 2.6 FTEs for full coverage based on leave patterns. This coverage would be provided by the two call taker positions noted and back-filled by current part time call taker staff.
- Based on workload data, fire dispatch Fixed-Post staffing could be reduced from 2 Fixed-Posts to 1 Fixed Post from the hours of 2200-1000 hours upon hiring E911 call-taker positions that will transfer this telephone answering work from the fire dispatchers.
- With the departure of Newman PD from SR911, additional work capacity will be freed. Consequently the need for an MPD Wants and Warrants "part-time" Fixed-Post and a Probation Department Fixed-Post in the future is diminished, particularly in light of the fiscal challenges SR911 faces.
- Based on the very minimal compensation impact of eliminating the call-taker classification and instituting a dispatcher job classification to staff all Fixed-Post positions, this option is suggested as the preferred approach. Forty-four (44) dispatch positions would need to be authorized in SR911, with the full time call-taker position eliminated. Dispatchers would deploy to all Fixed-Posts in SR911, rotating regularly through these positions.

Recommendation #13: Maintain existing first-line dispatch supervision levels.

Recommendation #14: Maintain existing administrative support levels.

Recommendation #15: Eliminate the (third) vacant radio/telecomm position for the foreseeable future.

Recommendation #16: Authorize two (2) E911 call-taking Fixed-Posts on a 24/7 basis.

Recommendation #17: Authorize a "half-time" Fixed-Post for administrative call support from 0900-2100 hours.

Recommendation #18: Explore 3-1-1 and 2-1-1 call-taking options with SR911 partners in the future to potentially off-load a small portion of work from SR911.

Recommendation #19: Upon implementing and staffing new Fixed-Post call-taker positions, reduce dispatch Fixed-Post positions from 6.5 to 5.5 positions.

Recommendation #20: Upon implementing and staffing new Fixed-Post call-taker positions, staff only one (1) fire Fixed-Post Position from 2200-1000 hours. Modify fire dispatch 12-hour shift schedules to 2200-1000 hours and 1000-2200 hours.

Recommendation #21: Eliminate the “half-time” MPD Wants and Warrants Fixed-Post as part of core dispatch services. If desired, maintain on an ancillary support (and payment) model.

Recommendation #22: To staff SR911 call-taker and dispatch Fixed-Post positions, determine whether Option #1 or Option #2 best meets SR911’s needs based on the *Four Framing Elements* concept. It is suggested Option #2 be given serious consideration despite its minor increased SR911 Operations cost impact compared to Option #1.

(3) Continue to Pursue Best Management Practices Approaches.

KEY FINDINGS:

- The current 12-hour shift deployment strategy is a cost effective approach to deploy SR911 dispatch and call-taker staff and should be considered a best practice.
- SR911 has implemented a variety of best practices, but has opportunity to implement several others.

KEY CONCLUSIONS:

- The 12-hour shift program is currently the best program for SR911 dispatch and call-taker staff with the suggested adjustments based on recommended Fixed-Post changes.
- Although there are relevant reasons to not implement an identified best practice, the ultimate intent should be to strive for implementing as many practices as feasible within the capabilities of the organization. Located within the Appendix of the report is a check-list of dispatch-related best management practices surrounding a variety of functional areas in the dispatch profession that can be used to perform a comprehensive best practices exercise.

Recommendation #23: Maintain the existing 12-hour shift schedule with start/end time revisions previously noted.

Recommendation #24: SR911 should utilize the best management practices check-list provided to identify key areas in which it wishes to implement a best practice initiative.

8. COST APPORTIONMENT ANALYSIS

Generally all dispatch centers, consolidated or otherwise, that dispatch for multiple agencies have a cost apportionment model that allocates costs and recoups the associated fees for service based on some perceived “fair share” cost allocation strategy. Ultimately, the charge-back formulae that are used are somewhat immaterial as long as 1) the end-user public safety clients believe that costs are equitably distributed, 2) there is an ability to easily explain the charge-back methodology to the large majority of end-users, particularly dispatch organization oversight Commissions and sub-committees, and 3) there is an ability to audit the charge-back methodologies. What is particularly important is ensuring that a consistent charge-back approach is used for all the public safety organizations involved with the dispatch agency.

1. THE CURRENT SR911 COST ALLOCATION MODEL SUFFERS FROM SIGNIFICANT CHALLENGES.

The Matrix Consulting Group’s review of the current SR911 cost allocation model has resulted in our findings that it is both difficult to understand and unwieldy. It suffers from several key issues that include:

- Our interactions through surveys, interviews and e-mail transactions indicate that some of the SR911 user agencies do not believe that costs are equitably distributed among dispatch user agencies.
- The SR911 cost allocation¹⁹ model is extremely difficult to understand, particularly the underlying mathematics behind the model. There are several different variables that drive the model resulting in multiple inter-dependent formulae to ultimately arrive at the cost allocation charge for each agency. Consequently, there is not an ability to easily explain the charge-back methodology to the large majority of end-users, including the SR911 Commission and sub-committees.

¹⁹ Cost allocation and cost apportionment are used interchangeably.

- While there is an ability to audit the cost allocation model, this exercise also requires due diligence and is overly complicated. Our project team was able to audit the FY 2014/2015 model successfully, discovering only very minor rounding errors translating into insignificant allocation errors; however, this exercise was overly time consuming.
- The SR911 cost allocation model does not use a consistent charge-back approach for all the public safety organizations served by the dispatch agency. This overly complicates the model and, as importantly, can call into question whether such a model is equitable.

In sum, the current SR911 cost apportionment model should be revised as detailed in the following sections.

(1) Overview of the Current SR911 Cost Apportionment Model.

While it does not serve to explain the intricacies of the present SR911 cost allocation model, highlighting key driving variables is important to understand why we suggest a different approach. The following are key factors in understanding the existing model.

- The model is based upon a developed annual budget, first subtracting any expected “special” revenue sources such as flat-fee contract services, State reimbursements, and accounting-related transactions such as asset depreciation.
- The model is driven from three different foundational variables:
 - Population of the County and SR911 served municipalities.
 - Unique Computer-Aided Dispatch (CAD) Incidents. An incident is different than a community-generated call for service. The former includes deputy and officer self-initiated activity as well as Probation Department radio transactions. The latter, as described in an earlier chapter, is an activity based on telephone call(s) from the community. We have noted there is some confusion with regard to this definition; it is important to understand the distinction between unique incidents and community-generated calls for service.
 - Based on the fiscal outcome of population and incident variables, excluding Modesto Fire Department, all other fire agencies served by SR911 will pay, through the Office of Emergency Services, 11.6% of the calculated population/incident costs for Stanislaus County and the communities of

Hughson, Newman, Patterson, Riverbank, and Waterford. This 11.6% is subtracted from the charge levied to the law enforcement agencies (excluding Modesto).

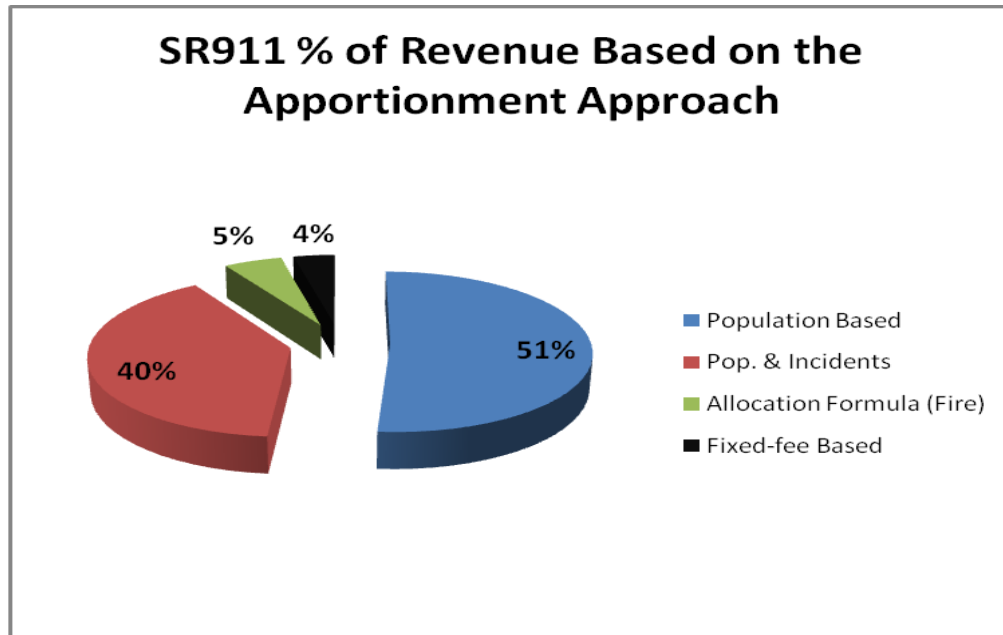
- The SR911 cost allocation model has a charge-back approach that is different for various agencies:
 - The City of Modesto is charged based exclusively on a population variable. Their percentage of population compared to the entire SR911 service area (53.27% for FY 2014/15²⁰) is the only driver in SR911 costs. Modesto paid 53.27% of the SR911 calculated budget for their police and fire dispatch services. This amount was internally allocated to the police and fire departments by the City.
 - All other agencies served by SR911 (excluding the Probation Department) are charged based on a complex formulae that are driven by both population and CAD incidents²¹, a 25% and 75% factorial, respectively.
 - All other agencies will have these formulaic costs allocated with 88.4% going to police agencies and 11.6% going to fire agencies. The fire agencies cost is paid for by the Office of Emergency Services. Reiterating, this excludes the City of Modesto with costs calculated as noted.
 - The Probation Department has a flat-fee charge-back approach given the current service level agreement. This contract, running from FY 2013/14 to FY 2017/18 started at a base charge of \$255,000 per annum with, at least, a 5% increase. This increase was levied in FY 2014/15 resulting in a flat fee charge of \$267,750.
 - The City of Oakdale is also under a flat-fee charge-back model for fire dispatch services only with the base of \$24,845.75 beginning in FY 2011/12 until FY 2015/16. This is modified annually, positively or negatively, based upon the change in SR911's budget. The FY 2014/15 charge was \$25,000.

In summary, the model has numerous variables which make the model difficult to understand, particularly for any lay-person or community member who wishes to understand how services are paid for. Perhaps more importantly, the model uses several different approaches for charging SR911 user agencies, ranging from population-base only, to incident and population as variable, to flat-fee service charges.

²⁰ Based on calendar 2013 population figures from the State Department of Finance.

²¹ FY 2014/15 SR911 budget based on FY 12/13 CAD Incidents.

The outcome of this model is different revenue streams as shown by the following pie chart.



While the model “works” to distribute costs to the user agencies, the issues associated with this model are significant, as further discussed below.

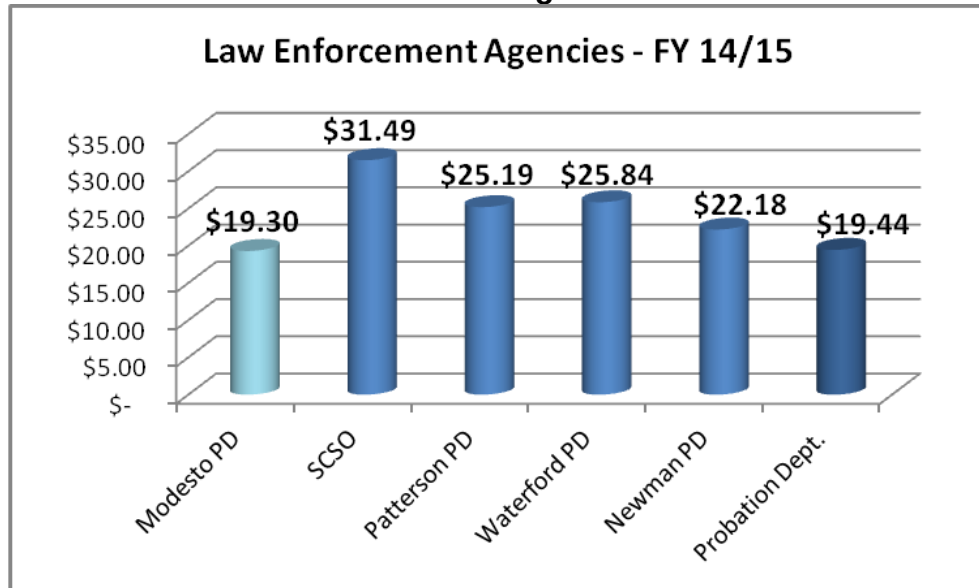
(2) The Existing SR911 Cost Apportionment Model Does Not Equitably Allocate Costs to End-users Based on a Key Dispatch Workload Driver.

In order to evaluate if a cost allocation model is equitable, there must first be general consensus and assumption that “similar service should be similarly priced.” A debate whether SR911 provides similar service to every end-user agency is beyond the scope of this section; however, for sake of comparison, this assumption must be embraced. This can then result in agreement that a “normative approach” to comparing cost for service can prove enlightening.

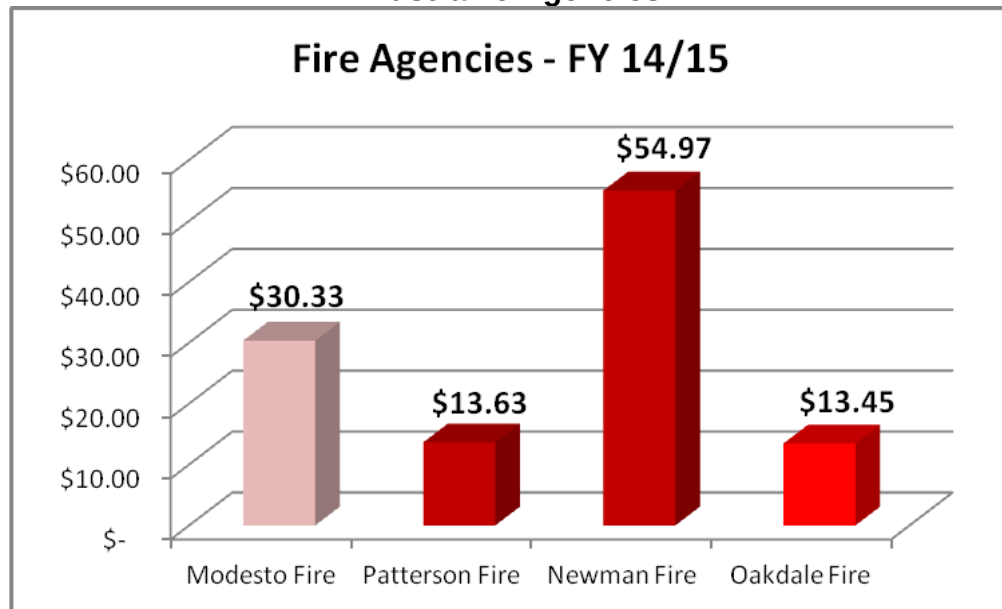
Given the different clientele SR911 has, the only normative variable that works for all agencies is unique CAD incidents that are generated by each agency served. Not all agencies served generate calls for service, some serve overlapping population bases

making a population variable problematic, etc. Consequently, for comparison purposes, we will use unique CAD incidents from FY 2012/13 and the normative variable to show how much such incidents cost based on the FY 2014/15 SR911 cost apportionment to each agency. The following two graphs show the outcome of this analytical exercise:

SR911 Average CAD Incident Cost Based on Existing Apportionment Model – Illustrative Agencies



SR911 Average CAD Incident Cost Based on Existing Apportionment Model – Illustrative Agencies



The following points are noted with regard to the information presented in the above two graphs:

- The graphs use representative agencies that reflect each of the noted cost allocation approaches in the existing SR911 cost apportionment model, (e.g. population, flat-fee, etc.).
- The represented agencies may not actually pay directly for the SR911 services. Patterson Fire and Newman Fire are paid for by the County Office of Emergency Services (as well as all other SR911 served fire agencies except MFD and OFD). All remaining agencies in the graphs pay SR911 directly.
- The city of Modesto police and fire pay based only on a population model resulting in the average cost for each CAD incident. Note that Modesto internally allocates costs to each of the two departments resulting in the calculated figures in the graph. Interestingly, Modesto chose to allocate in FY 2014/15 **17.4%** of their SR911 costs to fire, compared to the SR911's apportionment model which allocates **11.6%** to fire agencies.
- The Sheriff's Office and the cities of Patterson, Waterford and Newman represent those agencies that are driven by both population and incident variables. The graphs effectively show the impact of the population variable on these agencies, otherwise CAD incident costs would be identical.
- The Probation Department and Oakdale Fire show the outcome of a flat-fee approach to charging for service and its impact on average costs per CAD incident.

In summary, the illustrative fire agency costs per CAD incident range from \$13.45 to \$54.97—an approximate 300% differential. Law enforcement agencies' cost differential is less than fire—\$19.30 to \$31.49—but still approximates a 65% difference between the lowest and highest example. It is clear, based on this exercise, why some SR911 user agencies do not believe that costs are equitably distributed. Indeed, given the predisposition described earlier, “similar service should be similarly priced,” the current model is not equitable by any reasonable standard.

2. DEVELOPING MORE EQUITABLE AND UNDERSTABLE COST APPORTIONMENT MODELS FOR SR911.

The project team has noted several cost apportionment models throughout the country that include a wide variety of variables that ultimately result in cost allocation to the participating agencies. The variables include, but are not limited to:

- **Workload Variables**
 - Unique (CAD) Incidents.
 - Community-generated Calls for Service.
 - Incoming Telephone Calls.
 - CAD Transaction Minutes.
- **Other Variables.**
 - Population.
 - Property Assessed Valuation.
 - Equal Fixed-cost Sharing.
 - Call Complexity Considerations.
 - Fixed-Post Staffing.

The above is not intended to suggest other variables are not in use or that only one variable is used exclusively. Obviously, SR911 uses a combination of some of the noted variables. By example, another dispatch agency we have worked with has used a combination of population and property assessed valuation. All models have positive and negative characteristics. Consequently, the primary pros and cons of each variable are summarized as follows:

- **Unique (CAD) Incidents:** A key workload metric of a dispatch agency based upon actual work generated by a community. **Pro:** Every agency generates these incidents and it is easily trackable in CAD systems. **Con:** Law enforcement generates comparatively far more incidents through self-initiated activities than their fire counterparts. These often take less dispatch center work time than

community generated calls for service. It further “fiscally penalizes” agencies who perform proactive law enforcement work as it generates more incidents.

- **Community-Generated Calls for Service:** Another key workload metric of a dispatch agency. **Pro:** Most agencies generate these incidents and it is easily trackable in CAD systems. It reflects well the workloads of both dispatch and call-taker staff. **Con:** Not every agency generates this workload type (e.g. Probation Department) requiring another cost allocation model for such agencies. It does not capture the workload of agencies that generate other incidents through self-initiated activities.
- **Incoming Telephone Calls:** Another key workload metric of a dispatch agency. **Pro:** Is illustrative of an important workload driver in a dispatch agency, not only for public safety agencies but all other entities that can be serviced by a dispatch center (e.g. Public Works). **Con:** Difficult to track data precisely as to what telephone calls apply to which agency.
- **CAD Transaction Minutes:** A detailed workload metric of a dispatch agency reflecting how many minutes each incident occupied time, not just the incident count itself. **Pro:** From a workload perspective, may reflect the most detailed metric for dispatch center work. **Con:** A complex variable to understand and often to track. Penalizes those agencies with longer response times due to geography, longer handling times, etc.
- **Population:** A readily available metric to use in a cost allocation formula. **Pro:** Reflects potential workload of a specific service area and keys on the primary driver of dispatch workload (people served). **Con:** Different populations have different service expectations for public safety and use their agencies differently. Assumes the population base in different service areas generally creates equivalent public safety work, which is most often not the case as illustrated by the below table:

CAD Incident Outcomes Based on Population

Servicing Agency	CAD Incidents per Person in Service Area	Calls for Service Per Person in Service Area
Modesto PD	0.85	0.60
SCSO	0.55	0.40
Patterson PD	0.64	0.43
Waterford PD	0.59	0.43
Newman PD	1.15	0.36

- **Property Assessed Valuation:** A readily available metric that is periodically used in cost allocation formulae. **Pro:** Considers the unique demographic characteristics of each service area and charges fees based on “ability to pay.” **Con:** Can be considered by some as having equivalent characteristics to a “progressive tax” and given many communities of “relative wealth” usually need

less public safety services than more, this can result in a perception of “paying more for less service.”

- **Equal Fixed-cost Sharing:** Some dispatch center costs are fixed, irrespective of the number of agencies served (e.g. 1 manager whether 2 or 10 agencies are served). These fixed-costs are shared equally among end-users **Pro:** Fixed-costs are shared equally among all members. **Con:** Determination of what is a fixed versus a variable cost can be problematic and still requires variable cost to undergo a different cost allocation modeling approach.
- **Call Complexity Considerations:** Assumes, generally correctly, that certain call types take more time/experience than others and should be charged accordingly. **Pro:** Attempts to ensure that those who use work-intensive dispatch services, such as law enforcement, pay more than less intensive services (generally fire). **Con:** Makes assumptions that do not always transpire in real-world service. Difficult to justify an allocation as largely subjective (e.g. Stanislaus County EOD paying 11.6% for fire agencies—how was 11.6% generated)?
- **Fixed Post Staffing:** Charges are exclusively based on the number of Fixed-Post staff that are assigned to each agency/service **Pro:** For agencies with Fixed-Post assignments, charges all fees based on an easily recognized (and often requested) position. **Con:** Fixed-Posts are often fluid and engage in other agency’s workload in time of need; they cannot always be staffed due to leave vagaries, creating an impression of paying for service that is not deployed; and they lead to end-user agency possessiveness, creating internal operational difficulties.

The project team is pre-disposed to the efficacy of workload-based models as we believe they represent the fairest methods to assess costs. There are potential problems, of course, associated with workload modeling noted above, yet these model types are usually supportable. To demonstrate the impact of some of these various models, the following will place into context the changing costs to SR911 participants based on the model type.

(1) Cost Apportionment Based Only on CAD Incidents.

A cost allocation model based exclusively on incidents would result in an average incident cost of **\$23.20** for every agency; this can be juxtaposed against the range of

costs shown in the previous graphs. The fiscal impact of this model compared to the existing SR911 cost apportionment model is shown in the following table:

Annual Cost Apportionment Based on CAD Incidents Only			
Servicing Agency	Current Model Cost FY 14/15	Incident Model Cost	Difference +/-
Law Enforcement			
Modesto PD	\$3,360,000	\$4,038,915	\$678,915
SCSO	\$1,928,641	\$1,420,520	(\$508,121)
Hughson PD	\$114,800	\$106,382	(\$8,418)
Patterson PD	\$335,621	\$309,101	(\$26,520)
Riverbank PD	\$374,113	\$344,430	(\$29,683)
Waterford PD	\$131,007	\$117,609	(\$13,398)
Newman PD	\$271,468	\$283,979	\$12,511
Probation Dept.	\$267,750	\$319,424	\$51,674
Fire			
Modesto Fire	\$709,337	\$542,580	(\$166,757)
OES	\$414,090	\$405,764	(\$8,326)
Oakdale Fire	\$25,000	\$43,123	\$18,123

As shown, costs for various agencies can show a rather dramatic proportional and/or fixed cost increase or decrease dependent upon the agency.

(2) Cost Apportionment Based Only on Community Generated Calls for Service.

As a reminder, community generated calls for service *represent contacts from the community (generally via E911 landline telephone, cell phone and also non-emergency lines) ultimately resulting in one dispatched event regardless of the number calls reporting the event or the number of public safety units sent in response.* Note that nationally there has been no consistent usage of “call for service.” In some agencies it is defined as incidents, in some agencies it is defined as the total number of telephone calls. Irrespective of multiple definitions, it is the aforementioned definition which drives the model shown in the following table. A cost allocation model based exclusively on community generated calls for service would result in an average call for service cost of \$31.84 for every agency and a cost-per-incident range of **\$10.13-\$34.64** for the listed

agencies; this can be juxtaposed against the range of costs shown in the previous graphs.

Annual Cost Apportionment Based on Community Calls for Service Only²²

Servicing Agency	Current Model Cost FY 14/15	Incident Model Cost	Difference +/-
Law Enforcement			
Modesto PD	\$3,360,000	\$3,953,521	\$593,521
SCSO	\$1,928,641	\$1,410,692	(\$517,949)
Hughson PD	\$114,800	\$75,844	(\$38,956)
Patterson PD	\$335,621	\$289,320	(\$46,301)
Riverbank PD	\$374,113	\$298,968	(\$75,145)
Waterford PD	\$131,007	\$118,239	(\$12,768)
Newman PD	\$271,468	\$124,054	(\$147,414)
Probation Dept.	\$267,750	N/A	N/A
Fire			
Modesto Fire	\$709,337	\$810,327	\$100,990
OES	\$414,090	\$501,678	\$87,588
Oakdale Fire	\$25,000	\$81,435	\$56,435

As shown, costs for various agencies can show a rather dramatic proportional and/or fixed cost increase or decrease dependent upon the agency. Because the Probation Department almost never generates a call for service (although many CAD incidents), a unique cost allocation formula would need to be developed for them, as well as any other party operating under similar circumstances.

(3) Cost Apportionment Based Only on Population Served.

A cost allocation model based exclusively on population requires buy-in to a fundamental precept that multiple agencies serve the same population. Given this, populations must be, essentially, “double counted” for law enforcement and fire service and costs apportioned accordingly. This will, in effect, result in a law enforcement agency and a fire agency that serves the same population splitting costs 50/50. Without this population-only approach a dispatch agency must use a different multi-variable methodology to cost allocation.

²² For modeling purposes FY 2013/14 community-generated calls for service were used.

Annual Cost Apportionment Based on Population Only

Servicing Agency	Current Model Cost FY 14/15	Population Model Cost	Difference +/-
Law Enforcement			
Modesto PD	\$3,360,000	\$1,988,190	(\$1,371,810)
SCSO	\$1,928,641	\$1,066,355	(\$862,286)
Hughson PD	\$114,800	\$67,361	(\$47,439)
Patterson PD	\$335,621	\$201,206	(\$134,415)
Riverbank PD	\$374,113	\$223,435	(\$150,678)
Waterford PD	\$131,007	\$82,988	(\$48,019)
Newman PD	\$271,468	\$102,726	(\$168,742)
Probation Dept.	\$267,750	N/A	N/A
Fire			
Modesto Fire	\$709,337	\$1,988,190	\$1,278,853
OES	\$414,090	\$1,744,071	\$1,329,981
Oakdale Fire	\$25,000	\$199,555	\$174,555

A cost allocation model based exclusively on population would result in a cost-per-incident range of **\$8.39-\$85.00** for the listed agencies; this can be juxtaposed against the range of costs shown in the previous graphs. The model demonstrates, as shown by MPD and MFD, the 50/50 cost split given the service provided to the same areas. Note that since the Probation Department serves a unique population base, another cost allocation approach would need to be developed.

(4) Cost Apportionment Based Only on Fixed-Post Positions.

Irrespective of any workload or demographic driver, a cost model can be developed based on the number of Fixed-Posts assigned to an agency or agencies. For Fixed-Post positions that service multiple entities, another variable will have to be used to share costs for this particular position. The following reflect the assignments of the 6.5 Fixed-Posts in SR911.

- **Modesto PD:** 2.5 Fixed Posts.
- **SCSO, SCSO Contract Cities, Newman PD, Probation Department:** 2 Fixed Posts.
- **Modesto Fire:** 1 Fixed Post.

- **Other Fire:** 1 Fixed Post.

The following table shows the relative cost breakdown using incidents to share costs among fixed post positions that service multiple agencies.

Annual Cost Apportionment Based on Fixed-Post Positions – Cost Sharing by Incident Proportion for Shared Fixed-Posts

Servicing Agency	Current Model Cost FY 14/15	Fixed-Post Model Cost	Difference +/-
Law Enforcement			
Modesto PD	\$3,360,000	\$3,050,703	(\$309,297)
SCSO	\$1,928,641	\$1,194,876	(\$733,765)
Hughson PD	\$114,800	\$89,484	(\$25,316)
Patterson PD	\$335,621	\$260,002	(\$75,619)
Riverbank PD	\$374,113	\$289,719	(\$84,394)
Waterford PD	\$131,007	\$98,927	(\$32,080)
Newman PD	\$271,468	\$238,870	(\$32,598)
Probation Dept.	\$267,750	\$268,685	\$935
Fire			
Modesto Fire	\$709,337	\$1,220,281	\$510,944
OES	\$414,090	\$1,103,052	\$688,962
Oakdale Fire	\$25,000	\$117,229	\$92,229

A cost allocation model based on Fixed-Post positions would result in a cost-per-incident range of **\$17.52-\$63.06** for the listed agencies; this can be juxtaposed against the range of costs shown in the previous graphs.

(5) As Demonstrated, Different Cost Allocation Models have a Variety of Cost Implications for Various User Agencies.

The data above demonstrate that there are a variety of cost apportionment models based on a single variable that have a distinct impact on various SR911 user agencies. Generally speaking, some of the key differences are noted below:

- With the exception of an incident-only based model, fire service agencies increase their SR911 contribution compared to the existing model.
- With the exception of an incident-only model where all agencies pay the same cost-per-incident, the model with a narrow range for cost-per-incident is one based exclusively on calls for service. The model with the greatest range is the population-only model.

- The City of Modesto, the end user utilizing the greatest proportion of SR911 services, could pay from approximately \$95K less to approximately \$695K more per annum. The model under which they pay less is the population-only model.
- In every model presented, the Stanislaus County Sheriff's Office and their contracted service municipalities decrease their annual SR911 contribution compared to the existing model.
- Newman Police Department's costs changed such that in three of the four models presented costs decreased. There was an increase in annual costs in the incident-only based model.

Each of the different models presented are perceived by some national dispatch operations as "equitable;" and as noted, each one has a distinct impact on SR911 user agencies. The Matrix Consulting Group believes it is important, therefore, to attempt reach consensus on what model reflects the best-fit for SR911 and their user agencies within the following criteria reflective of a "good model."

- **The public safety clients believe that dispatch costs are equitably distributed.**
- **There is an ability to easily explain and audit the charge-back methodology to the public safety clients and others.**
- **There is consistent charge-back approach for all public safety agencies served by the dispatch agency.**

To that end, the following SR911 cost apportionment model is offered.

3. SELECTED COST APPORTIONMENT MODEL FOR SR911.

Irrespective of the strengths and weaknesses of each modeling approach, the Matrix Consulting Group believes one approach satisfies all the noted requirements of a "good model" particularly within our own context of the best models are those based on workloads. In effect, we recommend a model based on the following formula:

Suggested Cost Apportionment Model for SR911

1.
$$\frac{(\text{End-user CAD Incidents} + \text{End-user Community Generated Calls for Service})}{(\text{SR911 Total CAD Incidents} + \text{Total Calls for Service})} = \%$$
2.
$$\% \times \text{SR911 Net Annual Operating Cost} = \text{End-user's revenue contribution.}$$

The model essentially takes two workload drivers, CAD Incidents and Community Generated Calls for Service, and uses only these two workload variables as cost apportionment drivers. Because calls for service is a sub-set of incidents, this model effectively double-counts, or values the workload of calls for service by twice that of incidents. As suggested previously in this report, the workload of incidents unrelated to calls for service is typically self-initiated. And while self-initiated workload requirements for dispatches vary considerably, in total self-initiated incidents reflect less work requirements than a call for service.

While one could argue that “doubling the value” of a call for service compared to an incident is not precisely correct based on real-world experience, any other outcome would result in the inclusion of a ratio or percentage formula in the noted model, further complicating the understanding of that model. The suggested model meets the criteria established and would have the following fiscal impact on the SR911 user agencies.

FY 2014/15: Outcome of Suggested Cost Apportionment Model for SR911²³

Servicing Agency	Current Model Cost FY 14/15	Fixed-Post Model Cost	Difference +/-
Law Enforcement			
Modesto PD	\$3,360,000	\$4,028,786	\$668,786
SCSO	\$1,928,641	\$1,392,112	(\$536,529)
Hughson PD	\$114,800	\$96,200	(\$18,600)
Patterson PD	\$335,621	\$307,067	(\$28,554)
Riverbank PD	\$374,113	\$334,784	(\$39,329)
Waterford PD	\$131,007	\$118,885	(\$12,122)
Newman PD	\$271,468	\$206,624	(\$64,844)
Probation Dept.	\$267,750	\$273,453	\$5,703
Fire			
Modesto Fire	\$709,337	\$681,123	(\$28,214)
OES	\$414,090	\$423,791	\$9,701
Oakdale Fire	\$25,000	\$69,004	\$44,004

A cost allocation model based on CAD incidents and community generated calls for service as described would result in a cost-per-incident range of **\$13.34-\$26.53** for the listed agencies; this can be juxtaposed against the range of costs shown in the previous graphs as well as all other cost models. It has the narrowest cost-per-incident range, by a significant margin, of any other illustrative model presented.

4. WHEN TO DELIBERATE SPECIAL CONSIDERATIONS.

Agencies throughout the country will make special considerations for certain clients based on unique circumstances. By example, SR911 chose to do independent contracts with County Probation and Oakdale Fire in order to provide service. While these were well intended, based on these contracts these agencies are not paying their “fair share” based on the cost allocation model exercises presented. These should be rectified. However, there are circumstances in which a SR911 customer desires “augmented service” and as such, this should be provided, as practical. By example, MPD has desired a “wants and warrants” dispatch position. This could be accommodated by Modesto paying directly for the Fixed-Post staffing required to fill this

²³ Based on both incident and calls for service data, FY 13/14.

position. Offering these kinds of additional services, based on unique needs, is an appropriate best practice as long as these extra services are easily distinguishable from the provision of other core services every SR911 client receives.

5. KEY FINDINGS AND CONCLUSIONS.

Throughout the chapter a variety of findings and conclusions has been raised with respect to SR911's current cost apportionment model and various alternatives presented. The following summarizes these key findings and conclusions.

(1) The Current SR911 Cost Apportionment Model is Overly Complex and Not Perceived by Many User agencies as Equitable.

KEY FINDINGS:

- Our interactions through surveys, interviews and e-mail transactions indicate that some of the SR911 user agencies do not believe that costs are equitably distributed among dispatch user agencies. The SR911 cost apportionment model is extremely difficult to understand, particularly the underlying mathematics behind the model. It is very difficult to audit for accuracy. The SR911 cost allocation model does not use a consistent charge-back approach for all the public safety organizations served by the dispatch agency. This overly complicates the model and, as importantly, can call into question whether such a model is equitable.
- Illustrative fire agency costs per CAD incident range from \$13.45 to \$54.97—an approximate 300% differential. Law enforcement agencies' cost differential is less than fire—\$19.30 to \$31.49—but still approximates a 65% difference between the lowest and highest example. It is clear, based on this exercise, why some SR911 user agencies do not believe that costs are equitably distributed. Indeed, given the concept of, "similar service should be similarly priced," the current model is not equitable by any reasonable standard.

KEY CONCLUSIONS:

- The SR911 cost apportionment model has numerous variables which makes the model difficult to understand, particularly for any Commission member, committee representative, lay-person or community member who wishes to understand how services are paid for. Perhaps more importantly, the model uses several different approaches for charging SR911 user agencies, ranging from population-base only, to incident and population as variable, to flat-fee service charges.
- While the model "works" to distribute costs to the user agencies, the issues associated with this model are significant.

Recommendation #25: Eliminate use of the existing SR911 Cost Apportionment Model for FY 2015/16 and beyond.

- (2) All Cost Apportionment Models have Positive and Negative Aspects; However, Cost Allocation should Ideally be Based on Dispatch Workload Provided to User agencies.**

KEY FINDINGS:

- The project team has noted several cost apportionment models throughout the country that include a wide variety of variables that ultimately result in cost allocation to the participating agencies. These include Unique (CAD) Incidents; Community-generated Calls for Service; Incoming Telephone Calls; Population; Property Assessed Valuation; Equal Fixed-cost Sharing; and Fixed-Post Staffing. All models have positive and negative characteristics.
- The project team is pre-disposed to the efficacy of workload-based models as we believe they represent the fairest methods to assess costs. There are potential problems, of course, associated with workload-based modeling but using these variables exclusively generally has the most supportable outcomes.
- Each of the different cost apportionment models are perceived by some national dispatch operations as “equitable;” and each one has a distinct impact on SR911 user agencies. The Matrix Consulting Group believes it is important, therefore, to attempt reach consensus on what is considered a “good model.”
- Few exceptions should be made once an allocation model is established. Attempts to accommodate clients outside of the model can lead to perceptions of “unfairness” or inequity. However, if an agency wishes specialized support services, they should be able to pay for this directly.

KEY CONCLUSIONS:

- There are a variety of cost apportionment models based on a single variable that have a distinct impact on various SR911 user agencies. Generally speaking, some of the key differences are noted below.
- With the exception of an incident-only based model, fire service agencies increase their annual SR911 contribution compared to the existing model.
- With the exception of an incident-only model where all agencies pay the same cost-per-incident, the model with a narrow range for cost-per-incident is one based exclusively on calls for service. The model with the greatest range is the population-only model.
- The City of Modesto, the end user utilizing the greatest proportion of SR911 services, could pay from approximately \$95K less to approximately \$695K more per annum. The model under which they pay less is the population-only model. In every model presented, the Stanislaus County Sheriff's Office and their contracted service municipalities decrease their annual SR911 contribution compared to the existing model. Newman Police Department's costs changed such that in three of the four models presented costs decreased. There was an increase in annual costs for NPD in the incident-only based model.

- With the exception of an incident-only model where all agencies pay the same cost-per-incident, the model with a narrow range for cost-per-incident is one based exclusively on calls for service. The model with the greatest range is the population-only model.

Recommendation #26: For any future SR911 cost apportionment model, formally adopt a guiding principle (criteria) at the executive management and Commission level that ensures the model has three key characteristics: 1) The public safety clients believe that dispatch costs are equitably distributed, 2) There is an ability to easily explain and audit the charge-back methodology to the public safety clients and others, and 3) There is consistent charge-back approach for all public safety agencies served by SR911.

Recommendation #27: Ensure any adopted SR911 cost apportionment model includes, for all user agencies, a workload variable of either incidents and/or community generated calls for service.

Recommendation #28: For SR911 fiscal year budget development, use the prior calendar year's workload variables (as opposed to fiscal year) for the model's development.

Recommendation #29: Allow SR911 customers to pay directly for ancillary services that can be specifically attributed to that agency. This would essentially be paying directly for identifiable Fixed-Posts for that agency that are dedicated exclusively to work for that agency.

(3) Develop an SR911 Cost Apportionment Model Based Solely on Incidents and Calls for Service for All SR911 User Agencies.

KEY FINDINGS:

- The developed SR911 cost apportionment model essentially takes two workload drivers, CAD Incidents and Community Generated Calls for Service, and uses only these two workload variables as cost allocation drivers. Because calls for service is a sub-set of incidents, this model effectively double-counts, or values the workload of calls for service by twice that of incidents.
- The suggested model meets the criteria established as a "good model" and would have the following characteristics:

$$\frac{(\text{End-user CAD Incidents} + \text{End-user Community Generated Calls for Service})}{(\text{SR911 Total CAD Incidents} + \text{Total Calls for Service})} = \%$$

$$\% \times \text{SR911 Net Annual Operating Cost} = \text{End-user's revenue contribution.}$$

KEY CONCLUSIONS:

- A cost allocation model based on CAD incidents and community generated calls for service as described would result in a cost-per-incident range of **~~\$13.34~~-\$26.53** for the SR911 user agencies. It has the narrowest cost-per-incident range, by a significant margin, of any other illustrative model presented.

Recommendation #30: Adopt the presented CAD Incident and calls for service cost apportionment model for SR911 beginning in FY 2015/16.

Recommendation #31: Revisit the cost apportionment model for potential revision every four years.

9. ANALYSIS OF GOVERNANCE STRUCTURES

This chapter focuses on the potential changes to the governance structure in the previously noted alternative dispatch operations. Information contained herein reflects our analyses of present operations, interview feedback, and governance alternatives.

1. OVERVIEW OF GOVERNANCE.

The appropriate governance model for a consolidated dispatch agency is clearly an important issue. There are very relevant and often disparate positions regarding representation in a decision-making body overseeing regionalized dispatch operations and ultimate day-to-day control over services provided. Like cost allocation modeling, there is no simple answer to resolving the governance of an agency with multiple members. There are, however, a variety of governance models implemented by other regional dispatch agencies that can be examined for alternative approaches to governance, if desired. The following section discusses these various governance models as researched by the project team.

2. THERE ARE NUMEROUS GOVERNANCE MODELS FOR REGIONAL DISPATCH AGENCIES IN EFFECT THROUGHOUT THE UNITED STATES.

The project team researched and evaluated several different governance models throughout the United States. In sum, the research suggests there is no single governing model that is prevalent. Clearly, all types of governance models can work if the participants have a vested interest in collaboration and leading an organization effectively.

Although many variations exist, there are three primary forms, or some derivative related thereto, of joint governance and operational oversight in common existence in the US. These include the following:

- **A unique department with an affiliation with one of the municipal/county governments.** In this governance model, the dispatch agency would function either as a separate department, or under the direction of a non-public safety department head (e.g. Information Technology) of an existing department. The dispatch agency maintains a direct affiliation with one of the participating agencies (e.g. the “host” county). In this model, the dispatch manager/supervisor would either be a department head or report to a department head. Advantages and disadvantages associated with this particular model include the following:

Advantages	Disadvantages
Clear line of authority, as there is no ambiguity regarding which organization to which the manager reports.	Potential feeling of loss of control by non-host participants.
Relatively free from political influence, as changes in governing philosophy would not occur as often as would be the case with rotating appointments to a governing board.	Vests decision-making authority in one or a few people with established ideals; these staff may not have the interest of all public safety stakeholders equally.
Manager treats the public safety personnel serviced as the primary “customers” as opposed to members of the governing board.	
Administrative services such as personnel, information technology support, payroll, etc., are easily provided by a single entity.	

Nearby Monterey County’s Emergency Communications Department and San Mateo County’s Public Safety Communications Department are examples of this type of operation. While SR911 is periodically perceived to operate closest to this model as Stanislaus County serves as the “employee of record,”²⁴ the 1999 Joint Exercise of Powers Agreement between Modesto and Stanislaus County indicates SR911 has full authority to operate as an independent JPA.

- **A Division/Bureau/Unit of One of the Participating Agencies.** In this model, the dispatch agency would function as a division of one of the participating agencies’ police or fire departments. Advantages and disadvantages associated with this particular model include the following:

²⁴ SR911 1999 JPA Agreement, Section 10.2.

Advantages	Disadvantages
Pre-established working dispatch operation with existing supervisory/line personnel.	As in the above model, there may be a feeling of loss of control by the non-host agencies.
Dispatch personnel are already familiar with, and presumably comfortable with, operating under a public safety directorate, as opposed to that of a civilianized, separate organization.	Non-host agency may feel that there is an inequitable amount of attention paid to its jurisdiction, or that the host jurisdiction is receiving a disproportionate share of resources.
	Civilian dispatchers may feel limited in their career paths, as higher management positions will continue to be filled by “sworn” public safety personnel.

- **Joint Powers Authority Organization.** Under this model, the dispatch agency would function as a separate and fully independent agency (JPA) with a manager/supervisor reporting to an appointed board or committee. Advantages and disadvantages associated with this particular model include the following:

Advantages	Disadvantages
Independence of the manager counters the perception of bias toward one agency.	Since the JPA is not directly affiliated with one of the existing governments, it may have to make separate arrangements for administrative services such as Personnel, purchasing, IT support, payroll, etc.
Equitable service delivery to all participants as each agency has a “voice” with the JPA operation.	Possible diversion of manager’s interest from a public safety field personnel customer-oriented mission to that of political interests satisfying an independent board.

Based on the JPA agreement between Modesto and Stanislaus County, SR911 has the authority to operate in this fashion. However, given the County is the “employee of record,” there is a historical perception that SR911 is not a fully independent JPA.

These more common models have been well-established throughout the United States. Obviously these models can have a variety of minor modifications to meet the unique needs of the community served; however, thematically they have relatively consistent approaches in the way they operate. Regardless, the key for a successful governance model is maintaining an independent agency identity whereby, with respect to dispatch operations, the agency can service the unique needs of their constituents and customers without undue influence from one or a few authorities.

The concerns over disproportionate influence within dispatch operations are relatively common concerns and represented throughout dispatch literature. By example, an article in the “Emergency Communications Professional” specifically discusses these kinds of concerns:

(No one should) think that consolidating dispatch services forces individual departments or organizations to surrender their uniqueness; that's not true at all. The goal is to use common radio language on a common radio frequency -- those things must be standardized. But things like whether to send an officer anytime an ambulance is dispatched, or determining what level of service a community provides its constituents, consolidation doesn't affect that at all. Some departments go on dog bites; some don't. Some dispatch four officers on domestic violence calls; some dispatch two. Some fire departments send out trucks to remove limbs from roads; others don't. Departments can and do retain their individual identities. (Of note) if you treat fire departments as a little brother and pat them on the head, it's never going to work. They must be full-stake partners in the process. This may seem obvious, but when it comes to consolidation, fire departments often feel like they get the short stick, particularly when it comes to CAD (computer-aided dispatch) and RMS (records management system). Fire departments often find that the CAD/RMS systems oriented towards police do not support their reporting needs and resent having these solutions thrust upon them.²⁵

Based on the framework above, there is no real evidence that SR911 participants have lost their identity or authority to influence the SR911 governing body, and as such, there are few if any issues regarding how SR911 is established from a governance perspective.

3. THE SR911 GOVERNANCE MODEL IS PRESENTLY ADEQUATE THOUGH SHOULD AVOID POTENTIAL PITFALLS IN THE FUTURE.

Based on our interviews and review of available documentation, there are no serious issues related to the present governance model of SR911. Indeed, governance was a very minor topic in comparison to other issues noted in this report. While other documentation both internal and consultant-based have attested to certain

²⁵ Emergency Communications Professional – The Pros and Cons of 911 Dispatch Consolidations. May/June 2009.

administrative issues surrounding the actual performance of the governing body and supporting staff, these observations are linked to the execution of governing oversight, not the governance model itself. As such, the existing SR911 governance model is adequate to conduct current business, with administrative improvement opportunities identified in other documents worth consideration. Furthermore, there is sufficient flexibility within the JPA Agreement²⁶ to modify various approaches to SR911 governance and operations if deemed necessary.

One of the key roles of the employee of record (Stanislaus County) is the negotiation of salary and benefits with SR911 staff. While the Matrix Consulting Group understands this role, we believe it would be advantageous for the County to include other SR911 Commission-appointed negotiators representing the SR911 end-user community during the negotiation process. Since outcomes of these negotiations can have a significant impact on the overall operating costs of SR911, this joint participation can prove essential in gaining consensus among SR911 customers that compensation was negotiated within the context of diverse opinions and in the best interests of all SR911 partners. Moreover, some kind of joint participation in SR911 negotiations can provide an important forum that demonstrates partnering in cooperative efforts among SR911 customers are both achievable and worthwhile.

Recommendation #32: Maintain existing SR911 governance structure and modify, as necessary, within the terms and conditions of the 1999 Joint Exercise of Power Agreement.

Recommendation #33: Include at least three (3) SR911 Commission-appointed representatives to act as joint negotiators with SR911 unions, supporting Stanislaus County as the employee of record. One of these positions should be the County's identified union negotiator.

²⁶ See Section 12 of the JPA agreement as an example.

10. KEY OPERATIONAL ISSUES AND OBSTACLES

While a variety of issues have been identified, as well as associated findings, conclusions and recommendations are made within this report, the Matrix Consulting Group was specifically requested to in the service contract to, “Identify issues or obstacles which may affect the future operational effectiveness of SR911 and recommend actions to address those issues or obstacles.” To the end, the following key obstacles are noted with forthcoming recommendations.

1. THE PERCEPTION OF COST FOR SERVICE EQUITY.

During the course of the study both interview and survey results identified a key issue with respect to the SR911 cost apportionment model. While a previous chapter has provided details with respect to altering this model, the level of concern with regard to this issue should be reiterated. The following is illustrative of some key perceptions by SR911 customers with respect to cost:

- One public safety executive stated that the SR911 cost allocation model alternatives presented at an earlier date had options that reduced the dispatch operational costs to their public safety agency. However, this model was not selected thereby exacerbating dissatisfaction with the perceived high-cost of dispatch service delivery.
- One SR911 customer who is a city executive indicated, “Based on research done, it appears the County Probation pays a flat fee for SR911 services as reflected in this agreement, while the rest pay based on the formulas in the JPA. If all other things are equal in service requirements, etc., Probation is only paying “X” per call and our City is paying double that at “2X.” This doesn’t seem right.” (Edited slightly to maintain anonymity).
- Perceptions from the customer survey narrative responses include: “MPD is not getting what it is paying for, and MPD is paying for majority of the SR911 bill.” Additionally, “SR911 originally was a good idea, but over the years has deteriorated in service to the community of Modesto and service to the officers and firefighters. The funds paid by Modesto for their “share” of SR911 are far

more than what they get out of it. SR911 needs a revamping from the top down.” And, “The current cost allocation model (is a weakness).”

One of the key obstacles in devising a cost allocation model is developing a model that all participants view as representing their “fair share.” This is particularly difficult when a revision to the model results in a notable cost increase to some participants; this revision can then become extremely disconcerting. In order to overcome this obstacle, the impacted agencies will have to perform their own due diligence analysis with respect to identifying and costing out what alternatives are available. It should be recognized that only in the minority of circumstances will an agency be able to develop an internal dispatch operation that is more cost-effective and serves the greater good of public safety partners and citizens throughout the service area when compared to a best-in-class regionalized dispatch center. There are exceptions of course, as has been demonstrated throughout the country.

2. THE PERCEPTION OF SERVICE QUALITY.

Independent chapters have been devoted to the customer and employee surveys that quantitatively discussing service quality. Despite this attention, the topic is worth reiterating as this is a key issue for SR911.

As shown by the table below, there is a distinct and relatively dramatic difference of opinion related to the quality of service provided as asked of the SR911 customer and SR911 employees.

Survey Responses from Surveys Conducted for SR911

Statement	Agree	Disagree	Neutral	No Opinion
SR911 Customer Response				
SR911 is providing a high quality service to the people who call.	40%	27%	24%	9%
SR911 provides a high quality service to the personnel in my Agency.	45%	33%	21%	1%
SR911 provides a consistent level of service (day to day, shift-by-shift).	34%	45%	21%	0%
SR911 Employee Response				
We provide quality customer service to the public that calls in.	87%	10%	N/A	3%
Our dispatch agency provides a high level of service to our public safety partners and the community.	92%	5%	N/A	3%

The difference between these perceptions is important as according to the survey, SR911 strongly believes they are providing quality service at a high level while nearly 220 customer survey respondents have a notably less positive viewpoint. A further review of all customer survey narrative responses (unedited but alphabetized) as shown in **Appendix A** is also revealing. In a discussion of strengths—where 207 comments were provided—and improvement opportunities (303 comments), there is disparate opinions regarding the overall quality of service delivery, the reasons for the current state of operations, and inferences on what can (and cannot) be accomplished to augments strengths and address weakness.

A key reminder of one of the impacts on quality of service as discussed in the staffing chapter is worth repeating given the overall staffing issues noted in SR911. “In dispatch centers with high utilization levels quality begins to suffer because dispatchers must cut calls and radio exchanges short, thereby **impacting dispatcher effectiveness, perceived customer-friendly service**, and potentially safety in the field

for law enforcement, fire, and emergency medical response professionals (emphasis added).”

While champions of SR911 may wish to dismiss perceptions of service quality that show there are opportunities for improvement, indicating it is from a sub-set of disgruntled customers or unnecessarily and unproductively critical, the evidence is compelling there is a customer service issue. These perceptions must be addressed. No business, dispatch or otherwise, can survive long-term when less than 50% of customers agree that service quality is high and service levels are consistent. Therefore, it is important for SR911 to address the staffing, operational and customer service issues noted in this report for long-term survivability. Customer service issues become even more problematic when placed in the context of perceived high cost for service provided, as noted in the following section.

3. THE PERCEPTION OF SERVICE COST AT CURRENT SERVICE LEVELS.

The Matrix Consulting Group was specifically requested to review operational costs and compensation during this engagement. While the scope of this project does not include a comprehensive salary, benefits, and compensation study, it is important to note key compensation features of SR911’s operational expenses and their impacts on the SR911 customer base.

Salary and benefits of SR911 staff represent 78% of the agency’s operating budget. Thus it is largely driven by the compensation package offered to SR911 staff.

Based on information reviewed, the following important points are noted:

- Based on a dispatcher compensation survey of eight (8) comparable class agencies (as currently used in SR911 negotiations), the **SR911 top-step salary** is -1.4% below the average but +5.5% above the median.

- Based on California-wide base salary information for dispatch agencies provided from www.dispatcheredu.com that include widely diverse economics, service populations, etc., the median dispatch salary is \$26.67 per hour compared to SR911's median salary of \$25.08. In the 29-agency sample, SR911 would have ranked in the 45th percentile.
- Based on a dispatcher compensation survey of eight (8) comparable class agencies, the SR911 **top-step salary/benefits** is 7.4% above the average and 13.1% above the median. Benefit payments alone are over 30% above the average of other agency benefit packages.
- Based on a dispatcher compensation survey of eight (8) comparable class agencies, the SR911 **top-step salary/benefits plus available incentive pays** is 17.3% above the average and 22.1% above the median (without consideration for the current -5% salary furlough). When including this furlough it is 14.6% and 19.5%, respectively.
- The availability of a generous incentive package has, as noted above, an important impact on SR911's overall compensation and costs. The following key points are noted with respect to SR911 incentives:
 - SR911 pays incentives for cross-training beyond the "home radio" (initial Fixed-Post) function. This entitles dispatchers to earn +10% each for learning up to two other Fixed-Post positions. Those dispatchers that are trained on both law enforcement (MPD and Sheriff) and fire Fixed-Posts are entitled to a +20% salary increase. Nearly one-half (48%) of SR911 dispatchers are cross-trained on all three positions thereby receiving the +20% increase while 87% are cross-trained on at least one other position.
 - While incentives for cross-training are common practice throughout the nation, a +10% differential is uncommonly generous. Furthermore, a significant differential for learning another law enforcement Fixed-Post (when already trained in law) is also uncommon.
 - Not included in the incentive calculations for dispatcher is a +10% for the Communications Training Officer (CTO) counterpart where seven (7) positions are currently assigned at SR911 and 8 positions authorized. These "senior dispatchers," with only one exception, are all cross-trained on all three Fixed-Posts, thereby gaining an overall +30% incentive pay stipend.
 - While incentives for CTO capabilities are common practice throughout the nation, a +10% incentive pay is not, particularly since this pay is provided at all times at SR911 as opposed to just during periods of training other staff.
 - Not included in the incentive calculations for dispatchers is shift differential pay. This is common practice among dispatch agencies nationally.

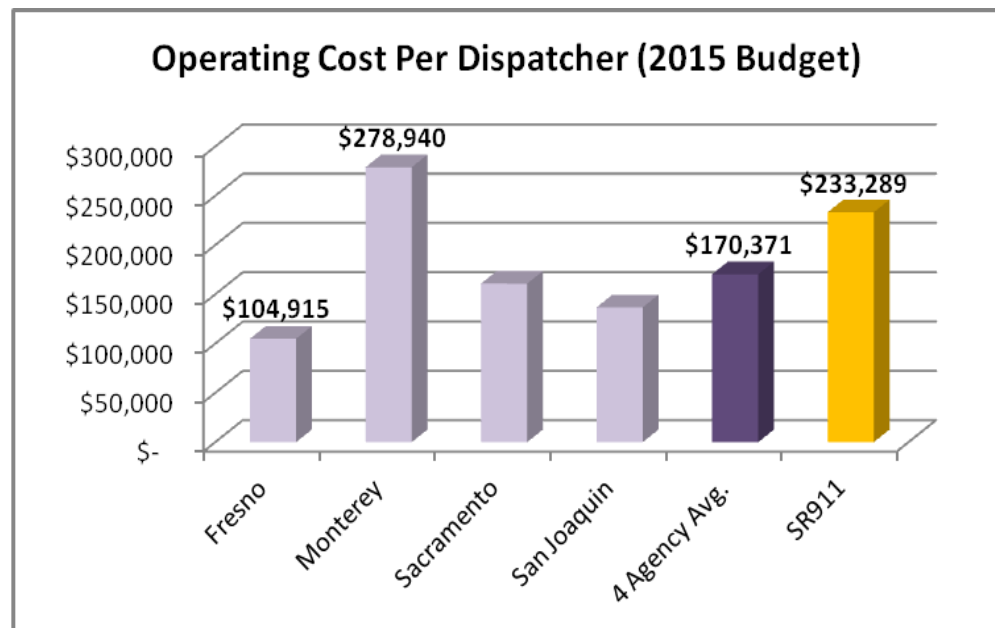
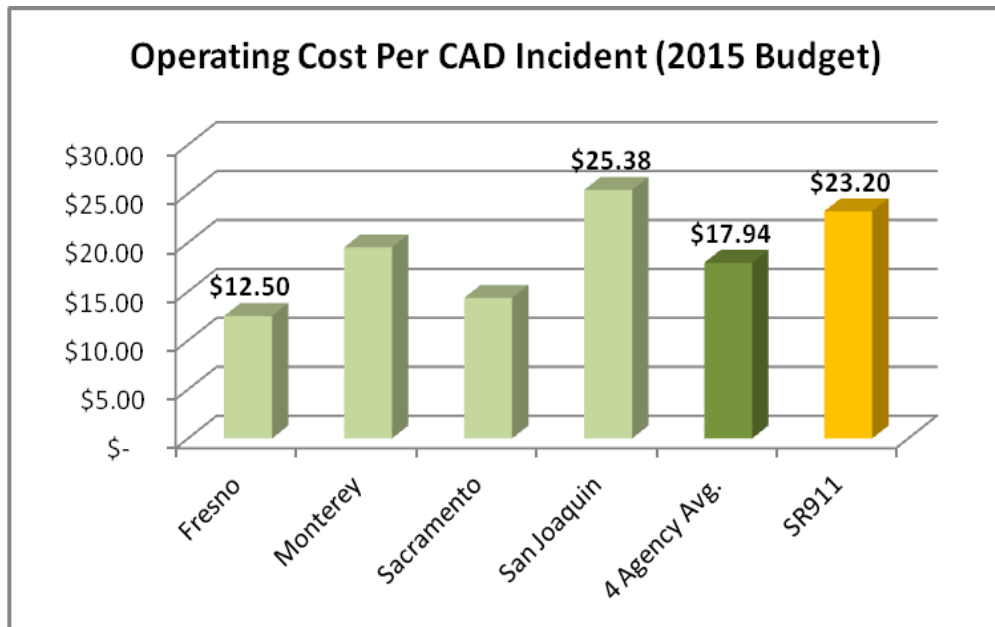
- Not included in the incentive calculations for dispatchers is longevity pay. SR911 does not receive this. While not yet common practice, longevity pay is becoming an incentive more widely recognized in the public safety field.
- To place SR911 compensation packages in the context of their key customers, the City of Modesto pays approximately 11% less in compensation for benchmark staff positions compared to the average of their comparable class agencies.
- To place SR911 compensation packages in the context of their key customers, a SCSO Sheriff Deputy's **top-step salary/benefits plus available incentive pay** is approximately +0.2% above their comparable class agencies and approximately +3.5% above a MPD officer.

In summary, based on the totality of compensation information provided on SR911 in the context of other salary, benefits and incentive plan data, it is very fair to categorize SR911's dispatch compensation pay as (at minimum) "generous." Consequently, it is not surprising that any service issues associated with SR911 can be magnified given the expense for service delivery. Any agency with perceived high operating costs must understand and expect the additional scrutiny applied to their operations. As such, these entities should make every effort to become best-in-class agencies to ensure the services they provide are perceived as value-added.

4. THE PERCEPTION OF SERVICE COST COMPARED TO PEERS.

Another method of cost comparison is benchmarking against peer agencies. While benchmarking should be viewed cautiously as numerous factors influence the data, it is nonetheless often requested by clientele as a comparator. Such comparisons will never be "apples-to-apples" given these multiple variables, to include the self-reporting nature of benchmark data which cannot be validated. Yet, benchmark information does provide some broader indicators and another data set to assist in decision-making.

The following two graphs compare SR911 operating costs to some of their peer agencies²⁷—those agencies that are used during the negotiation process. Two variables are used to illustrate the costs: annual CAD incidents and cost per just actual dispatcher positions deployed in FY 2013/14.



²⁷ Of the eight agencies used in negotiations, 5 chose to respond to the benchmark exercise. Tulare County data resulted in a significant outlier at \$5.80 per CAD Incident and thus the self-reporting data does not appear accurate. As such, they are not included graphically.

As shown by the data, SR911 is not the most expensive agency based on these comparators, but does exceed most other agencies as well as noticeably exceeds the average of the other four agencies. As such, this information further defines the cost for service provided, indicating an important goal on SR911's part to provide the highest services levels given their comparative costs for service provision.

5. THE PERCEPTION OF MODESTO—A KEY SR911 PUBLIC SAFETY PARTNER.

It is well publicized that Modesto has fundamental issues with the topics discussed within this chapter—in sum, the quality and cost for services provided. Survey opinions by Modesto customers are generally less favorable overall (though not dramatically so), and interviews of Modesto customers suggest costs and service delivery are important areas for SR911 to address. Indeed, a report commissioned by MPD in early 2014 unequivocally recommended that Modesto withdraw from SR911 and pursue other dispatch service models. This demonstrates the urgency of addressing key obstacles that are impacting SR911 cost-effective service delivery.

The Matrix Consulting Group believes a Modesto recommendation for departure from SR911 to be pre-mature. Dispatch regionalization is the future throughout the United States, and typically is the model of choice when evaluating dispatch operations under the *Four Framing Elements* described in a prior chapter.

Arguments for maintaining regionalization do not minimize, however, the seriousness of Modesto's noted concerns. These concerns are magnified given they are also shared by some other SR911 customers. Since Modesto is demonstrably the primary customer based on dispatch workload generated, and recommendations within this report will result in higher dispatch costs for service for Modesto based on new cost

allocation modeling, issues voiced by Modesto must, like any customer, be given attention.

In effect, the departure of Modesto from SR911 would be a game-changer for dispatch services in the region and would, in our professional view based on hundreds of public safety studies, represent an overall and dramatic step backwards for nearly all public safety agencies served within Stanislaus County. As such, issues of cost control should be considered important, but paramount is notably improving the perceived level of service provided to all SR911 public safety partners. To that end, the movement of SR911 to a best-in-class agency should be considered a vital few goal.

6. KEY FINDINGS AND CONCLUSIONS.

Throughout the chapter a variety of findings and conclusions has been raised with respect to SR911's key operational issues and obstacles. The following summarizes these key findings and conclusions.

KEY FINDINGS:

- One of the key obstacles in devising a cost allocation model is developing a model that all participants view as representing their "fair share." This is particularly difficult when a revision to the model results in a notable cost increase to some participants; this revision can then become extremely disconcerting.
- There is a distinct and relatively dramatic difference of opinion related to the quality of service provided by SR911 as asked of the SR911 customer and SR911 employees. The difference between these perceptions is important as according to the survey, SR911 strongly believes they are providing quality service at a high level while nearly 220 customer survey respondents have a notably less positive viewpoint.
- SR911's compensation package is generous based on a variety of comparative metrics, regionally, in California, and throughout the nation.
- SR911's operational costs when compared to various peer agencies are more expensive than most other agencies and demonstrably higher than those agencies' average costs.

KEY CONCLUSIONS:

- In order to overcome the obstacle related to cost allocation “fair share” perceptions, the impacted agencies will have to perform their own due diligence analysis with respect to identifying and costing out what alternatives are available. It should be recognized that only in the minority of circumstances will an agency be able to develop an internal dispatch operation that is more cost-effective. There are exceptions to this as reflected by Newman PD’s recent departure.
- The evidence is compelling there is a customer service issue. These perceptions must be addressed. No business, dispatch or otherwise, can survive long-term when less than 50% of customers agree that service quality is high and service levels are consistent. Therefore, it is important for SR911 to address the staffing, operational and customer service issues noted in this report for long-term survivability.
- It is not surprising that any service issues associated with SR911 can be magnified given the expense for service delivery. Any agency with perceived high operating costs must understand and expect the additional scrutiny applied to their operations. As such, these entities should make every effort to become best-in-class agencies to ensure the services they provide are perceived as value-added.

Recommendation #34: Given the impact of any SR911 customer leaving the agency, prior to the proposed departure of any SR911 service partner, an independent evaluation should be conducted regarding optional dispatch service opportunities available to the departing agency compared to SR911 services. This should be sponsored and paid for jointly by SR911 and that agency and should incorporate short, mid, and long-term costs and return-on-investment calculations.

Recommendation #35: SR911 should undertake various best management practices initiatives to become a best-in-class dispatch service provider.

Recommendation #36: Within the next 24-months SR911 should seek to become CALEA (Commission on Accreditation for Law Enforcement Agencies, Inc.) accredited and/or NAED (National Academy of Emergency Dispatchers) ACE (Accredited Center of Excellence) certified.

APPENDIX A – CUSTOMER NARRATIVE RESPONSES

Strengths Identified (Unedited)
24 hour
a few of the dispatchers are really good
Ability to assist with perimeters quickly
Ability to dispatch multiple agencies
ability to run multiple channels
ability to work well as a team
Able dispatchers that are cross-trained
Able to react in high stress situations
Accurate and timely information
Any time I have had an issue, they have been available to resolve it.
attentive
Being cross trained between s/o and pd
Better top management that properly represents SR911
CALL HISTORY AND PREM HISTORY KNOWLEDGE
Calm during critical incidents
Capable of handling in progress situations
Capable to coordinate agencies during crucial and non-crucial incidents.
Care about our staff
Caring people
Centralized dispatch
checking on officer
Code knowledge, communication with field agencies
Collocated coordination of most of the emergency dispatching for the entire county.
Combining of Modesto PD, Fire and Stanislaus Sheriff in one building
communication
Communication amongst dispatchers
Communication and sharing information
Competent dispatchers
COURTEOUS
Critical Incidents
Critical Incidents - For the most part, when it is time to rock and roll, they are on it.
Customer Service
Customer service
Customer service.
Desire to be a partner in public safety
Desire to do what is right
Desire to help
detailed
Dispatch center leadership is receptive to feedback from the field
Dispatch personnel work with our agency during emergency incidents
Dispatchers are familiar with the officer that are being dispatched and know how to work with them
DISPATCHERS ARE GOOD AT RECOGNIZING WHEN TWO CALLS ARE LINKED TOGETHER

STANISLAUS COUNTY, CALIFORNIA
Study of Stanislaus Regional 911 – Phase I & II

DISPATCHERS ARE GOOD AT REMEMBERING PRIOR CALLS
Dispatchers are highly trained
Dispatchers are professional
Dispatchers are thorough in obtaining information for the officers
dispatchers are very good at what they do
Dispatchers who are willing to jump in and assist on other channels
Doing more with less
During the critical incidents I have been on, I've been fortunate to have a well trained dispatcher
Easy to work with
efficiency
Everybody is under one roof.
Everyone in the same room
experience
Experienced Dispatchers
Experienced dispatchers
Experienced dispatchers (generally).
Experienced dispatchers who relay relevant information
experienced staff
Experienced people
Fast
flexible to be a part of special assignments such as x-fest
Function with lack of staff
Good at critical incidents, setting perimeters, etc
Good Supervisors and leadership
Great assistance when requesting resources, MID, PGE, and many others.
Great communication skills with field personnel
handling of critical incidents
hard to say
Having avl (vehicle locator)
Having (redacted name) overseeing much of what goes on.
Helpful during critical incidents
history and understanding of the workings of our dept
housed with other emergency services
I believe SR911 Management is top-notch, caring and very competent.
I believe the dispatchers are professional and well trained.
I believe the dispatchers do their best with the resources they have.
I like that dispatchers are trained to work multiple desks.
Integration between fire/police
It affords dispatchers the opportunity to work within ear shot of each other during a multiagency event. Increase the speed at which information is shared.
It helps citizens
It is located in the city of Modesto
It is nice to have a combined center to dispatch the S/O, PD and fire.
Job knowledge
(redacted name)
Knowledge
Knowledge of area

Knowledgeable
KNOWLEDGEABLE
knowledgeable
Length of service
Local
localized dispatch center easy to obtain information
Located within Stan Co
(redacted name)
Maintain calmness during critical incidents
management desires to improve the agency
Managing resources during major incidents
Most info is received in a common location so emergency calls are not transferred from place to place
Most of our dispatchers handle large scale incidents very well.
most of the employees there
Mostly Good staff
Multi tasking
multiple agencies in one location
multiple agency commuting capabilities
None noted
None!! very unprofessional, rude, and lack of supervision
Only a few good dispatchers
Open lines of communication for any issues that arise
Overall daily incident support from the dispatchers for patrol staff
Partnership
People
People who want to do their job well and try to do it to the best of their abilities.
Personnel are easy to talk to
Personnel are generally well trained
Police fire and elms In the same building
Pretty good with staying on top of technology upgrades
Problem resolution
procedure
Professional service
Professional
Professional
Professional and courteous
Professional conduct during critical incidents
professional dispatchers
Professionalism
Providing information to responding officers during critical incidents
Quality Staff
Quick response
quick to assist when more information is needed
Quick to assist when needing call backs.
Radio infrastructure
Recall by some dispatchers

STANISLAUS COUNTY, CALIFORNIA
Study of Stanislaus Regional 911 – Phase I & II

Receptive to questions
Regional Center that provides service to most of the fire agencies in the county.
response and availability
responsive
Responsive and effective supervisors.
Responsive to Op Area notifications/requests
several of the dispatchers are great on the radio and are well trained and experienced
Should be a cost savings with more participants
solid core of experienced / caring dispatchers
some dispatcher
Some dispatchers are excellent when it comes to big incidents. I.e. perimeters, etc. SOME
Some dispatchers go the extra mile to ensure I am getting the correct information when I ask for it.
Some dispatchers have a positive attitude
Some have the ability to multi task
Some outstanding dispatchers (a few veteran ones)
Some tired but dedicated personnel
speak clearly
SR911 always listens to the customer
SR911 is always willing to work with the customer for a joint solution.
SR911's leadership has more depth and knowledge than ever
STAFF WILL DISPATCH A UNIT AS SOON AS ONE BECOMES AVAILABLE
strong, intelligent personnel
Supervisors
Team, we all know each other
Teamwork
That it's a regional dispatch center which allows for better continuity with communications
The ability to quickly communicate with the S/O is invaluable
The dispatchers are very good very intuitive
The dispatchers, their skills in dispatching, and in remaining calm during high stress incidents.
The employee
The existence of a Sheriff's Office Administrator/peace officer assigned to SR911.
the fact that it exists
The people who work there.
The people, they are hard working and do a good job.
The qualified dispatchers are fabulous!!!
There are a FEW very good dispatchers, who I love having on the radio when I have something big going on
There are a handful of high quality dispatchers
There are no significant strengths that set SR911 apart from other dispatch centers I've seen
There are some well-trained veteran dispatchers who do a good job
There is a select group of very good, hardworking people there who are great at their jobs.
THEY ARE ACCESSIBLE TO MY STAFF WHEN NEEDED
They are available to obtain additional information.
They are available when needed.
They are familiar with how we work and what we need
They are good at doing research. Sometime without even asking

They are willing to help resolve any problems that might occur
they can filter out bad information sometimes
They care about the people they work with
they dispatch out of the same facility and can communicate easily with the other agencies we may need to 'be in contact with
They do well under pressure
They filter calls coming in to make sure we don't waist our time.
They have experienced dispatchers that have been in many critical incidents
They have some very experienced dispatchers
They respond quickly in emergencies
They work well with the department from what I have seen
thorough
Thorough Dispatching.
timely response for requests phone/radio and cad logs
trained personnel
Training
Understanding of what goes on in the field
very helpful
Very professional during critical incidents.
Veteran dispatchers
Well trained and customer service oriented dispatchers
Well trained, well qualified staff who are dedicated to serving the community.
(redacted name)
When staffed properly service is good
When visiting the COMM center, I have been treated very well and any question I had was answered with professionalism. I feel most dispatchers (99%) are doing the best they can with what they have to work with
Willingness to engage/discuss issues.
Willingness to learn
Work very well under stress and pressure
Working with field units on critical incidents

Opportunities for Improvement Identified (Unedited)
800mhz is a dead technology
911 call takers that are LE trained to better understand call types
A "I don't work for you" attitude
A huge culture changed needs to occur where they realize they are providing a service to customers (citizens and LE agencies) and treat them appropriately
A smooth transition to 800 Meg radio system, hopefully a huge improvement with radio clarity.
Ability to be held accountable for actions
Ability to let CAD do what it was designed to do and can do, not use it at a crutch to not allow access and information which would allow a better service and distribution of information.
Additional channel for probation.
Additional need for personnel
Additional staffing to staff consoles and call-taking.
address verification could use some improvement
Administrative leadership leaves a LOT to be desired
agencies having their own dispatchers
Always make us wait

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answer the radio when officers are trying to run subjects or get info
apparent indifference by dispatch / attitude of indifference
Attentiveness
ATTITUDE
ATTITUDE
Attitude
Attitude
Attitude of dispatchers seems they don't work with us and when. Requests are made it's apparent they don't want to do it.
Attitude on radio
Attitude when citizens call
ATTITUDE
Because of the model, average call processing in 3.5 minutes (scary). Medical are transferred to the private and then back to SR 911 before many calls are dispatched. SR 911 does not provide pre-arrival instructions.
Being a dispatch center verses a command center presents some limitations
Being available for officers who need assistance via radio. The typical response to an officer radioing dispatch is, "Stand by, on 10-21."
Being on 911 calls while officers trying to use radio
being sure to list proper address for rp and ro.
Being told to stand by I am on 911
Better attitudes
better partnership with the PD, more involvement with daily operations
better radio towers
Better staffing, call takers, and replace directors!
better supervision
Bringing the quality of service to a consistent level. Some dispatchers are head and shoulders better than others.
Budget
Budget
CAD functionality, CAD support, CAD flexibility and overall technical support and attitudes
CAD network
Call taking
Communication
COMMUNICATION ON WARRANT AND 488IC REQUESTS VIA COMPUTER
COMMUNICATION WITH CITIZENS
COMMUNICATION WITH MPD PERSONNEL
Cooperation
Costs
Critically short staff and underfunded.
Cross training
Current cost allocation model
Customer Service
Customer Service
Customer service and courtesy
Dedicated Dispatch channel operator and dedicated command 5 operator
Demand on dispatchers at peak times
Depth in training
Differences in the way calls are dispatched
Dispatch calls when they are on the screen rather than wait to give the calls to beat officers.
Dispatch needs to remember we don't work for them, they are there to assist us
Dispatch, like many agencies, is seeing difficulty in recruiting qualified personnel
Dispatcher attitude during radio traffic.
Dispatchers attitudes

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Dispatchers have developed an adversarial attitude with officers and detectives
Dispatchers having to be call takers simultaneously.
Dispatchers having to take 911 calls causing a back up on the radio for deputies they need more call takers.
Dispatchers lack interpersonal skills
Dispatchers not falling into the negative attitudes
Dispatchers not multitasking as call takers.
Dispatchers should listen and put accurate information in calls
Dispatchers should mandatory be assigned to ride-out with different law-enforcement agencies in their area.
Dispatchers should not answer 911 calls!!
Dispatchers should NOT be answering phones while on the main radio channel
Dispatchers should not involve personal feelings when dispatching
dispatchers should not take 911 calls
Dispatchers taking 911 calls. Law enforcement has to wait an extended amount of time waiting while dispatchers have to take these calls. More call takers are needed.
Dispatchers thinking proactively instead of reactive.
Dispatching the closest units to fires.
Dispatchers monitoring radios instead of answering phone calls
Distributing calls for service equally among officers
do not get involved with drama with officers
Doing more with less has to stop
EMD training.
equipment
equipment
equipment
equipment updates
Equipment, my radio is regularly fuzzy and has low volume.
FIX PHONE TREE-GET LOTS OF COMPLAINTS
Get Valley com in the same room as SR911-remove lag for AMR and Fire EMS dispatches
Getting away from having to transfer calls to Valley Com
Getting Cell Phone 911 calls to come to SR911 and not go to CHP
getting quality information initially
Governance is broke. County runs the center and they do not have fire engines or fire stations. The JPA does not have authority. Not a true JPA. Stakeholders are not valued, nor do they have influence over the system.
growing volume of calls
(redacted name)
Having dispatchers taking 911 calls, making Deputies wait on scene for any type of transmission or wants check
Help dispatchers be able to focus on dispatching and controlling fire traffic as opposed to call taking
Hire more dispatchers
Hiring sufficient competent, motivated and qualified people.
Holding calls that could be dispatched.
If a call is not a law enf issue, don't enter it
if mpd had its own dispatch center
I'm sure this is an I.T. problem, but it's pretty frustrating when I'm standing in the middle of a road or inside a house and my radio will NOT pick up radio traffic. I have had dispatch call the residence the home owner to ask me to answer my radio. I appreciate the dispatcher was concerned for our safety.
I'm tired of being told to standby because my dispatcher is answering a phone call, emergency or not, this is unacceptable
Implementing a customer service system

Implementing a fully-functioning dispatch system
Improve the system so it does not take 4 or 5 minutes to log on.
Improved infrastructure.
Improved staffing would limit some wait times and reduce stress on dispatchers on multiple channels
In regards to the top #1, other dispatchers will not lift a finger to get additional info unless I specifically ask for it, such as, "do I have a suite # for the business"- response "No". Maybe try calling the business back to get the info, if number not available, then advise me that is the situation.
Increase of personnel
Enhanced communications
It seems that there are only a few dispatchers who really care about their job. The rest just SEEM to be there for a pay check
Juggling multiple incoming calls for service from public and agencies, having staff to meet these needs
Keep a dispatcher dedicated to one channel
Keeping citizens on the phone for incidents in progress for updates.
Knowing bOL's for active priority calls
Lack of dispatchers when we get busy
Lack of employees
Lack of interest in including jpa members in decision making process
Lack of personnel to cover dispatch/call taker
Lack of staffing
Lack of staffing
Lack of staffing causing delays in response from dispatchers due to handling 911 calls by phone
leadership
Linking private ambulances to our cad
Listening to radio and not saying 10-9
low staffing
Low staffing
LOW STAFFING LEVELS
Maintaining/retaining qualified personnel
Morale, dispatchers seem to be irritated on the radio. sometimes this appears to be due to low morale in the center
More available for officers when officers call them on the radio.
more call takers
More call takers so that dispatchers do not have to handle both dispatching and call taking at the same time.
More call takers. Allow a command center system
More detailed info put into lower priority calls
more dispatchers needed
More employees
More open communication with AMR dispatch.
More open or transparent operation and administration
More personnel
More personnel on a daily basis.
More staffing
More staffing
More staffing
More staffing
More staffing.
More Staffing. They need more call takers.
Move from a dispatch center to a command center
Moving EMD from private sector to public sector

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Need additional dispatchers and call takers
Need call takers.
need more call takers
Need more call takers
need more staffing
Need more staffing. Our dispatchers should not be constantly answering 911 calls.
Need significantly more staffing - absolutely ridiculous that a field unit on a primary channel is put on hold so a 911 call can be answered.
need to accept all calls at the time service is requested
NEED TO ASK MORE QUESTIONS WHEN ANSWERING CALLS
NEED TO BE FRIENDLIER WITH CITIZENS
Need to have a better IT system in place. More Fire-Based
Need to have dispatchers without attitude
Need to provide better service to agencies contracted through sr911
New CAD
not customer service oriented
Not enough call takers.
Not enough call takers. Dispatchers should never answer 911 calls
Not enough personnel
Not putting officers on standby due to them being on the 911 line
Number of agencies on one channel
Officer Safety due to staffing in center
our inability to communicate with other local agencies in our area
Passing along critical information to responding units
Pay attention to the officer.
Pay dispatchers more so that more qualified applicants can be recruited.
Paying attention to radio and computer
placing officers on hold to answer 911 calls
poor frequency or unreadable traffic on the radio
poor radio reception
Poor staffing levels
Primary channel dispatchers who are not also answering 911 phone calls.
Professional service
Professionalism
Professionalism
Professionalism
Proper classification of calls
proper training
Qualified employees
Qualified personnel
quality of communication equipment is poor
Quality of radio equipment (outdated)
Quality of software
Quality of training
radio
Radio quality
Radio Reception
Radio Reception
Radio reception on the county fringes (Del Puerto Canyon).
radio signal quality
Radio system is terrible
radio traffic is unreadable
Radios don't work
Response to calls

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RESPONSE TIME ON PHONE/PLACING ON HOLD WHEN WE HAVE OTHER AGENCY WAITING
Retaining employees
Retaining qualified personnel
rude response to the caller
sending units to calls even if the call isn't in their beat
separate dispatcher for each channel
Several dispatchers very unprofessional on the air, and nothing ever happens, we do it and we are disciplined, tired of it.
Should switch to digital
Slow to dispatch calls. Too much lag time between call receipt and time of dispatch
Software systems need to immediately show "hits" to dispatch when a vehicle is run by patrol in their unit.
some dispatchers need customer training service
Some of the attitudes of the dispatchers need to be fixed.
Some of the dispatchers seem rude or are short with Deputies
Some rude employees
SOME STAFF ARE UNFRIENDLY AND UNPROFESSIONAL IN THEIR INTERACTIONS WITH PERSONNEL
spreading the wealth among different officers
SR-911 staff need to have less attitude with field units. The attitude on the Radio by some dispatcher is downright embarrassing
staffing
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Staffing
staffing 911 lines
staffing call takers so dispatchers can dispatch and monitor the radio
Staffing call takers to eliminate the use of dispatchers as both dispatcher and call taker
staffing demeanor

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Staffing levels
Staffing levels
staffing levels
Staffing levels.
staffing, dispatchers are constantly asking radio traffic to standby so 911 calls can be handled
Staffing, staffing, staffing
STAFFING. It is very difficult when arriving on scene of an incident and while contacting dispatch to give an "on scene report" so my other units can get the picture, I hear "stand by on 911". Not their fault, they have to dispatch emergencies; however, if staffing was increased, this may not happen as often.
staying current with new technology
Still no communications for deputies on calls for service in Del Puerto Canyon/Diablo Grande, this is a huge liability and in need of improvement
Supervision
Teamwork
Technology
technology deficiencies - antiquated legacy equipment
telling citizens to call back at a later time
terrible phone tree
The ability to dispatch Fire Units when the 911 call is received
The ability to provide all emergency dispatching for the county under one roof.
The computer system they and we work with is the biggest challenge.
The dispatch center is significantly underfunded
The governing bodies, and SR911 need to come up with a new billing model, to ensure correct proportions are paid from participating agencies.
The majority are on point and efficient. they are highly appreciated
The need for better communication, or central dispatch, for all agencies. Having to call back to AMR dispatch for further information slows the information to field units (or it gets completely left out)
The need for more personnel in SR911.
The need for repeated Tactical Channels that are recorded.
The politics involved considering the egos involved.
The very best dispatchers must be on MPD channels 1 and 2; they let them go do fire or other slower agencies and then we get the trainees? It's terrible...we pay the most and are the busiest and get worst dispatchers (and they get more pay when they are MPD main channel certified I hear?)
There should never be a time an officer be told "Stand by" for longer than a few seconds. Too much of an officer safety issue
They are too passive.
They ask officers to repeat transmissions often.
They have the ability to be a great team however the lack of wanting to work together is apparent in their results
They need more people.
they need more personnel
They need more staff to do the job.
Timely communications with other dispatch centers
Training
Training.
treat callers as customers
Understanding of what the officers need and why they need it
Understanding what information is important, relevant, or necessary to a field situation
Very poor supervision and accountability.
Very rude when it's busy
waiting for warrants/information while dispatcher answers a 911 line

We need the dispatch sooner AMR is still getting the dispatch way before us leaving a lag in response time
we pay for two channels and they are always taking 911 calls, we need what we pay for (call takers hired and trained)
We stand by too long while the dispatcher in on the telephone
When issues are brought to supervisors sr911 supervisors do not fix the problem or they fail to follow up.
When they are put on hold and become available they should call the unit back in order they were put on hold
With increasing call volumes, dispatchers are being forced to do more, with less
With various agencies combining and/or disbanding, dispatchers are constantly forced to learn new processes.

APPENDIX B – BEST MANAGEMENT PRACTICES CHECKLIST

Best Practices Target / Initiative	Yes / No	If no, why not?
A public safety dispatch center is utilized, that jointly dispatches law enforcement and fire calls for service.		
Communication centers perform operations consistent with the Office of the Legislative Auditors “Seven Actions for PSAPs” to include: 1. Develop and use SOPs. 2. Support a trained and qualified workforce. 3. Maintain adequate communications and network equipment. 4. Explore cooperative equipment-sharing and dispatching opportunities. 5. Keep records and measure performance. 6. Promote info. Exchanges among public safety response agencies. 7. Educate the public on the 9-1-1 system and services.		
A backup PSAP has been established for the communication center(s).		
Uninterruptible power supplies and backup generators are available to prevent power disruptions from interrupting calls in progress or incoming calls.		
All dispatchers have training that meets or exceeds APCO (Association of Public-Safety Communications Officials International, Inc) or equivalent training guidelines.		
Communication centers have developed and utilize written procedures to standardize effective dispatch practices.		
Communications centers have developed a Strategic Plan outlining future direction and opportunities based on growth, changing technologies, etc.		
90% of the 9-1-1 calls are answered within 10 seconds.		
A call priority system has been developed and is implemented that effectively distinguishes between low, medium and high priority calls for service. Centers that dispatch medical have a MPDS (medical priority dispatch system) in place.		
A quality assurance (QA) program is in place to assure calls for service compliance with established protocols.		
Calls for service reports are run on a regular basis to track performance to standards and assist in management decision making.		

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Best Practices Target / Initiative	Yes / No	If no, why not?
The communications center has established a complaint tracking and resolution program.		
Communication centers have designed and maintain a MSAG (master street address guide) on a consistent basis.		
In-vehicle computers are utilized in patrol sedans to reduce the extent of dispatcher workload such as records checks.		
The communication center is CALEA (Commission on Accreditation for Law Enforcement Agencies, Inc.) accredited and/or NAED (National Academy of Emergency Dispatchers) ACE (Accredited Center of Excellence) certified.		
Communication center staff are largely Civilians.		
A 9-1-1 telephone cost recovery fee is utilized to finance the operations of the dispatch center.		
Equipment, furniture and facilities have been spatially and ergonomically designed to reduce environmental stresses, the risk of repetitive motion injuries, eye strain due to lighting and constant use of CRT/LCD screens, etc.		
The dispatch and radio equipment is well maintained by telecommunications staff. Equipment and software is upgraded and/or exchanged on an appropriate replacement cycle.		
The organization has a formal Recruitment (Strategic) Plan containing a clear marketing/outreach plan with measureable outputs and outcomes to determine success.		
Marketing efforts formalized in a strategic plan or otherwise, focus on key job satisfaction (e.g. community service) and compensatory benefits of becoming a dispatcher versus pursuing other professions.		
As part of effective marketing, the organization has developed an effective "employer brand" to attract qualified applicants (e.g. best technology in the region).		
As part of strategic planning, The organization has developed a formal criterion, and profile, for the types of applicants desired, resulting in attracting the "right" candidate types as opposed to weeding out the "wrong" candidates.		
Recruitment is coordinated with other public safety entities within the larger government agency.		
The organization offers a competitive compensation package consistent with the region.		

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Best Practices Target / Initiative	Yes / No	If no, why not?
The job description is consistent with the expectations and knowledge, skills, and abilities required of the job.		
Job classifications are regularly reviewed and updated to ensure changes in job complexity; duties and responsibilities are properly represented and subsequently reflected in job descriptions; this includes response by HR to requests from The organization for review.		
The organization effectively advertises in various local, regional and national mediums and has a dedicated budget for such advertising.		
The organization participates in various recruiting methods, including career days, job fairs, and other events.		
The organization uses a dedicated and regularly updated website as a cornerstone of cost-effective recruitment marketing.		
The website publishes the organization's vision, mission, history, job expectations, and prominently displays the minimum qualifications for employment.		
The website includes a video advertisement of agency dispatch operations in streaming video or similar technology.		
Recruitment focuses reasonable efforts on professions often dominated by women.		
Hot Links" to the organization's website are hosted on community woman's organizations websites.		
To expedite self-screening given the technological requirements of a dispatch position, applications are only accepted through the internet.		
Market surveys are periodically conducted (full comp/class every 6-8 years) by Human Resources to compare salaries and benefits against market competitors.		
The organization has a recruitment committee providing oversight of the recruitment program.		
The organization has formal and identified recruiters.		
A thorough process of identifying, selecting, training, and evaluating recruiters has been completed. The organization communicates that effective recruitment is a high priority.		
Identified recruiters have received formal recruitment training consistent with CALEA or other professional standards.		
The organization encourages word-of-mouth advertising, and rewards employees for identifying qualified applicants who join the organization.		

Best Practices Target / Initiative	Yes / No	If no, why not?
The process for selection of recruits is thorough in terms of assessing a candidate's qualifications and job suitability.		
The application/selection process has been streamlined to contain only essential steps necessary to confirm a candidate's probable job success. The process is consistent with other dispatcher selection programs.		
Lateral candidates undergo a streamlined application/selection process.		
The application process is expedited to limit wait time from the prospective candidate's perspective. By example, Background Investigations take a reasonable amount of time (an average of less than two months from initial application received until the background check is completed).		
The organization has an independent and formalized Retention Plan or similar document as a component of a broader strategic plan. This plan starts by identifying factors that employees like and dislike about the organization, as well as what would encourage employees to stay longer.		
The organization offers a competitive compensation package consistent with the region.		
The organization offers cost-of-living salary adjustments.		
The organization offers incentives such as longevity pay, tuition reimbursement, etc., consistent with regional competitors.		
Compensation practices recognize the achievement of specialized skills (e.g. CTOs) and/or certifications.		
The organization offers job-sharing, part-time employment and other flexible work options.		
The organization has up-to-date facilities and technologies and ergonomically-designed work stations.		
The organization provides breaks and allows meals to be taken away from work stations.		
Managers take a professional interest in the individual objectives and priorities of employees.		
The organization supports the employees and demonstrates they value employee contributions to ensure long-term employee commitment.		
The organization communicates effectively to ensure that employees feel both informed and listened to. The organization follows through on expectations that have been created, thereby ensuring long-term employee commitment.		

Best Practices Target / Initiative	Yes / No	If no, why not?
The organization has an effective performance management program (annual written evaluations) to award high performance and discourage/remediate low performance.		
The annual performance evaluation includes a career development component including: development of annual training plan, development of annual performance goals, etc.		
The organization has a process that encourages and includes employee input about decisions that impact the workplace.		
There is a formalized and regularly updated training needs assessment process that includes all staff.		
There is a systematic review of the in-service training curriculum to ensure needs are met.		
Training is provided to meet basic in-service update training and required certifications.		
In-service training hours average at least 40 hours per employee per year.		
All newly assigned supervisors attend a mandatory supervisory class.		
Employees are able to participate in task forces, when feasible, in areas of personal interest.		
Periodic rotation of individuals assigned to specialized positions (e.g. training, technology support, etc.) is conducted to provide opportunities for all interested employees to participate.		
The collective bargaining agreement provides a clear policy for filing grievances.		
Dedicated staff is assigned to the Labor Relations function to provide support, administration, interpretation, and application of the collective bargaining agreement.		
An existing, viable, formal mentoring program for new employees is available.		
The organization employs a formal career development program to promote professional growth, to inspire personal motivation and to enhance effectiveness.		
Exit interviews are routinely conducted to determine the causes for turnover, and data collected and analyzed to determine possible trends that can be rectified.		