01 April 2018

DISPATCH AND FIRE/EMS OPERATIONAL ASSESSMENT – RESPONSE AND DEPLOYMENT

CITY OF PEORIA, ILLINOIS

Prepared by:

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CONSULTANT PROPOSAL

FITCH
& ASSOCIATES

01 April 2018

Mr. Patrick Urich
City Manager
City of Peoria
419 Fulton, Suite 207
Peoria, Illinois 61602

Via Email: Citymanager@peoriagov.org

Dear Mr. Urich:

Fitch & Associates (*FITCH*) is pleased to send you this Proposal for a Dispatch review and a Fire/EMS Operational Assessment for Response and Deployment for the City of Peoria. This study is intended to be a holistic look at dispatch categorization, fire medical response, ambulance response and transport.

In this proposal we have outlined our understanding of your needs and have organized the information requested for clarity. The *FITCH* team recognizes the importance of this project to the City and will objectively assess and benchmark the performance of each service line. We will identify implementable opportunities for operational and organizational efficiency, effectiveness, improvement, and long-term sustainability based on modern best practices and the unique characteristics within the City and AMT (Advanced Medical Response) the private ambulance operator.

Our firm is uniquely qualified to submit this response and perform the work required. Fitch & Associates has provided similar planning and analysis services for over 1,000 clients represented in every continent except Antarctica and in all 50 U.S. States throughout its 30-year history. Our team has wide ranging technical expertise and specific experience in communication center accreditation, Fire deployment optimization and private ambulance response optimization. Our team members have served as peer assessors, team leaders, accreditation managers, and co-authored the new 6th Edition of the Standards of Cover Manual.

As proposed, Mr. Guillermo Fuentes, MBA will be managing partner. Mr. Fuentes has built some of the most innovative dispatch centers in the world and has over 25 years of experience in emergency services spanning both EMS and law. Dr. Steven Knight, EFO, CFO will serve as the Lead consultant and project manager for this project. Chief Knight retired from St. Petersburg Fire & Rescue, FL as the Assistant Chief and also served as the department's accreditation manager for two successful rounds of reaccreditation. Ms. Carlynn Page will be the lead dispatch consultant. Ms. Page has been the lead accreditation evaluator for the Academy of Emergency Dispatch for over a decade. Dr. Bruce Moeller will support Chief Knight in the risk assessment and evaluation. Dr. Moeller is a retired Metro Chief and a former city manager. Dr. Moeller started his career in a suburb of Chicago and has been the keynote speaker at the Illinois Fire Chiefs conference.

Our summary understanding of the project is that you seek a consultant team to perform answer two specific questions:

Are the right resources going to the right calls?
Are all the resources that are sent appropriate?

In order to answer these questions we will perform two separate but linked consultancies:

1) Dispatch review of call taking to understand how the medical priority dispatch product is being utilized, if it is categorizing and prioritizing calls optimally and how the current practice compares to best practice.

2) Fire/EMS deployment operational assessment in order to determine how the fire program compares to best practice. What the fire role should be in EMS, and if the fire response is adequate or can it be modified to be more efficient and effective.

What is the Private ambulance service role, what are the response time metrics that should be assigned to transport. How does the system of first response mesh ultimately with the transport role of AMT.

While the projects are listed as independent they are a singular project that flows together. The output of one will strongly influence the other.

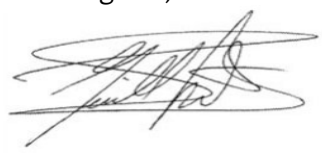
We have separated the description of activities to take place as; dispatch and Fire/EMS. The Fire EMS modeling applies to both the Fire department and the private provider (AMT). We will use a best practice white paper approach to design the system:

1) we will begin by determining what is possible to do to improve categorization and prioritization of response
2) We will then determine the response package (with input from the medical director, fire command and EMS (AMT staff))
3) We will harmonize response times to adjust severity of the call with the right resource assignment and the right response time for each agency.

We understand that the city is currently engaged in a standard of cover analysis, where possible we will use what has been done. Some work will need to be redone since this engagement changes the input from current call intake to best practice categorization and prioritization.

We appreciate the opportunity to submit this response and look forward to talking with you more about how we can provide you superior services and value.

Warm regards,



Guillermo Fuentes, MBA
Partner

DISPATCH AND FIRE/EMS OPERATIONAL ASSESSMENT FOR THE CITY OF PEORIA, IL

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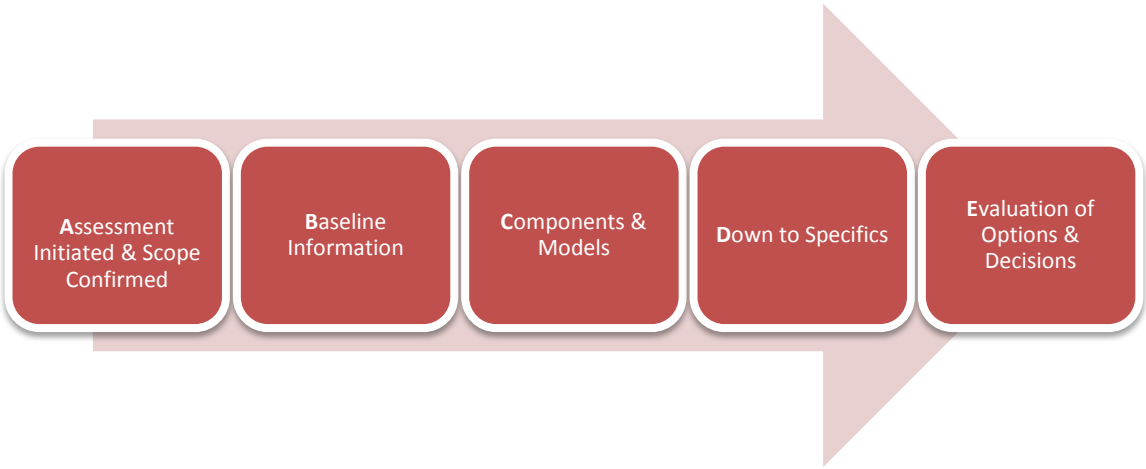
PROJECT APPROACH AND UNDERSTANDING

We have organized the engagement to allow the City optimal flexibility to determine its best value as the project develops. The following figure graphically illustrates the project approach.

Figure 1: Description of Project Approach



Project Initiation, Kickoff, and Acquisition and Review of Background Information

The first step in the process is to conduct a kick-off meeting to finalize the work plan and timeline and is paramount to a successful study and the ability of *FITCH* to maximize the effectiveness of its work teams. At the kick-off meeting an overview to the approach of the project will be provided to stakeholders. Any final logistical issues will be resolved during this phase. It is in this phase that key representatives will review and prioritize items and provide an opportunity to refine any specific objectives related to each service area or objective.

During the project initiation and/or first on-site visit, personal interviews will be scheduled with the following key stakeholders.

- City Manager
- Elected Officials
- Dispatch center manager
- Fire Chief
- Ambulance CEO
- Department Leadership Team
- Labor Executive Board (If appropriate)
- EMS Medical Director
- Hospital Leadership

Concurrently, *FITCH* will submit an Information and Data Request (IDR) that the Department will typically complete within 14 to 30 days of project initiation.

Overview of the Community Served

Within a risk-based schema, the first step in an analysis is to understand the individual or specific aspects to the Dispatch center and the Fire Department/AMT . Therefore, a description of the community served by Department will be completed. Elements included in the community description may include:

- Legal Basis
- Governance and Lines of Authority
- Brief History of the Agency
- Organizational Design
- Financial Basis, including Operating Budget, Funding, Fees, and Taxation
- Geography
- Topography
- Climate
- Population
- Demographic Features
- Disaster Potential

Dispatch Center Services

Key Issues

Dispatch centers are pivotal for emergency services; they are the gateway to the community and as such, they are the "first, first responders." The key responsibilities of a dispatch center are:

- To properly categorize calls and prioritize the responders that are required to deal with the emergency at hand.
- To ensure emergency services personnel scene safety.
- To appropriately maintain mission critical records.

The challenges facing communities, both through industry dynamics that drive change, and broader perspectives, include:

Increased demand and rising call volumes

There are concerns about increasing call volumes and call complexity associated with 911 utilizations nationwide.

Medical content is expanding

The medical community and public expect that more sophisticated clinical service will be available at local 911 centers.

Roles for fire agencies are changing

With more questions on how many responders are appropriate on scenes, fire response is at the forefront. The dispatch center plays a key role in ascertaining the what and how many resources are required.

Technology is evolving rapidly

Mistakes are expensive and shackle agencies' productivity and capabilities.

Funding pressures continue

Governments throughout the world require emergency personnel to accomplish more with fewer resources. Resources are scarce as local governments struggle to replace basic infrastructure.

Public expectations are high and include pressure to meet response targets

Agencies throughout North America are finding that the public expectations for service improvement have been influenced by the instant nature of our society and the media.

PROPOSED PROJECT METHODOLOGY (DISPATCH CENTER SPECIFIC)

Our review of the Peoria 911 Center will focus on one of the seven major areas of inquiry, specifically on Process. The framework acknowledges that state, regional and local government entities, public safety agencies, medical facilities, taxpayers and many others must work together in order to provide the highest possible level of quality within available resources. The following represent the elements that are typically covered within the course of a communications center process review.

Communications Center Processes Review

- Protocol/procedure development process
- Quality of performance
- Initial training and continuing education
- Use of supervision
- Physician involvement – if EMD
- Audit/review process and use of findings
- Accreditation(s)
- Quality (QI) and measurement systems
- Caller interactions
- Certification and licensure requirements
- Agency specific dispatch procedures
- Specialized procedures (e.g. wildfire, NIMS, law enforcement, air medical)

With the communication center process review in hand the Fire/EMS evaluation team will begin its work.

PROPOSED PROJECT METHODOLOGY (FIRE SERVICE SPECIFIC)

We use a nine step process to accomplish a comprehensive evaluation of the fire service:

1. Current service provided
2. Stakeholder input
3. Identify optimal fire station location
4. Analyze need for new stations or identify opportunities for consolidating existing stations and sharing of equipment and facilities
5. Verification of data and development of reporting tools
6. Fire and EMS staffing and response
7. Analysis of Fire and EMS apparatus and resource configuration to meet both current and future needs
8. Compare and contrast with national and regional models
9. Establishing service levels to be offered

Overview of the Department and Currently Provided Services

The next step is to review the services that are provided within the existing deployment model and the associated baseline performance for the Department and mutual/automatic aid agencies. All of the currently provided service delivery programs will be evaluated in an effort to establish the current deployment strategy and to identify the current baseline performance. The deployment related service delivery programs to be evaluated include:

- Fire Suppression
- Rescue
- Emergency Medical Services
- Hazardous Materials
- Specialized Services such as Technical Rescue, Swift-Water Rescue, Marine Rescue and Firefighting, Dive Rescue, and Wildland Firefighting (as appropriate)

In addition, the current deployment strategy(s) will be identified and described with regards to the number of fire and EMS stations, response territories or demand zones, and apparatus quantity and type. Similarly, the current staffing strategies will be identified and described including the organizational structures, administrative and support staffs, emergency response staffing, and a brief summary of the Department's response history.

Stakeholder Input

A review of the expectations for service will be completed. This review will include several strategies designed to elicit internal stakeholder input. The process *FITCH* will utilize to elicit internal stakeholder input regarding service expectations will include a series of on-site structured interviews with key stakeholders. Preliminarily, the stakeholders that have been identified include:

- Elected Officials

- Fire Chief
- Leadership Team
- Random Sample of Line Personnel
- Labor's Executive Board (if appropriate)

Previously captured data elements such as population density will be synthesized with the forthcoming risk assessment to lend insight for the development of performance goals and objectives. In addition, a review of existing internal guiding documents will be completed. For example, the *FITCH* team will review mission, value, and purpose statements and any existing or desired performance goals and objectives.

Identifying Optimal Fire Station Locations and Utilization

Analyses at the station level will determine the appropriateness of the fire and EMS station locations in relation to the risk identified and the geographic limitations for travel time. Factors related to the distribution (station locations) such as geographic size, travel impedance, workload, and risk would be evaluated. Similarly, the station level analyses will also include elements of concentration such as the numbers of apparatus or personnel required at each level of distribution necessary to reliably respond to the demands for service. Elements evaluated for concentration may include the number of risks located in each demand zone or station territory and the capabilities to assemble an effective response force by program area. Station level performance and capabilities will be illustrated utilizing GIS and quantitative analyses presented in tabular form. Examples of similar analyses are presented for your review and convenience.

Marginal Utility of Optimized Resource Allocation

We utilize a proprietary marginal utility model to engage communities in their understanding of the balance between response time performance, the community's willingness to assume risk, and the costs associated with comparative service levels. In this transparent dialogue, community policy can be clearly derived that meets the best balance between community expectations for service, costs, and outcomes.

Therefore, in each community at any given response time objective (Minutes), an optimal number of fixed facility fire and EMS station locations are identified. Many communities have sited their fire station locations for a wide variety of reasons with the least of them being a specific performance objective. The concept that "faster is always better" passes the common sense test, but in most communities there is a marginal benefit or marginal return on fixed cost investments that may not be providing the desired return on investment. These analyses and continued dialogue with the community provide for a transparent and accountable method to best meet community expectations for service.

In the following example, this community had 19 volunteer fire stations and was meeting their desired performance (minutes). However, once staffed, the first six fire stations capture 90.64% of all

of the calls in the community from the current location within the desired performance level. In this case it was 10 minutes travel time. The seventh station through the 19th station only added 6% improvement in coverage. A quantitative analysis, such as typically presented in an annual report, would report the aggregate performance at 10 minutes 90% of the time, but fall short of illustrating the diminishing return on investment of the fire station's contributions above six stations at a constant fixed cost for each fire station.

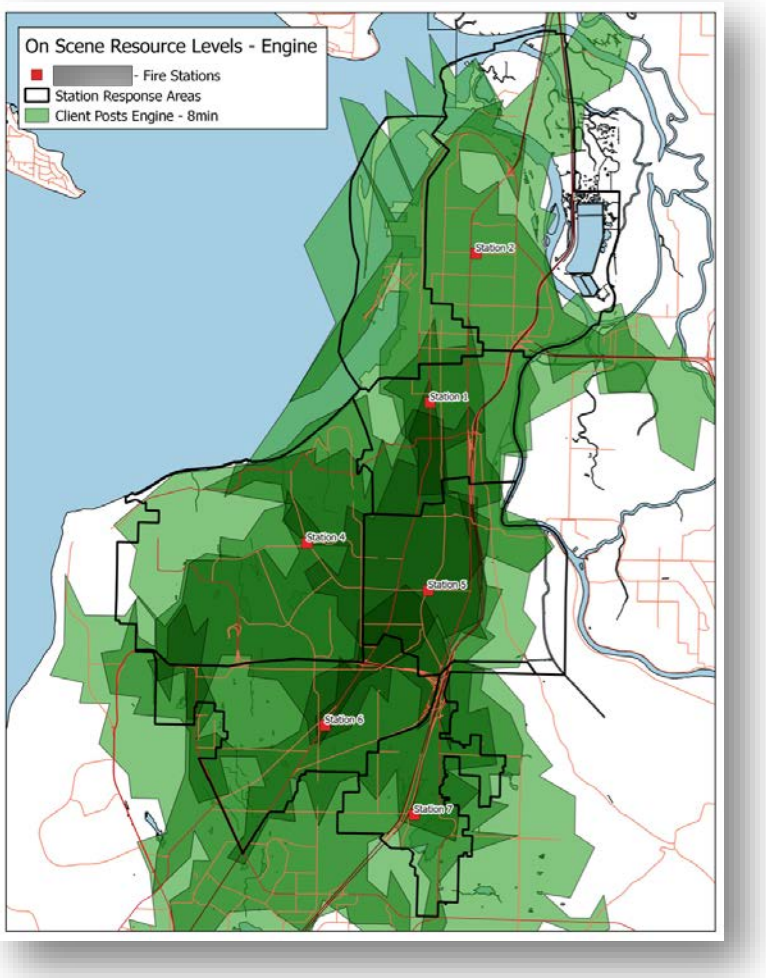
Figure 2: Marginal Utility of Existing Fire and EMS Stations - 10-Minute Travel Time

Rank	Station Number	Station Capture	Total Capture	Percent Capture
1	F9	23,431	23,431	45.92%
2	E5	7,937	31,368	61.48%
3	E1	7,856	39,224	76.88%
4	E7	4,723	43,947	86.14%
5	E4	1,308	45,255	88.70%
6	**F39**	**989**	**46,244**	**90.64%**
7	F24	734	46,978	92.08%
8	F29	418	47,396	92.90%
9	E3	393	47,789	93.67%
10	F41	359	48,148	94.37%
11	E2	262	48,410	94.88%
12	F2	222	48,632	95.32%
13	F30	217	48,849	95.74%
14	F33	149	48,998	96.03%
15	F45	126	49,124	96.28%
16	F25	107	49,231	96.49%
17	F1	10	49,241	96.51%
18	F18	5	49,246	96.52%
19	E6	3	49,249	96.53%

Our approach to optimizing the fire station locations and utilization is determined by the desired service level and capabilities from each of the facilities. Since an optimal number of facilities exist, some communities may be able to consolidate stations or redistribute resources to areas of need, some may currently have the optimal number of facilities, and some may need additional facilities to meet the desired service levels. However, this analysis is the only method to identify the diminishing return or marginal utility of resource allocation as quantitative analyses alone will not identify "overlapping" predetermined response areas. For example, in the following GIS mapping, this illustrates the degree to "overlapping" or redundancy of station coverage areas. The darker the shading the more units are able to cover the same area within the desired performance level. Please see the figure below.

Finally, an evaluation of land use plans, annexation plans, and anticipated changes in community demographics, socioeconomic status, or population will be considered in determining the most appropriate allocation of resources to best meet the unique community profile.

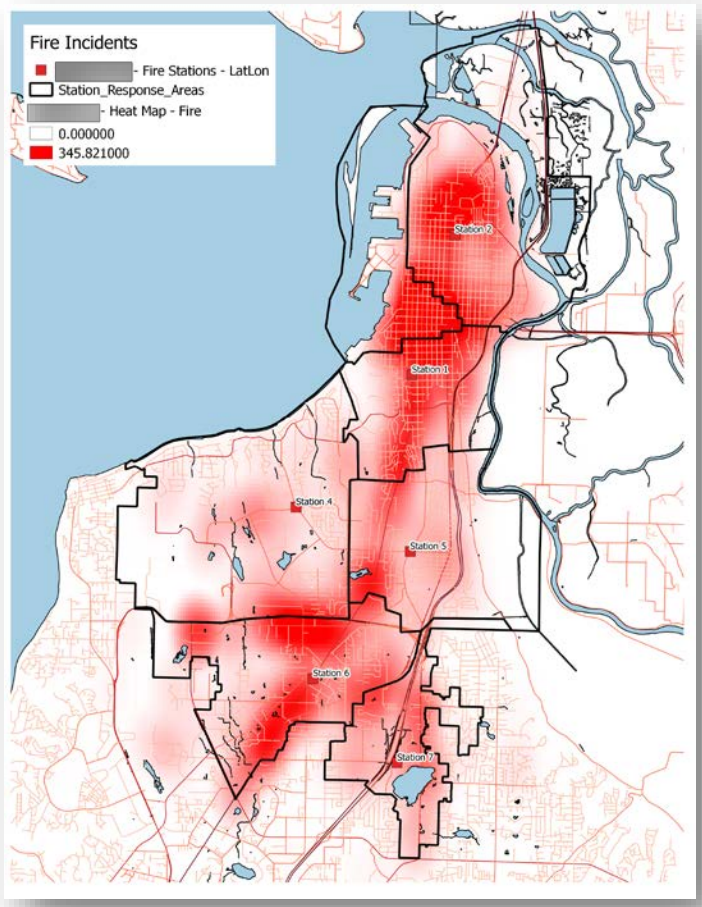
Figure 3: Illustration of Overlapping Station Response Capabilities



Analysis of 5-Years of Historical Data by Station Response Area and Call Type

The analysis for this part of the scope of work is a continuation of previous quantitative work for the station locations and response areas as well as the GIS analysis of the location of historical incidents. Therefore, in addition to the previously presented tabular data, all incidents will be geocoded in GIS to generate heat maps as presented in the figure below. Each major call type will receive a specific analysis (fire, ems, hazmat, technical rescue, etc.)

Figure 4: Example of Historical Call Location Heat Map for Fire Incidents



In summary, the following elements will be evaluated while completing the review of 5-years of historical system performance for the Department and all mutual/automatic aid responses given or received:

- Number of calls
- Call frequency
  - Time of day
  - Day of week
  - Month of year
- Call type
  - Fire
  - Ems
  - Hazmat
  - Tech Rescue
- Elements of Time
  - Dispatch time

    - Turnout time
    - Travel time
    - Total response time
- Performance
    - Unit performance
    - Station performance
    - System performance
    - Reliability / Concurrent Calls
    - Workload
    - Call duration
    - Unit Utilization
    - Workload Distribution at Unit and Station levels
- Deployment Modeling
    - Effective Response Force (ERF) performance and capabilities
    - Distribution of Resources
    - Concentration of Resources
    - Automatic and Mutual Aid Capabilities
- Effectiveness / Outcome Measures
    - Call Type
    - Program Area

Analyze Need for New Stations or Identify Opportunities for Consolidating Existing Stations and Sharing of Equipment and Facilities

All previous efforts as outlined in this scope of work will flow seamlessly to identify the need for new stations as well as identify opportunities to consolidate existing stations and/or collocate or share facilities and equipment. The major elements that will contribute to this analysis are the risk assessment, historical demand, workload, system reliability, and geographic limitations of the jurisdiction.

As an objective data-based firm, we let the data resonate with the policy makers, and then design the system that best meets the competing demands of balancing the community's tolerance for risk and their expectations for service with the desire or capability to pay for preparedness.

All results will be provided in both tabular forms as well as through GIS mapping. The following two maps are provided as examples of our objectivity for system design. In the first example, the agency has seven (7) EMS stations with a desired performance level that far exceeds current performance. In this example three years of historical data were analyzed and the optimal station locations were posited. The agency would have to increase from seven (7) stations to 10 stations in order to meet

the desired performance. In contrast, the fire services for our example agency has 17 fire stations and could cover 90% of their calls within the desired timeframe within 10 minutes with six (6) stations.

The Department will be provided the latitude and longitude coordinates of recommended locations. The GIS mapping for these two examples are provided below.

Figure 5: Example of Need for Additional Stations and Optimized Locations

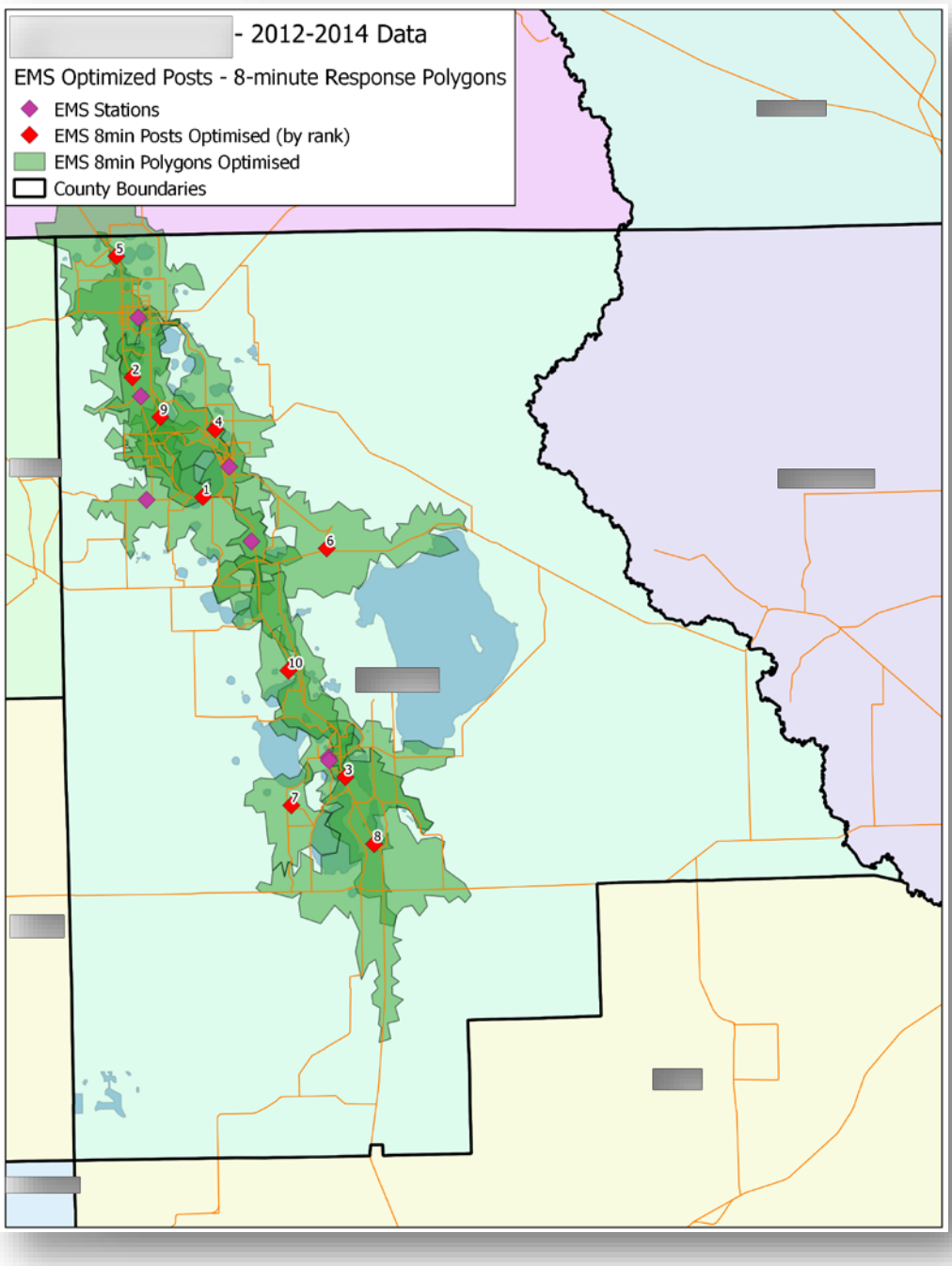
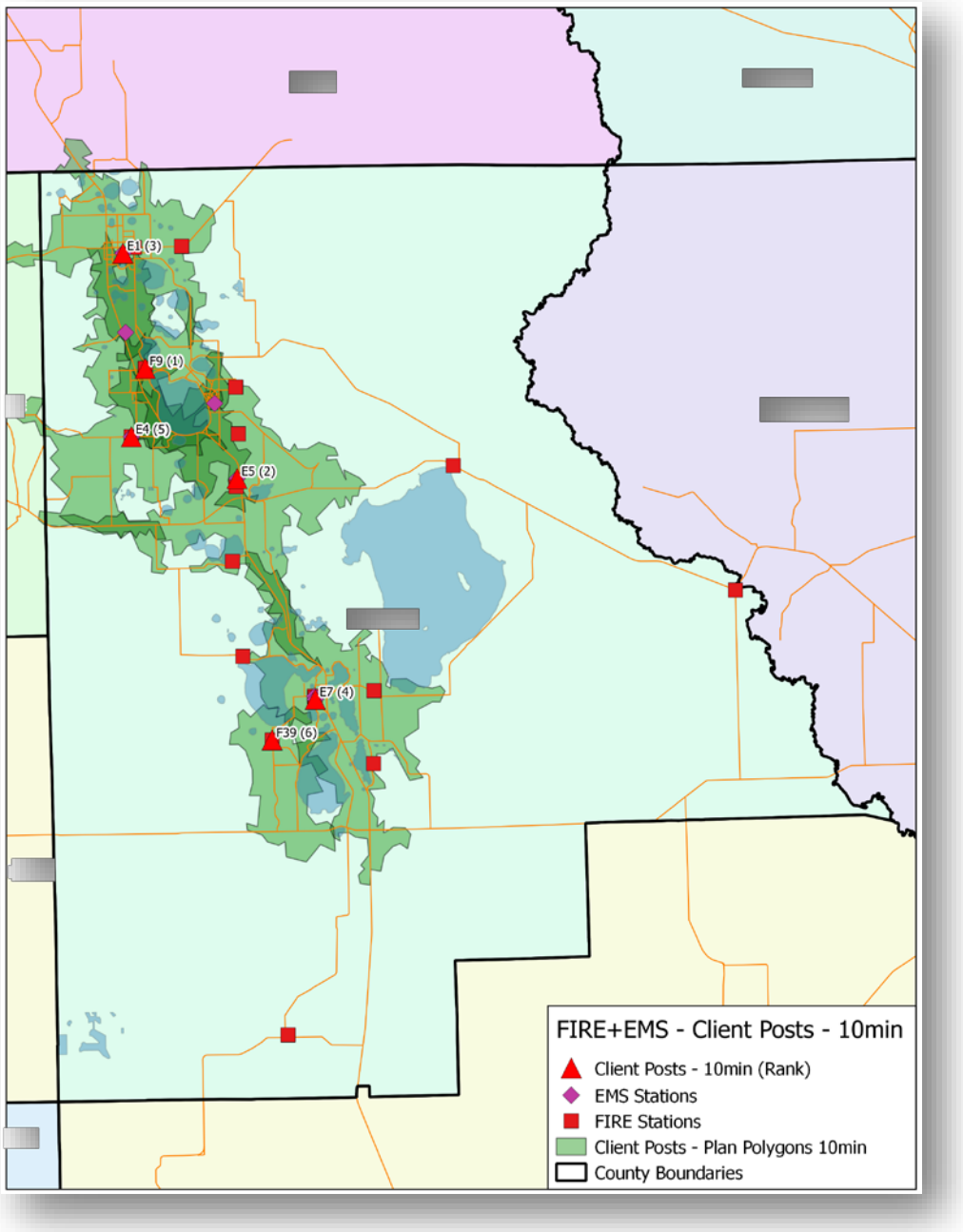


Figure 6: Example of Consolidated Stations



Analysis of Assigned Response Areas

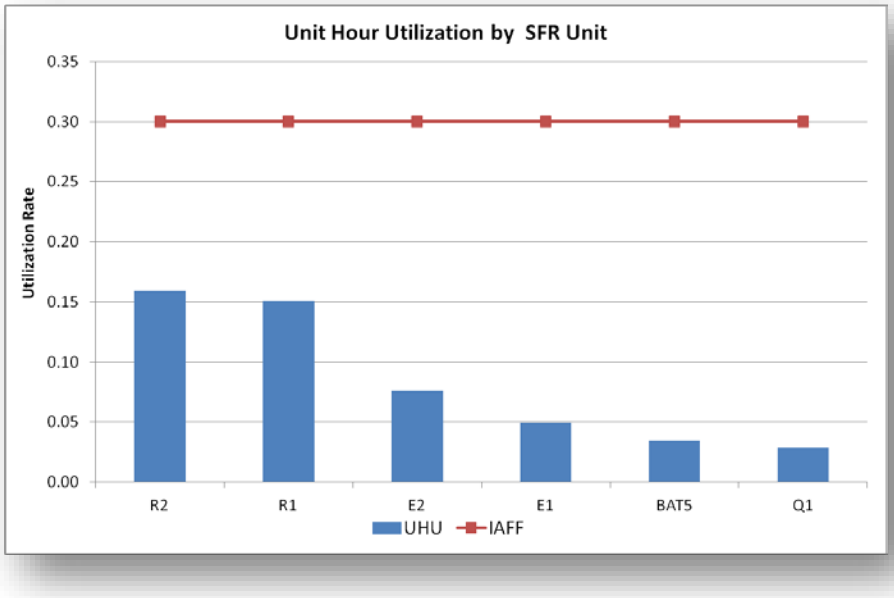
The assigned response area for each fire station will be evaluated utilizing a combination of GIS analyses previously discussed in this proposal as well as quantitative analysis from a combination of Computer Aided Dispatch (CAD) data and the Department's internal Records Management System (RMS) as utilized for reporting to the National Fire Incident Reporting System (NFIRS).

The assigned areas will be evaluated by workload, performance, system reliability, and call concurrency. Workload will be evaluated from multiple perspectives; total unit responses per station, time on task as measured by the Unit Hour Utilization (UHU) for each unit and/or station, workload distribution, and total responses by risk type. Examples of the total responses and annual busy hours and the UHU are provided below.

Figure 7: Example of Overall Workload by Station

Station	Avg. Busy Minutes per Unit Response	Annual Busy Unit Hours	Annual Total Unit Responses
1	68.9	136	118
2	35.1	943	1,613
3	35.2	2,217	3,776
4	37.8	1,658	2,630
5	35.3	2,832	4,818
6	43.9	1,817	2,482
7	31.9	2,189	4,120
8	48.7	1,722	2,120
9	31.5	2,600	4,952
10	38.8	1,545	2,387
11	36.5	2,152	3,540
12	27.1	62	137
13	43.4	899	1,243
14	29.9	1,749	3,510
Total	**36.1**	**22,519**	**37,446**

Figure 8: Example of Unit Hour Utilization Analysis



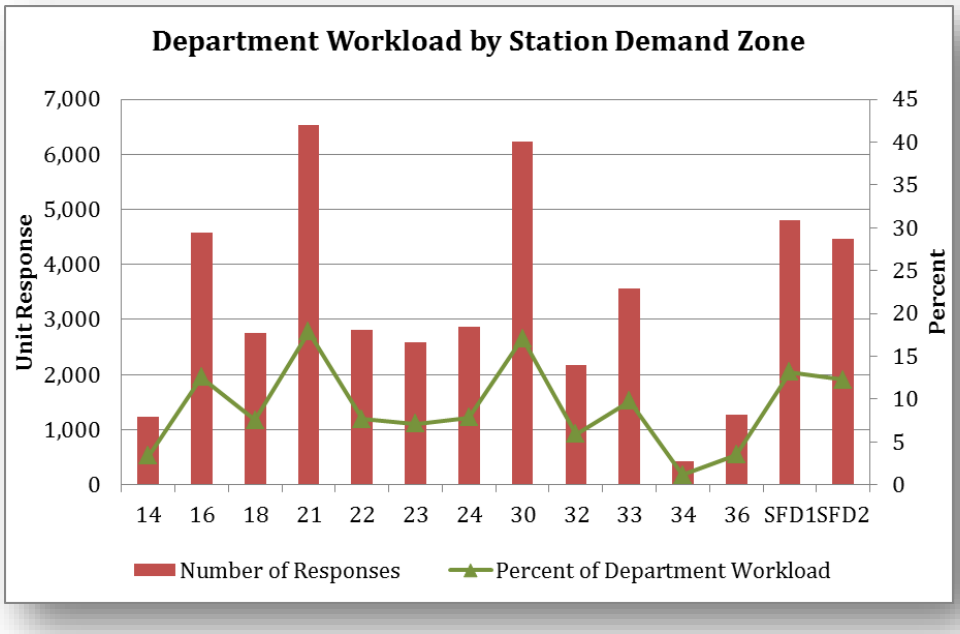
In addition, the type of historical demands for service are examined by each station response area in an effort to validate that the appropriate resources are provided to handle the unique risk profile of the fire station response area.

An example is provided below. Finally, workload is expressed in terms of the total percentage of department workload by each individual station. This is utilized to assist in determining the appropriate staffing and apparatus resource allocation per optimized station. An example is provided below.

Figure 9: Example of Number of Responses by Station Area and Call Type

First Due Station	EMS	Fire	Rescue	Hazmat	Mutual aid	Canceled	Total
14	851	283	7	14	0	70	1,225
16	3,679	625	0	27	9	237	4,577
18	2,056	455	3	50	9	177	2,750
21	4,834	1,177	7	43	10	459	6,530
22	1,898	569	0	21	9	306	2,803
23	1,952	428	0	17	33	162	2,592
24	1,840	542	0	40	262	187	2,871
30	4,893	700	0	33	79	533	6,238
32	1,519	514	0	6	28	99	2,166
33	2,951	455	0	32	22	112	3,572
34	296	86	0	14	0	22	418
36	900	294	0	11	9	60	1,274

Figure 10: Example of Department Workload by Station Area



Each station's performance is evaluated by both their response time performance within their respective fire station first due area and the reliability/concurrency of the stations ability to answer the requests for service. An example of the response performance is provided below.

Figure 11: Example of Response Time Continuum by Station and Unit

Station	Unit	Dispatch Time	Turnout Time	Travel Time	Turnout and Travel Time	Response Time	Sample Size
1	ALS3	1.9	1.8	9.0	10.2	11.5	1,488
	ALS6	2.0	2.1	9.4	10.7	12.0	1,364
2	ALS2	1.9	2.1	7.1	8.7	9.9	2,009
3	ALS4	1.9	2.0	8.1	9.3	10.5	2,421
4	ALS7	1.8	2.3	9.0	10.7	11.9	1,640
5	ALS5	1.9	2.2	11.5	12.9	14.2	2,048
6	ALS8	1.7	2.2	12.2	13.4	14.7	1,407
7	ALS1	1.7	2.0	12.1	13.5	14.6	1,530
NA	JAWS	3.0	1.8	9.8	10.8	12.6	73
Total		**1.9**	**2.1**	**9.9**	**11.3**	**12.5**	**13,980**

In addition, measures of reliability will be utilized to determine the effectiveness and validity of the current deployment strategies. Specifically, the percentage of calls that the primary station territory and/or unit was able to respond to when called will be evaluated. Another measure that may be useful is that of analyzing the frequency of concurrent or simultaneous calls. Examples of analyses for station reliability and call concurrency or overlapping calls are provided below.

Collectively, these analyses, in conjunction with the GIS analyses previously discussed, will provide a robust assessment of the current station configurations, response areas, unit resource allocation, and the appropriate staffing for each fire station based on objective data specific to the community.

The *FITCH* team will work with the City and Department to determine any specific locations to measure independently of the aggregate system design. For example, our system design may suggest that 90% of all requests for service could be served with four (4) minutes and 98% could be service with (6) minutes. We can specifically identify locations that are known or expected to remain as an outlier to overall system performance.

Verification of Data and Development of Reporting Tools

FITCH'S process includes multiple validation and verification checks. For example, when available, the fire department's reporting information in their respective Records Management Systems (RMS) will be merged with the raw CAD data from the 911 Center. In this manner, we are able to measure the degree of agreement between local agency records and the 911 Center. Any variability is explored, shared, and discussed with the system stakeholders. If the data cannot be reconciled, we will meet with the client and agree upon which data set has the greatest value. Finally, recommendations for improvement in data collection or record keeping will be offered, if appropriate.

In all cases, draft data will be shared with the system experts for validation and verification at each critical milestone in the study. All geospatial and quantitative analyses will be balanced with information gleaned from onsite work, direct observations, document reviews, and structured interviews.

Finally, recommendations for reporting tools, methods for capturing targeted data, and intuitive data elements for successful and timely management of system performance and outcomes will be offered.

Figure 12: Example of Station Reliability Analysis

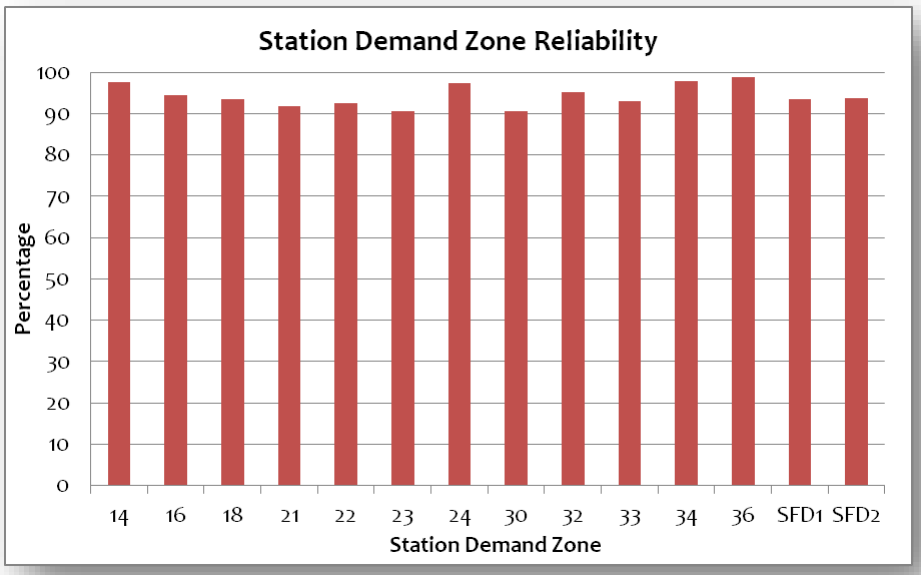
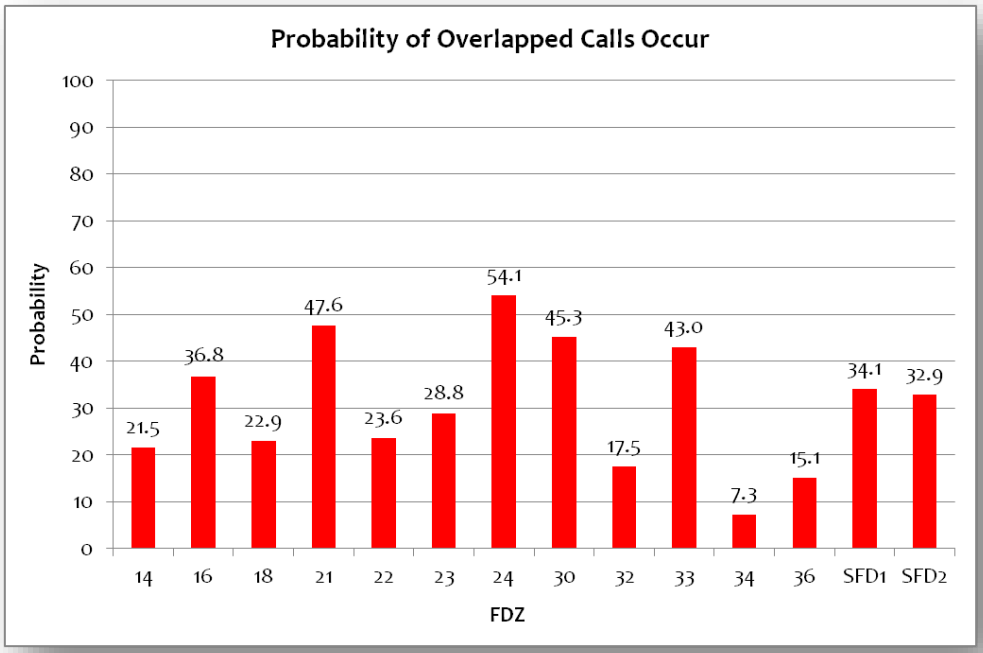


Figure 13: Example of Probability of Overlapping or Simultaneous Calls by Station Area



Fire and EMS Staffing and Response

A comprehensive staffing analysis will be completed during this phase of the project with respect to the present staffing and deployment. Recommendations for optimal staffing levels or strategies will naturally flow from a review of the unique community characteristics, response configurations, expectations for service, and historical demands for service.

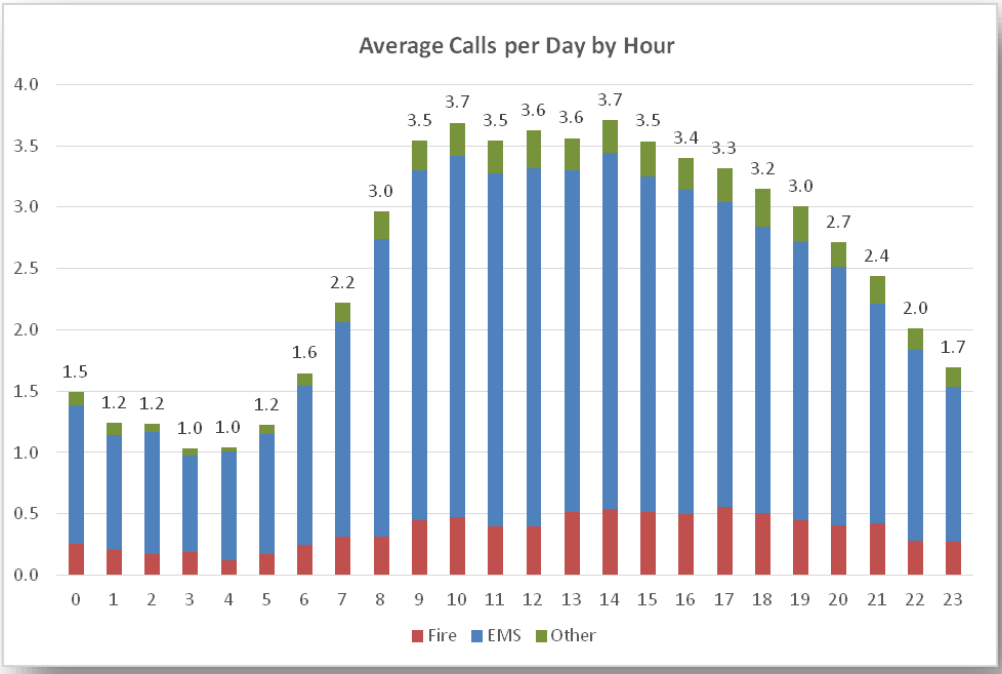
Each community's realities are different and Peoria is no exception. Fitch understands that EMS in the city of Peoria is a blend of fire first response and AMT transport and treatment capabilities. Fitch will look at the dispatch analysis and recommend response times for fire and EMS that are commensurate with the level of risk. Each agency will have its own risk response matrix but each matrix will consider the strength of the system as a whole and minimize the unnecessary duplication of service. Within the development of the optimized staffing configuration for the fire service, *FITCH* will evaluate the present shift coverage and scheduling strategies. Temporal analyses will be completed in an effort to explore options for optimally aligning schedules with demands for service. An evaluation of variables that impact staffing needs such as workweeks, minimum staffing policies, back-fill or contingency policies, vacation accrual and use guidelines, recruitment and retention and unique community risk and service demands will be completed. Opportunities for improved operational and economic efficiency will be identified and recommendations to mitigate deficiencies will be provided.

The following is an example of the results from temporal analyses that demonstrate at what time of day the workload is the highest and thus requiring sufficient resources to meet the demand. It also

illustrates that in many communities' alternative deployment strategies or configurations may be considered during the non-peak periods once the baseline service levels have been met.

In addition, this analysis takes into consideration the type of community service demands that the agency responds to. In this example, the demand for fire suppression related services is relatively low as compared to the community's demand for emergency medical services. Again, these analyses may demonstrate opportunities for considering alternative deployment strategies to best align resource allocation to historical demand and community risk. Please refer to the figure below.

Figure 14: Example of Average Calls per Day by Hour of Day



Analysis of Fire and EMS Apparatus And Resource Configuration To Meet Both Current And Future Needs

Analyses completed during the earlier phases of this scope of work will be utilized to inform the *FITCH* team as to the optimal quantity of resources, staffing, and resource configurations to meet both current and future demands for services. As proposed this will be accomplished in conjunction with the optimization of the station locations, staffing, and overall risk-based deployment model.

In addition, to direct observation and inspection of vehicles and equipment, *FITCH* will review maintenance practices, replacement schedules, funding strategies and policies, and utilization within the response configurations with respect to unique community service demands and risk profile.

Compare and Contrast with National and Regional Models

Current and/or desired service levels will be compared with recommendations from the National Fire Protection Association (NFPA), the Commission on Fire Accreditation International (CFAI), and the Insurance Services Organization (ISO).

Establishing Service Levels to be Offered

A key component to exploring options or alternatives is to establish the desired service levels. This part of the process will incorporate several elements to establish expectations for service as well as a brief review of the available evidenced-based research related to response times and level of care (ALS versus BLS).

Several alternatives will be provided and articulated in such a manner that policy can be transparently adopted with the specific costs associated with the associated desired performance. For example, the financial impact will be provided comparing incremental adjustments to performance for both quicker responses as well as a more measured response. The impact to costs is significant and grows exponentially with the size of the system.

In addition, this type of analysis will be provided at the apparatus level. We will demonstrate the total cost for each apparatus and the corresponding marginal utility or contribution each apparatus provides to the success of the overall system.

Project Management and Interaction with City and Department

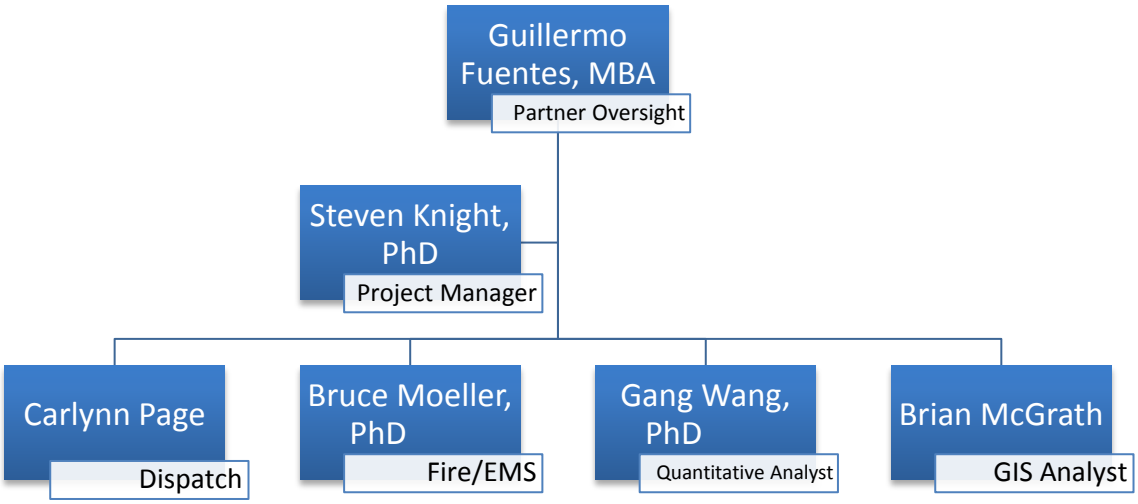
Our project management is a disciplined and structured process. Key activities are clearly outlined and logically organized to produce specific deliverables within the defined period of time. We will review our progress against the work plan on a regular basis to ensure that we are progressing according to plan. Any deviations will be flagged immediately and appropriate action taken, through discussion with the city project lead, to address issues.

As designed, this project will be transparent and highly collaborative. It is essential to the *FITCH* team that the key stakeholders have sufficient opportunity for input and guidance throughout the project. This proposal is assuming a kick-off meeting with the City and Department leadership. As proposed, the *FITCH* team will conduct a minimum of three onsite visits including a formal presentation of the findings. At a minimum, the *FITCH* team will meet with elected officials, fire rescue administration, and identified key stakeholders.

Dr. Steven Knight will be the project manager and the first line of communication between the client and *FITCH.* In addition, Guillermo Fuentes will be the managing partner and will have direct oversight of the project. Further information about the proposed *FITCH* team is provided in the section titled "Proposer Capabilities & Qualifications".

The *FITCH* team will be divided into the following project categories with each category having a specific lead based on areas of expertise:

***Figure 15: FITCH* Team Project Organizational Chart**



Identified Department Resources

As a data-driven analysis, the following sources of information have been pre-identified.

- Department RMS Data
  - Department Incident Reporting RMS
  - Department Patient Care Reports (if separate)
  - Department Inspection/Permitting Records
  - Department Pre-fire Planning Records
- Public Safety Answering Point (PSAP)
  - Five Years of Raw CAD Data
- Economic Development / Planning
  - Identified Planning Areas
  - Projected Growth
  - Anticipated Annexations
  - Zoning
- Facilities and Apparatus
  - Access and Observation
  - RMS or Database with maintenance records
  - Replacement Schedules
- Fiscal Services
  - Agency Budgets
  - Capital Improvement Plans
  - Revenue and Taxing Information
  - Grants - Current or Anticipated

- Agency/Department GIS
    - Station Territories (Shape files)
    - Agency Boundaries
    - Major Transportation
    - Critical Infrastructures
    - Growth Boundaries
    - Water Distribution
- Agency/Department Human Resources
    - Payroll
    - Staffing
    - Scheduling
- Miscellaneous Documents
    - Automatic/Mutual Aid Agreements
    - Contractual Documents for External Services
    - Department Policies and Procedures

Finally, as proposed this project will require three on-site visits with the Department and staff. During these visits, access to staff for structured interviews and facilities for direct observation will be necessary as well as continued dialogue for clarification of information.

Development of Alternatives and Potential Conflicts

Alternatives for deployment, organization, and fiscal strategies may be developed. These alternatives will be fully developed, with associated costs, and an assessment of the cost and benefits of the alternatives. The process for articulating potential alternatives will allow policy to be adopted in a comprehensive and transparent manner that will foster a high degree of accountability and long-term sustainability within the context of the unique and specific environment.

In addition, potential exists that alternative conclusions may be derived from previous consulting work for station locations, standards of cover, etc. In all cases, areas where the *FITCH* team cannot validate previous findings or the conclusions are not aligned, differences will be brought forward confidentially and discussed with the Client on how best to proceed prior to any opportunity for public consumption.

Service Enhancements

FITCH's station location and optimization program is a propriety GIS and Analytic process that provides considerable value to our client's in supporting policy decision processes. It is an elegant method of articulating in a very understandable and transparent manner the relationships between risk, service delivery, and costs.

FITCH has extensive experience in managing, building and implementing, and evaluating emergency communication centers which will be the backbone of this study. We will provide a value added service by sharing observations on process, infrastructure, and performance during the completion of this project.

Implementation Plan

The process identified in the previous sections will yield the desired results for this project. The proposed scope of work demonstrates that the consultant understands the desired outcomes and has proposed objectives and tasks to achieve that outcome. A table for each of the proposed objectives and time frames is included to describe the project more clearly.

Figure 16: Proposed Timeline

	Month 1	Month 2	Month 3	Month 4	Month 5
Kick-Off Meeting, Refine Work Plan and Scope, and Meet with Stakeholders					
Overview of Community Served					
Overview of the Departments, Organizational Structure, and Currently Provided Services					
Stakeholder Input					
Optimizing Fire and EMS Station and response Locations and Utilization					
Analysis of Assigned Response Areas					
Analysis of 5-Year Historical Data by Station Response Area and Call Type/Severity					
Conduct Risk Analysis of Each Station by Incident Type and/or Severity					
Analyze Need for New Stations or Identify Opportunities for Consolidation of Stations					
Analysis of Fire and EMS Station Staffing					
Analysis of Fire and EMS Apparatus, Equipment, and Resource Configurations – Current and Future Needs					
Analysis of Fire and EMS Dispatching Services					
Maximizing Efficiencies, Reducing Duplication of Services, and Identifying Opportunities for Improvement					
Development of Draft Report and Potential Implementation Schedules					

	Month 1	Month 2	Month 3	Month 4	Month 5
Final Presentation to City and Department					
Proposed Onsite Visits	#1	#2		#3	#4

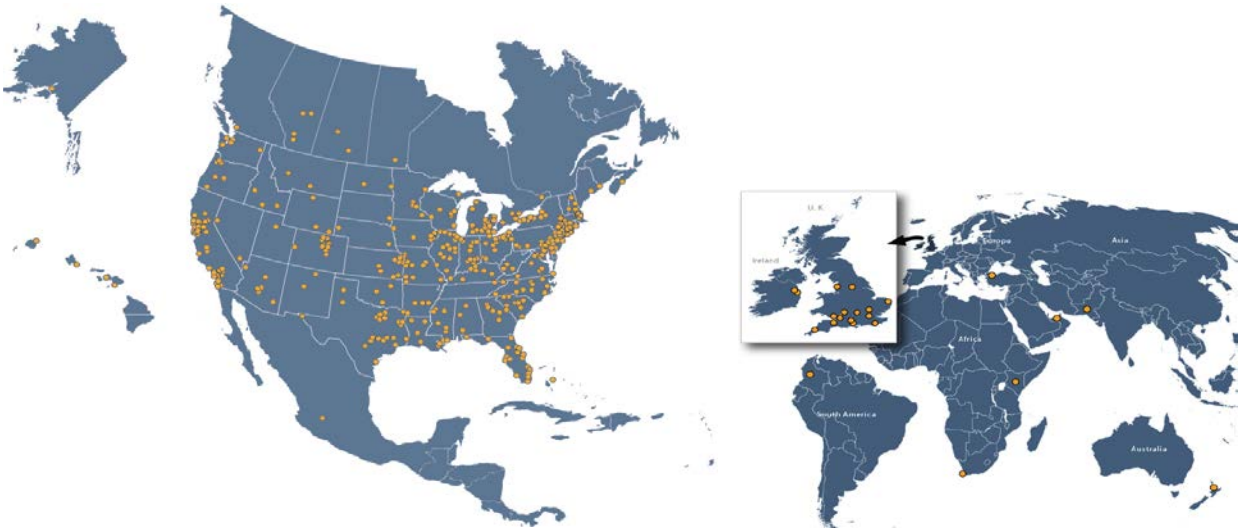
PROPOSER CAPABILITIES AND QUALIFICATIONS

Fitch & Associates, LLC is a Limited Liability Company. *FITCH* was established as a corporation in 1984 and converted to a Limited Liability Company in 1996. The Firm is located in Platte City, Missouri, a suburb of Kansas City. Our physical mailing address and my contact information is:

Guillermo Fuentes MBA
Fitch & Associates, LLC
2901 Williamsburg Terrace
Suite G, Box 170
Platte City, Missouri 64079
Telephone: (816) 431-2600
Facsimile: (816) 431-2653
jfitch@emprize.net

This location is both the servicing office and the only office location for Fitch & Associates, LLC.

Throughout its 30-year history, *FITCH* has earned credibility by implementing innovative customized solutions in both the public safety and healthcare arenas. The Firm has consulted with nearly 1,000 communities in all 50 U.S. states and in 12 countries.



Projects have ranged from objective reviews, analysis and system design issues, communications system design, productivity, and enhancement studies to detailed operational, financial, and transition management services including standards of covers and consolidation studies.

The Firm specializes in Public Safety consulting. Founded by Joseph J. Fitch, PhD in 1984, partners Richard A. Keller (retired) and Christine M. Zalar joined the Firm in 1985. The principals have managed and developed some of the most innovative emergency service systems in the World. Two additional partners were named in 2013 from among the firm's key staff members.

In addition to its partners, *FITCH* has full-time Senior Associates, research, and support staff members. *FITCH* regularly utilizes more than half a dozen independent consultants that are content and technical experts.

These combined resources provide expertise on matters as diverse as organizational psychology, accounting, economics, healthcare administration, public information and education, marketing research, emergency medicine, fire service administration, law enforcement, safety management and "Just Culture" concepts.

Project Team Members

Guillermo Fuentes – Senior Partner. Guillermo Fuentes MBA has 25 years of emergency services experience that spans multiple public safety services and jurisdictions. He has held executive positions for more than a decade being named Deputy Chief of Montreal (Canada) EMS in 1999, Montreal EMS is the 5th largest municipal ambulance service in North America answering over 300,000 calls for service, while in Montreal he was responsible for overseeing 1100 field employees. One of his core duties was to manage a 118-person communication center. He subsequently served as Deputy Chief of EMS for Niagara EMS and was responsible for building and staffing a new communications center. He led both center through their NAED accreditation process.

Mr. Fuentes subsequently served as the Chief Administrative Officer for the Niagara Regional Police Service. In this role he was responsible for Information Technology, Human Resources, Records, Communication Center, Fleet and other administrative duties including the finance function. As CAO he also served as the CFO overseeing a 150 million dollar operating budget.

Mr. Fuentes has worked with Fitch & Associates on a part time basis for eight years and joined the firm full time in 2011. He routinely is involved in complex projects. His ability to move between field operations, dispatch centers and administrative functions - applying statistical analysis to real life situations makes his contribution to projects both complete and practical. He holds a Masters Certificate in Management from Tulane University and a Master's in Business Administration from Aspen University.

Chief Steven Knight (Ret.), PhD, Partner – Project Lead - Fire. Dr. Knight has nearly 25 years of experience and recently retired as the Assistant Fire/EMS Chief for the City of St. Petersburg, Florida. He is a subject matter expert for both the National Fire Academy and the Center for Public Safety Excellence (CPSE). He has also served as a team leader and peer assessor for the Commission on Fire Accreditation International (CFAI) and has held multiple faculty appointments in Fire Science and EMS. Dr. Knight previously served the International City and County Management Association (ICMA), as the Senior Manager for Fire and EMS.

Dr. Knight holds a PhD from the University of South Florida in curriculum and instruction and a minor in research and measurement, a master's degree in public administration from Troy University and a bachelor's in Fire & Safety Engineering from the University of Cincinnati. Chief Knight is also a graduate of and faculty for the Executive Fire Officer Program (EFO) through the U.S. Fire Administration, Federal Emergency Management Agency. Knight is an accredited Chief Fire Officer (CFO) through the Center for Professional Credentialing. Knight also served as an adjunct professor at St. Petersburg College and the State College of Florida in their Fire Science and Public Safety Administration Programs, is the former program director for Emergency Medical Services at the Manatee Technical Institute, and is an affiliate faculty with the University of Central Florida's College of Medicine.

Bruce J. Moeller, PhD – Senior Consultant - Fire. Dr. Moeller joined the firm last year. He most recently served as Executive Director for Safety & Emergency Services in Pinellas County, Florida and as Interim Chief of Staff for the County. Pinellas County is a community of almost 1 million residents; his areas of responsibility include 9-1-1, EMS &Fire Administration, Justice & Consumer Services, Radio & Technology, Emergency Management and Animal Services. Prior to his current role, Dr. Moeller served as city manager in Sunrise, Florida. Moeller's background includes 30+ years of public safety service, culminating as Chief of Department for several fire-rescue agencies, including Broward County, Florida.

Dr. Moeller is active in fire service and public management organizations, having served in committee and leadership roles for the International City County Management Association (ICMA), National Fire Protection Association (NFPA), and International Association of Fire Chiefs (IAFC). He is also an active member of the International Chiefs of Police (IACP).

Gang Wang, PhD – Senior Consultant-Data Analyst. Dr. Wang has completed more than sixty emergency service operational analyses using data-driven analytical techniques to determine the most efficient organizational and operational structures. Gang has a PhD in Industrial Engineering from Wayne State University and a Master's degree in Management Information Systems from Chongqing University. Previously, Dr. Wang worked for the Center for Public Safety Management and the International City/County Management Association.

Carlynn Page – Senior Consultant- Dispatch review. Prior to joining Fitch & Associates, Ms. Page served 17 years as the Associate Director of the International Academies of Emergency Dispatch. In that capacity she was responsible for developing and managing the Academies' Accreditation program. She has been deeply involved in legislative activities and government affairs on behalf of the Academies and was responsible for oversight of the Communications Center Manager program jointly conducted by Fitch & Associates and the Academies.

Ms. Page holds a Bachelor of Science degree from the University of Utah and is a certified facilitator with the Arbinger Institute and facilitates training for the Center for Missing and Exploited Children,

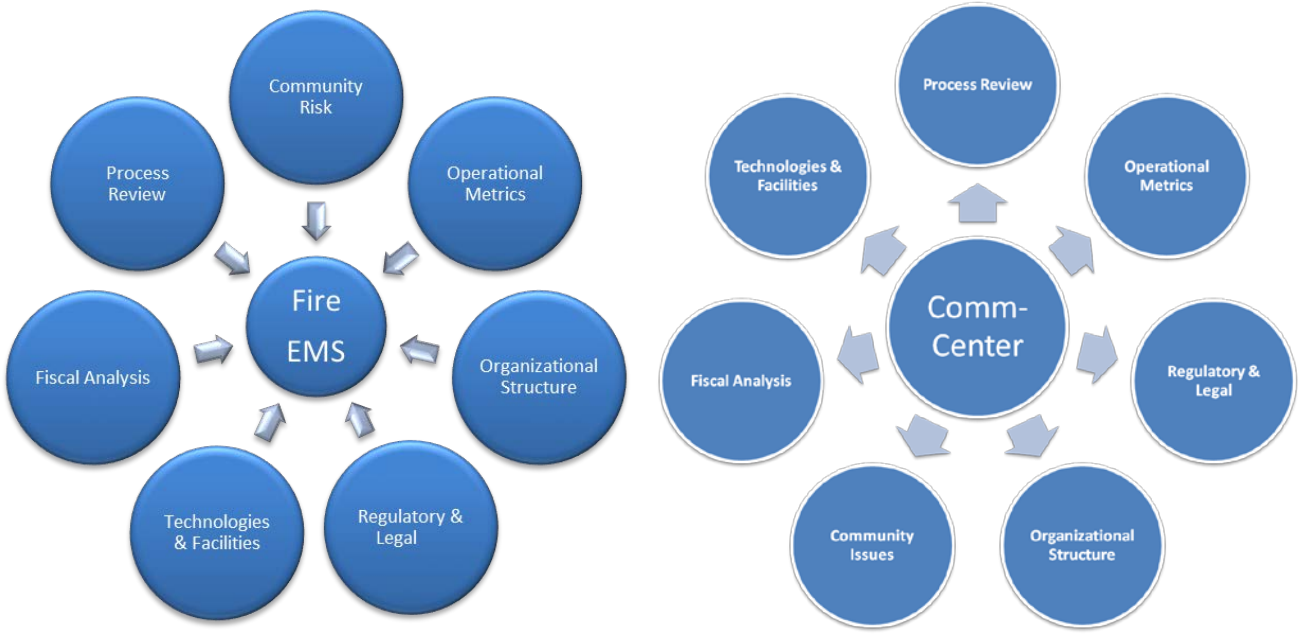
and served multiple terms as the Utah Chapter President of the National Emergency Number Association.

Brian McGrath – Senior Consultant – GIS and Mapping Analyst. Brian McGrath serves as President of CAD North Inc. His responsibilities include Administration, Marketing, Software Development and Business Analysis/Requirements Documentation. He brings over 18 years of experience in Information Systems management and development in the public safety industry including 10+ years Business and Systems Analysis in public safety software development. He has exceptional ability at requirements capture, analysis and documentation and is fully conversant with all aspects of the software product development and implementation life-cycle. He is an experienced software developer of public safety dispatch applications including software development using TriTech's RAPTOR API. He possesses excellent communications and interpersonal skills, is comfortable at all organizational levels and has a solid base of operational experience in public safety communications.

Fitch & Associates' Methodology

Recognizing that each community is unique - our analysis of Communication Centers and the fire service functions, operations, and finances must be completed with due regard for local characteristics.

Figure 17: Review Components



This local awareness is balanced with a comprehensive review methodology that incorporates recognized objective benchmarks and international best practices. That information is turned into actionable recommendations incorporating both pros and cons of service delivery changes.

Fitch & Associates (*FITCH*) has over 30 years consulting experience and is internationally recognized as a leader in emergency services development. The project team's leadership has both Dispatch center know how and Fire/EMS service expertise coupled with Illinois specific experience.

In order to appropriately tackle each of these complex issues in a meaningful, yet cost effective manner, *FITCH* has put together a multidisciplinary team that combines a senior officer for each service line with a partner to review each one of the areas required. *FITCH* has assigned a partner on the project that will have overarching responsibility to meet the expectations of the City.

Project Team Organization & Qualifications

FITCH's specific strengths for this project are centered in the ability to objectively conduct research, manage multiple project priorities and blend both expert and local resources while building support for the outcome. Our key strengths include talented and experienced consultants, time-tested methods, quality teamwork, timeliness, and the ability to provide tangible results.

Talent – Each project is managed by a *FITCH* partner who is responsible for bringing together the specific resources necessary to meet the client's needs. Staffing for this project involves six team members. Team members have been selected for their specific areas of expertise that match the requirements of this project.

Time-Tested Methodologies – *FITCH's* experience and that of the individual consultants involved represents an unparalleled base for the tasks at hand. We have worked with more than 1,000 clients including local, state and federal government agencies; municipal and volunteer fire departments; ambulance services and hospitals.

Teamwork – Throughout its history, *FITCH* has stayed true to its core values by accomplishing projects using a collaborative approach. This approach offers high levels of involvement for system participants without compromising the independent or objective nature of the project.

Timeliness – *FITCH* is known for producing its work on or before the scheduled completion date and within budget. Timeliness also involves consultant access and response times. Both are as important in consulting, as they are in emergency services.

Tangibles – Tangible results in consulting mean developing solutions addressing the client's needs and providing recommendations that are implemented. *FITCH* is well known for developing innovative solutions to complex issues. Our recommendations and tangible work products have been implemented with greater frequency than those of any other national public-safety consulting firm.

Members of the *FITCH* project team are highly qualified academically with some serving as faculty members at leading educational institutions. Most importantly, *FITCH* has real-world experience

managing emergency services across the nation and a track record of content-specific consulting. Each of the firm's partners and the project director proposed for this project have extensive emergency services management experience. The commitment of top-level resources underscores the importance *FITCH* places on this project team.

FITCH has routinely undertaken projects over the last three decades similar in scope to that proposed by the City. *FITCH* has reviewed systems and processes for nations, states, provinces, regions, and individual departments. Most of our recommendations are implemented due to our real-world approach, matching both the desired outcome with the clear realities in each system.

FITCH proposes an expert group of consultants that are selected specifically for their expertise within this scope of work. All of the consultants work exclusively for Fitch & Associates and no subcontractors are utilized. All of our consultants have direct experience leading municipal fire and EMS agencies.

A project with this level of complexity requires a focused approach by each member of its team. The partner responsible for this project will be Guillermo Fuentes. Guillermo will ensure the coordination of teams and provide overall leadership resulting in a comprehensive study, completed on time and within budget.

The *FITCH* team will be divided into the following project categories with each category having a specific lead based on areas of expertise:

Best Practices Utilized by Fitch & Associates

FITCH remains on the cutting edge of best practices in the fire and emergency medical services. Our consultants are intimately involved with many state and national associations and are frequent presenters at international conferences:

- Fire Rescue International by the International Association of Fire Chiefs (IAFC)
- Firehouse World
- Excellence Conference by the Center for Public Safety Excellence and the Commission on Fire Accreditation International (CPSE/CFAI)
- Volunteer Chiefs Association (VCOS)
- Canadian EMS Chiefs Conference
- International City/County Management Association (ICMA)
- Navigator - International Academies of Emergency Dispatch (IAED)
- EMS World Latin America

Additionally, your proposed team has presented at the following state associations in the last five years:

- Florida Fire Chiefs Association
- Louisiana Fire Chiefs Association

- Texas Fire Chiefs Education Conference
- Illinois Fire Chiefs Association
- Washington Fire Chiefs Association
- Nevada Fire Chiefs Association (Nevada Fire Show)
- Connecticut Fire Chiefs Association
- Georgia EMS Conference

Finally, *FITCH* hosts their own conference on Fire/EMS best practices titled Pinnacle Leadership. All of these efforts assist *FITCH* in maintaining our best practices approach to consulting and advising. For example, a proprietary process is utilized to develop a temporal and demand based geographic marginal utility model that is leading edge in designing fire and EMS systems in a manner that best articulates and describes both return on investment of resource allocation and the assumption of risk by the community.

COSTS OF SERVICE

As proposed, the typical total project would require 182 consultant hours.
We recognize that currently the city is engaged in a standards of cover analysis. Since some of this work can be reused we have reduced the hours of work by 22 hours or $6,000 dollars.
A total of $7,000 has been budgeted for travel and other expenses (this will be charged at cost).

Figure 18: Proposed Fees and Expenses

Project Activity	Costs
Professional Service Fees	$49,995- 6000= $43,995
Travel and Other Expenses (charged at cost)	$7,000
All Inclusive Project Total	**$50,995**

Payable milestones

10 % first sight visit
25 % draft dispatch report
25% draft data report
25% draft report (executive summary)
10% presentation of final

The report will be in power point format with three attachments: executive summary, data report and dispatch report.

There are no ongoing or recurring costs, software costs, or software maintenance costs. All costs for insurance, documentation reproduction, communication, travel, and per diem costs are wholly accounted for within the fixed costs pricing.

ATTACHMENT A

Resumes

Guillermo Fuentes **2901Williamsburg Terr., Ste G**
Partner, Fitch & Associates, LLC **Platte City, Missouri 64079**

SUMMARY Mr. Fuentes has broad experience in the areas of communications, operations, deployment and administration. He is a leading expert on the analysis, design, and management of EMS system status. Known internationally for his consultant work, he provides statistical and operational analysis, computer modeling, and the development of deployment plans for the Firm's clients.

CAREER

January 2013 - Present ***Partner***
Fitch & Associates, LLC **Platte City, Mo.**

September 2011 – January 2013 ***Senior Consultant***
Fitch & Associates, LLS **Platte City, Mo.**

- Responsible for complex math modeling, system reviews and dispatch builds and reviews
- Assist clients in EMS, Fire and Police with complex operational issues

November 2007 - August 2011 ***Chief Administrative Officer***
Niagara Regional Police Service **St. Catharine, Canada**

- Responsible for Human Resources, (350 civilian employees) Finance, ($125 million operating budget and $84 million capital budget) Information Management, Central Records, Information Technologies, Fleet, Facilities, Quartermasters, and Labor Relations

February- March 2007 ***Interim Director of Niagara Emergency Service Division***
Niagara EMS **Niagara Falls, Canada**

- Responsible for EMS, Fire coordinator, CBRN (Chemical, Biological, Radiological, Nuclear), and Emergency Management

December 2004 - February 2007 ***Associate Director Emergency Medical Services***
Niagara EMS **Niagara Falls, Canada**

- Created a new dispatch centre as a model for the province
- Integrated all the technology and implemented technology that is unique in the world
- Instituted a system of total management at front line supervisor level

August 2004 - December 2004 ***Interim Director Pre-hospital Services***
Urgences- Sante **Montreal, Quebec**

- Responsible for a staff of 1,200 as well as the goal and vision for the 2005 year

2001 -2004 **Deputy Director of Operations Pre-hospital services**
Urgences- Sante **Montreal, Quebec**

- Responsible for field operations, Communication centre, Scheduling department ($63 million budget)
- Implemented specialized field operations including Tactical intervention medics , bike medics and marine medic programs
- Developed a CBRN protocol, CBRN intervention level 2 teams
- Deployed analysis for first response and advanced care tiered response.

May 2002 – September 2002 ***Interim Director of Pre-hospital services***
Urgences –Sante **Montreal, Quebec**

- Executed mid year evaluation of 2002 performance
- Presented performance progress report to the Minister of Health and Social Services

1999-2001 ***Manager of Inter facilities***
Urgences-Sante **Montreal, Quebec**

- Responsible for inter facility transports
- Development and implementation of individual profiling tools

1990-1999 ***Part Time EMT***
Urgences-Sante **Montreal, Quebec**

EDUCATION

Aspen University; Denver, Colo. 2010
Masters in Business Administration - Summa Cum Laude
Inducted as a life member to the Delta Epsilon Tau Society

Tulane University, Freeman Business School; New Orleans, La.
Masters Certificate in Business Administration 2007
Advance management Strategy certificate 2006
Certificate in Business essentials II 2006
Certificate in Business essentials I 2006

Continuing education; Montreal, Canada 2002
Effective Leadership Training
Group Management seminar
Effective communication skills

Ahunsic College; Montreal, Canada 1996
Prehospital Trauma Life Support (Basic and Advanced)
Emergency crisis management

Concordia University; Montreal, Canada 1990 - 1994
Bachelor of Science, Management of information systems (incomplete)
Minor in Political Science (incomplete)

Ahunsic College; Montreal, Canada 1989-1990
Ambulance Technicien

Dawson College; Montreal, Canada 1987-1989
DEC social science

PROFESSIONAL MEMBERSHIPS

APCO (Association of Public-Safety Communications Officials) International
APCO Canada
APPQ Association Proffessionelle des Paramedics du Quebec

Steven G. Knight, PhD. **2901Williamsburg Terr, Ste G**
Senior Associate, Fitch & Associates **Platte City, Missouri 64079**

SUMMARY Dr. Knight has nearly 25 years of experience and recently retired as the Assistant Fire/EMS Chief for the City of St. Petersburg, Florida. He is a subject matter expert for both the National Fire Academy and the Center for Public Safety Excellence. He has also served as a team leader and assessor for the Commission on Fire Accreditation International and has held multiple faculty appointments in Fire Science and EMS. Dr. Knight previously served the International City and County Management Association (ICMA), as the Senior Manager for Fire and EMS.

CAREER

Present ***Senior Associate***
Fitch & Associates, LLC **Platte City, Mo.**

- Provides consulting and turnkey management services to a wide variety of public safety, healthcare, government, and business organizations.
- Designs and implements programs enhancing effectiveness; improving productivity; and maximizing potential for organizations and individuals.

1996-2013 ***Assistant Fire Chief***
St. Petersburg Fire & Rescue **Florida**

- Managed metro-sized emergency service agency including fire suppression, fire prevention, public education, community risk reduction, emergency medical services, training, hazardous materials, technical rescue, urban search and rescue, marine rescue, emergency management, and response to natural and man-made disasters.
- Managed over 300 employees during a continuous 24/7 deployment with a $45 million dollar budget.

1992-1996 **Firefighter/Paramedic**
South Pasadena Fire Department **Florida**

- Responded to requests for emergency service for fire suppression, emergency medical services, and fire prevention activities.

2008 ***Subject Matter Expert***
National Fire Academy

- Planning and Information Management Program

2010-Present **Technical Advisor**
Center for Public Safety Excellence

- Provide consulting services for the accreditation process and assist in the development of agency specific community-based strategic planning while representing the Center for Public Safety Excellence.

2005-Present **Team Leader/Peer Assessor**
Commission on Fire Accreditation International

- Lead accreditation teams on site-visits for candidate agencies and present findings to the Commission. Participated with the following agencies:
    - Aurora, Colorado
    - Salem, Oregon
    - Charlotte, North Carolina
    - Plano, Texas
    - Montgomery County, Maryland
    - Newport News, Virginia
    - Anchorage, Alaska
    - Cobb County, Georgia
    - Las Vegas, Nevada
    - Henderson, Nevada
    - Honolulu, Hawaii
    - Regina, SK, Canada
    - Overland Park, KS

2012-2014 Senior Manager, Fire & EMS

International City/County Management Association

- Provide project management and consulting services for fire and emergency medical services
    - St. Louis, MO (Fire/EMS)
    - Greenville, NC (Fire/EMS)
    - Johnson City, TN (Fire)
    - Washington County, TN (EMS)
    - Mankato, MN (Combination Fire)
    - Ontario, OR (Combination Fire)
    - Grants Pass, OR (Fire/Law Enforcement)
    - East Brunswick, NJ (EMS/Volunteer Fire Districts)
    - Prescott, AZ (Fire)
    - Long Beach, NY (Combination Fire/EMS)

1998-2013 Adjunct Instructor – Fire Science and Public Safety Administration Program

St. Petersburg College and State College of Florida

- Curriculum development, overall course management, and grading

2006-2007 Program Director – Emergency Medical Services

Manatee Technical Institute

- Developed all curriculum, course structure, schedules, faculty hiring and development, and maintenance of accreditation.

1999-2010 Instructor – Minimum Standards and Continuing Education Training

Pinellas County School Board

- Developed syllabi, overall course structure, and administered all grades.

2013-Present Affiliate Faculty College of Medicine
University of Central Florida College of Medicine

- Mentor medical students conducting research in the pre-hospital environment

2013-Present Faculty for Executive Fire Officer Program – USFA/NFA
National Fire Academy

- Faculty for Executive Leadership and Executive Development

EDUCATION

University of South Florida, Tampa FL 2012
Ph.D. in Curriculum & Instruction in Adult Education
Cognate in Research and Measurement
Dissertation: "An Examination of Self-Directed Learning Readiness in Executive-Level Fire Officers"

Troy State University, Troy, AL 2000
M.P.A. in Public Administration
4.0 GPA

University of Cincinnati, Cincinnati, OH, 1998
B.S. Fire & Safety Engineering Technology
Summa Cum Laude

AWARDS AND PROFESSIONAL RECOGNITIONS

- Outstanding Research Award by the National Fire Academy/United States Fire Administration/Federal Emergency Management Agency – 2007
- Chief Fire Officer Designation (CFO) by the Center for Public Safety Excellence – 2008
- Executive Fire Officer Program (EFO) by the National Fire Academy/United Sates Fire Administration/Federal Emergency Management Agency – 2008
- A. Don Manno Award for Excellence in Research by the National Society for Executive Fire Officers - 2007
- Fire Office of the Year presented by St. Petersburg Fire & Rescue - 2009

PRESENTATIONS

- "Setting Organizational Policy: What drives your fire ground, science or tradition?" Presented at the Firehouse World Expo, San Diego, CA (January 2015)
- "Fire Department Imagery: What are we selling?" Presented at the Firehouse World Expo, San Diego, CA (January 2015)
- "Setting Organizational Policy: What drives your fire ground, science or tradition?" Presented at the Nevada Fire Chiefs Association's Reno Fire Show, Reno, NV (October 2014)

- "Fire Department Imagery: What are we selling?" Presented at the Nevada Fire Chiefs Association's Reno Fire Show, Reno, NV (October 2014)
- "Leading from the Middle" Presented at Nevada Fire Chiefs Association's Reno Fire Show, Reno, NV (October 2014)
- "How the Fire Department Needs to Evolve: Expectations from City/County Government." Presented at the Pinnacle Conference, Scottsdale, AZ (July 2014)
- "Setting Organizational Policy: What drives your fire ground, science or tradition?" Presented at the Texas Fire Chiefs Association's Conference, San Antonio, TX (February 2014)
- "In Search of a Culture of Safety: An Exploration in Decision Making" Presented at the Florida Fire Chiefs Association's Fire Rescue East Conference, Dayton Beach, FL (January 2014)
- "In Search of a Culture of Safety: An Exploration in Decision Making" Presented at the Florida Fire Chiefs Association's Health and Safety Conference, Orlando, FL (October 2013)
- "Leading with Vision and Purpose" Presented at the International Association of Fire Chief's Fire Rescue International Conference, Chicago, IL (August 2013)
- "Setting Organizational Policy: What drives your fire ground, science or tradition?" Presented at the International Association of Fire Chief's Fire Rescue International Conference, Chicago, IL (August 2013)
- "Leading with Vision and Purpose" Presented at the Florida Fire Chief's Association's Executive Development Conference, Key West, FL (July 2013)
- "Setting Organizational Policy: What drives your fire ground, science or tradition?" Presented at the Florida Fire Chief's Association's Executive Development Conference, Key West, FL (July 2013)
- "An Examination of Self-Directed Learning Readiness in Executive-Level Fire Officers" Selected to present at the 2013 International Symposium for Self-Directed Learning, Cocoa Beach, FL (February 2013)
- "Leading with Vision and Purpose: How does agency and personal accreditation assist us?" Presented at the Center for Public Safety Excellence's 2013 Excellence Conference, Henderson, NV (March 2013)
- "Leading from the Middle" Presented at Fire Rescue East Conference, Daytona Beach, FL (January 2013)
- "Fireground Tactics: What Does Science Tell Us About Tradition?" Presented at the Florida Fire Chiefs Associations' Safety & Health Conference, Orlando, FL (December 2012)
- "Leading from the Middle: The 360 Degree Accreditation Manager" Presented at the Center for Public Safety Excellence's Excellence Conference, Las Vegas, NV (March 2012)
- "Rank Leadership" Presented at the Florida Fire Chiefs Association's Executive Development Conference, Marco Island, FL (July 2011)
- "Leading from the Middle: The 360 Degree Accreditation Manager" Presented at the Center for Public Safety Excellence's Conference, Orlando FL (March 2011)
- "Help Me, Help Me Not: A Practical Use of the LAP Instrument" Presented at the International Self-Directed Learning Symposium, Cocoa Beach, FL (February 2010)
- "Sink or Swim: Is St. Petersburg Fire & Rescue Doing Enough to Prevent Drowning" Presented at the National Fire Academy EFO Graduate Symposium, Emmitsburg, MD (May 2008)
- "Socio-Economic and Demographic Factors and the Use of the EMS System" Selected to present at the American Society of Public Administration's Southeastern Conference, Atlanta, GA (circa 2003)

RECENT PROFESSIONAL DEVELOPMENT –

- ICMA's "Asking your Police and Fire Chiefs the Right Questions to Get the Right Answers"

- Leadership Development Program with the Center for Creative Leadership
- Leadership St. Pete
- Executive Fire Officer Program with the National Fire Academy
- Executive Fire Officer's Graduate Symposium
- Florida Fire Chiefs Association's Executive Development Conference
- Center for Public Safety Excellence's Excellence Conference
- National Society of Executive Fire Officer's Polishing the Gold Conference
- International Association of Fire Chief's Fire Rescue International Conference
- Florida Fire Chiefs Association's Health and Safety Conference
- Florida Fire Chiefs Association's Fire Rescue East

COMPUTER PROFICIENCY –

- Microsoft Operating System
- Microsoft Office Suite: Word, PowerPoint, Excel, Outlook
- Learning Management Systems: Blackboard, WebCT, Angel
- PASW (previously SPSS) Statistical Software for Social Sciences
- Survey monkey survey building tool

MEMBERSHIPS –

- America Society of Public Administrators – Council Member for Suncoast Chapter (Emergency Management, Public Administration, and Research sections)
- International Association of Fire Chiefs
- National Society of Executive Fire Officers
- Florida Fire Chiefs Association
- Advisory Board Member for St. Petersburg College's Emergency Management Program
- Florida Association Fire Service Instructors
- Florida Fire Chiefs EMS Chief Section
- Florida Fire Chiefs Executive Fire Officer Section Regional Representative
- Southeastern Association of Fire Chiefs
- Pinellas County Emergency Medical Services Advisory Committee
- International Association of Fire Fighters

Bruce J. Moeller, Ph.D.

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ACADEMIC DEGREES:

2001 **Doctor of Philosophy**, Florida Atlantic University; College of Architecture, Urban and Public Affairs; School of Public Administration. Major: Public Administration.

1990 **Master of Arts in Public Administration**, Department of Public Administration; Northern Illinois University.

1986 **Bachelor of Arts**, Concentration: Fire Administration, Western Illinois University.

EMPLOYMENT HISTORY:

Professional Experience

2012 to 2015 **Chief of Staff / Assistant County Administrator**
Pinellas County, Florida

- Held a number of leadership positions largely related to public safety before serving as Chief of Staff
- Served as part of the County's Senior Management Team in an urban county of almost 1 million population.
- Primary areas of responsibility include EMS and Fire Administration; Regional 9-1-1; Emergency Management; Ambulance Billing & Financial Services; Animal Services; Justice & Consumer Services; Human Services and Radio & Technology.
- Significant public policy role collaborating with municipal and county leaders.

2008 to 2012 **City Manager**
City of Sunrise, Florida

- Chief Administrative Officer of a culturally diverse, full service community (approx. pop. 90,000) in South Florida. The City of Sunrise operated with a $439 million budget and a workforce of approximately 1,200 employees. Responsible to a five-member Commission for all facets of municipal administration, the city manager is directly responsible for negotiating with employee unions, is the appointing authority for personnel, and prepares the annual budget. Services include: community & economic development, fire, police, public works, utilities (serving a total population of 220,000), purchasing, finance, information technology, emergency management and leisure services.

- Located in western Broward County, the City was the state's second largest tourist attraction, Sawgrass Mills Mall, which drew over 25 million visitors a year. Also making its home in Sunrise is the 20,000+ seat Bank Atlantic Center, home of the NHL's Florida Panthers.
- The City consistently experienced growth in office and commercial development. Many major corporations relocated to the City and the community was a leading destination for economic development in the metropolitan area.

1977 to 2008 **Public Safety Background**
Sunrise, Florida; Broward County, Florida; Naperville, Illinois; Wilmette, Illinois; Lake Forest, Illinois

A strong public safety background spanning several decades. Initially entered public service as a police officer for several years before entering the fire service. Served in entry-level positions in both disciplines prior to advancing in the fire service. Functioned in increasingly responsible roles, both as a line officer and administrative staff. Served for over 15 years as a fire chief, with experience in large, urban metropolitan-sized agencies and suburban departments. Managed fire suppression, fire prevention, paramedic programs, hazardous material responses, search & rescue teams, 9-1-1 communications and a full array of emergency management functions. Specific experience and last working title include:

- Fire Chief - Sunrise Fire Rescue - Sunrise, Florida 1997-2008
- Director / Fire Chief - Broward County – Fort Lauderdale, Florida 1990-1997
- Fire Captain – Naperville Fire Department – Naperville, Illinois 1982-1990
- Firefighter / Paramedic – Wilmette Fire Department – Wilmette, Illinois 1979-1982
- Police Officer – Lake Forest Police Department – Lake Forest, Illinois 1977-1979

University Teaching Experience

2015 **Adjunct Lecturer**
Fire and Emergency Services Program
University of Florida
Gainesville, Florida

2014	**Adjunct Instructor** School of Public Affairs University of South Florida Tampa, Florida
2001 to 2011	**Adjunct Instructor** School of Public Administration Florida Atlantic University Boca Raton, Florida
1998 to 1999	**Adjunct Instructor** Department of Professional Management Saint Thomas University Miami, Florida

Dr. Moeller has taught at both the graduate and undergraduate level. Courses taught include the following:

PAD 4884: Introduction to Terrorism for Emergency Managers (University of Florida)

The goal of this course is to provide students with a general knowledge about terrorism in our world and the methods used for counterterrorism.

PAD 6934 – Performance Management (University of South Florida)

Performance management involves both science (drawn largely from the field of statistics, business and performance *measurement*) and art (derived in part from organizational behavior and theory). While the theoretical underpinnings are important, this course will emphasize performance management in its practical application.

PAD 6807 – Local Government Administration (Florida Atlantic University)

Examines the various dimensions of local government administration, including methods for improved service delivery. Major areas include the purpose and use of performance measurement in local government; establishing organizational priorities through strategic planning; and implementing change in local government by applying techniques of change management.

PAD 4933 – Capstone Seminar in Public Management (Florida Atlantic University)

An integration of theories and skills in the development of practical strategies designed to help address public problems. The course provides an opportunity to integrate and apply prior learning in order to actually improve public organizations.

PAD 4426 – Public Sector Labor Relations (Florida Atlantic University)

An examination of the historical development in labor relations and collective bargaining for the public sector. Examines the impact of public employee unions on public personnel administration.

FES 3003 – Fire and Emergency Services Public Policy (Florida Atlantic University)
Exposes students to the many facets of policy making and implementation issues in fire and emergency services, including the legal foundations from which agencies operate. Emphasis is placed on the politics of administration.

MAN 701 – Organizational Design and Theory (St. Thomas University)
A course that views organizations from a macro perspective including the domestic and global environment. Both size and technology were explored in determining the structure and processes of organizations while providing students with 'diagnostic skills' needed to effectively manage complex organizations.

PUBLICATIONS & PRESENTATIONS

Moeller B. & Knight, S. (2015, Forthcoming). Critical Questions Every Fire/EMS Chief Should Ask Their City/County Manager. Fire Rescue International. Atlanta, GA.

Moeller, B. Knight, S. & Sheridan, T. (2015, Forthcoming) How to Use 'Fire Freakonomics' to Transform Your Department. Pinnacle, Jacksonville, FL.

Moeller, B. (2015). Political Side of Apparatus Purchasing. FDSOA 27th Annual Apparatus Specification & Vehicle Maintenance Symposium. Orlando, FL.

Moeller, B. (2014). Making Fire Departments Think: Organizational Situational Awareness. Fire Rescue International. Dallas, TX.

Fuentes, G., Knight, S., Moeller B., & Sommers, S. (2014). How the Fire Service Needs to Evolve: Expectations from City & County Government. Pinnacle . Scottsdale, AZ.

Fuentes, G. & Moeller, B. (2014). I Don't Have enough Money – Now What? Pinnacle. Scottsdale, AZ

Moeller B. & Paulison R. (2014). Informed Decision-Making in Real Time. Metropolitan Fire Chiefs Conference. Baltimore, MD.

Moeller, B. (2014). Think. In Goldfeder, B. (Ed.) Pass It On. Tulsa, OK. PennWell.

Moeller, B. (2014). The Role of the Emergency Operations Center. FireRescue – February.

Moeller, B. (2013). P4 – Positive Performance for Politicians & Public. Fire Rescue International. Chicago, IL.

Moeller, B. (2012). Leading Agencies During Periods of Economic Decline. Fire Rescue International. Denver, CO.

Moeller, B. & Krakeel, J. (2012) Using EMS Dollars Wisely. Fire-Rescue Med. Las Vegas, NV.

Moeller, B. (2012). Financial Management. In Jennings, C. & Thiel, A. (Eds.), Managing Fire and Rescue Services. Washington, DC: International City County Management Association.

Moeller, B. (2011). Ten Things Your Boss is Talking About – And You Don't Know. Fire-Rescue International. Atlanta, GA

Moeller, B. (2011). Leading Agencies During Periods of Economic Decline. International Association of Chiefs of Police. Chicago, IL.

Moeller, B. & Nagaraj, R. (2011). Meaningful National Fire Service Data. Metropolitan Fire Chiefs Conference. Charlotte, NC.

Moeller, B. (2010). Lions, Tigers and Bears: Following the Political Yellow Brick Road. Fire-Rescue International – 2010. Chicago, IL.

Moeller, B. (2009). Managing the Manager: Getting What You Want By Giving the Manager What They Want. Fire-Rescue International – 2009. Dallas, TX.

Moeller, B.; Thompson, S.; and Dorsett, A. (2009). The Fire Chief's Role in Tough Times. Florida Fire Chiefs Annual Meeting and Development Conference. Fort Lauderdale, Florida.

Moeller, B. (2009). Issues in Emergency Services. Public Management, 91 (1) 12-15.

Moeller, B.; Dickerhoff, K.; Cohen A. and Cole, H. (2008). Vulnerable Population Registry in Broward County. 22nd Annual Governor's Hurricane Conference. Fort Lauderdale, Florida.

Moeller, B. (2008). National Incident Management System (NIMS): Keeping your disaster from becoming a disaster. In Pinkwoski, J. (Ed.), Handbook of Disaster Management. Boca Raton, Florida: Taylor & Francis.

Moeller, B. (2008). Lies, Damn Lies, and Statistics. Fire-Rescue International - 2008. Denver, Colorado.

Moeller, B. (2007). Keeping Your Disaster from Becoming a Disaster: Establishing and Maintaining Situational Awareness. Fire-Rescue International - 2007. Atlanta, Georgia.

Moeller, B. (2007). Are You Prepared for the Politics? Southeastern Association of Fire Chiefs 79th Annual Conference. Daytona Beach, Florida.

Moeller, B. (2007). Implementing Change While Avoiding the Chaos – Essential Ingredients of Leadership. Fire-Rescue Med - 2007. Las Vegas, Nevada.

Moeller, B. (2007). Answering Big Questions in the Fire Service. International Fire Service Journal of Leadership and Management, 1 (2), 11-16.

Moeller, B. and Mikel R. (2006). Strategies for Success: Getting Your Ideas on the Political Agenda. Fire-Rescue International - 2006. Dallas, Texas.

Moeller, B. (2006). Leaders Do Not Stand Still. On Scene. 20 (11), 6.

Moeller, B. (2006). Leading Change: The Process of Leadership. Florida Fire Service, 14 (3), 7.

Moeller, B. (2005). Apples to Apples. Fire Chief, 49 (8), 82 – 90.

Moeller, B. (2004). Strategies for Success: Managing the Chaos of Change. Fire-Rescue International - 2004. New Orleans, Louisiana.

Moeller, B. (2004). Obstacles to Measuring EMS Performance. EMS Management Journal, 1 (2), 8-15.

Moeller, B. (2002). Benchmark Challenge. Fire Chief, 46 (8), 88-90.

Moeller, B. (2002). Research in the Development of Deployment Standards: Why Can't We Answer 'Big Questions' in the Fire Service. IFE Fire Service Deployment Conference. Indianapolis, IN.

Moeller, B. (2001). Problems of Measuring Performance in the Fire Service: Do We Really Want to Improve or Simply Claim We Have? Deccan Conference. San Diego, CA.

Moeller, B. (1985). Medical Effects of Wearing Self-Contained Breathing Apparatus. Fire Engineering, 138 (10), 43-51.

PUBLIC & PROFESSIONAL SERVICE:

Chair, Patient Protection and Affordable Care Act Task Force of the International Association of Fire Chiefs (2013 – 2015)

Member, Editorial Board of FireRescue Magazine (2012-Present).

Member, ICMA Governmental Affairs & Policy Committee (2010-2012)

Member, FCCMA Disaster Preparedness Committee (2010-2012)

Member, Editorial Board of the International Fire Service Journal of Leadership and Management (2008 – Present).

Member, Board of Directors of the International Fire Service Research Center and Policy Institute (2007 – Present).

Member, University of Florida Advisory Board for Fire and Emergency Services Bachelor's Program (2008 – 2009).

Director at Large, EMS Section of the International Association of Fire Chiefs (2006 – 2008)

Member, National Centers Task Force of the International Association of Fire Chiefs (2006 – 2007)

Member, National Fire Protection Association Technical Committee on Incident Management Professional Qualifications (2006 – Present)

Member, Professional Development Committee of the International Association of Fire Chiefs (2002 – 2007)

Member, EMS Workforce Taskforce of the National Registry of Emergency Medical Technicians (2005 – 2006)

Editorial Board for Fundamentals of Fire Fighter Skills. Jones and Bartlett Publishers: Sudbury, MA. (2004).

President, Fire Chiefs Association of Broward County (2002 – 2004).

Member, National Fire Protection Association Subcommittee on Self-Contained Breathing Apparatus. Responsible for NFPA 1981. (1990-1992).

Member, Broward County Regional Emergency Medical Services Council, (1992- 1997)

PROFESSIONAL MEMBERSHIPS AND HONORS:

International City County Management Association
Florida City County Management Association
Meritorious Service Award – IAFC Emergency Medical Services Section
International Association of Chiefs of Police
International Association of Fire Chiefs
National Fire Protection Association
Metropolitan (Metro) Fire Chiefs
Florida Fire Chief's Association
American Society for Public Administration
Pi Alpha Alpha, National Honor Society for Public Affairs and Administration
Chief Fire Officer Designation – Commission on Fire Accreditation International (CFO)
Nationally Registered Emergency Medical Technician – Paramedic (NREMT-P)
Fellow - Institution of Fire Engineers (FIFireE)
Certified Public Pension Trustee – Florida Public Pension Trustees Association (CPPT)

GANG WANG, Ph.D. gang.wanggang@gmail.com

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SUMMARY

Studied more than sixty emergency services operations using data-driven techniques to determine the most efficient organizational structures to provide public safety services. Ability to effectively lead teams through complex issues and deliver results to meet project timeline. Excellent and experienced communicator in creating and delivering senior management presentations.

PROFESSIONAL EXPERIENCEF

Fitch & Associates, Senior Associate **2015 – Present**

Primarily responsible for collecting, processing and analyzing data, and writing and presenting findings internally and externally.

Center for Public Safety Management (CPSM), Senior Manager
International City/County Management Association (ICMA), *Senior Manager* **2008 – 2015**

Involved in all phases of projects including initial data collection, on-site interview, large-scale data processing, statistical analysis, creating data reports and final client presentation. Completed more than sixty public safety studies of fire and emergency medical services. The fire and EMS studies focus on analyzing fire department, emergency medical service (EMS) agency, and private ambulance service in terms of workload, deployment, and response time. The results are often used to make major budget decisions and operational process improvements. The studied cities and counties have covered the entire spectrum of size (from population of 10,000 to a million) and location (30 states). The studies face intense public scrutiny and discussion.

Ford Motor Company/Visteon Corporation, *Consultant* **2003 – 2008**

- *Behavior Decision Making and Insights:* Designed and deployed engineering decision making surveys, interviewed Chinese and American automotive engineers to understand the cross-cultural differences in risk preferences, risk perceptions and risk attitudes.
- *Manufacturing Process Improvements:* Assessed manufacturing complexity levels of four Visteon plants. Developed a quantitative system to recommend cost effective methods of handling manufacturing complexity.
- *Product Portfolio Selection:* Investigated U.S. regional differences in customers' vehicle color preferences and developed an optimization model to select the best production portfolio of exterior color mix for any car model.
- *Investment in Focused Factory:* Interviewed key stakeholders and identified cost centers and activities. Developed a simulation based system to estimate the investment cost and associated uncertainty.
- *Supply Chain Sourcing Optimization:* Analyzed hundreds of product and component specifications. Developed web based IT system to implement the product development process and a set covering optimization model to select the most cost effective sourcing portfolio to meet a variety of product requirements.

EDUCATION

Ph.D. (08/08): Industrial Engineering, Wayne State University, Detroit, Michigan
M.E. (08/03): Management Information System, Chongqing University, Chongqing, P.R. China
Dual B.S. (08/00): Management Science, Industrial Design, Chongqing University, P.R. China

PUBLICATIONS

- Wang, G., R. B. Chinnam, I. Dogan, Y. Jia, M. Houston and J. Ockers. 2014. "Focused factories: a Bayesian framework for estimating non-product related investment." *International Journal of Production Research* 53 (13).
- Wang, G., B. Nepal, L. Monplaisir and S. Ponsock. 2011. "Integrated Framework for Component Variety Management: A Case Study." *Integrated Journal of Services and Operations Management* 10 (1) 74-93.
- Chelst, K., G. Wang. 2006. "Good Management: The Missing XYZ Variables of OR Texts." *Perspectives in Operations Research: Papers in Honor of Saul Gass' 80th Birthday*, College Park, Maryland.
- Song, Y., F. Liu, G. Wang and J. Miao. 2004. "A Reference Model of Information Exchange in Networked Manufacturing." *China Mechanical Engineering* 15 (16) 1458-1461.
- Wang, G. and J. Deng. 2002. "Two layered production pattern and its application technologies for mass customization", *Proceedings of the Tenth CUSMA Conference on Manufacturing Automation*, Cheng Du, China,

739 E 100 S Kaysville, UT 84037 **Carlynn C Page** cpage@fitchassoc.com 385-243-4697

Employment History

06/2016 – Present Senior Consultant Fitch & Associates

- Work with public safety organizations to identify what's working well and opportunities for improvement.
- Use sound processes and extensive experience to develop community-specific solutions to system issues

03/2016 – Present Site Reviewer Commission on Accreditation of Ambulance Services

- Conduct a thorough review, in advance of assigned on-site visits, or materials submitted by applicant agencies
- Fully participate in all review activities as assigned by the review team leader and staff, including the preparation and timely submission of reports

07/1999 – 06/2016 Associate Director International Academies of Emergency Dispatch

- Accreditation process and board oversight
- Legislation/government affairs/grassroots oversight
- Award process and committee oversight
- Communication Center Manager Course development and oversight
- Provide superior customer service and support

12/1989 – 07/1999 Communication Center Manager & Dispatcher Layton City Police Dept.

- Supervise 911 emergency dispatch division
- Develop, monitor, maintain budget
- Represent agency on key legislative issues, task forces, user groups and committees
- Write policy and procedures
- Supervise personnel including, but not limited to, hiring, terminating, scheduling, training, evaluating, remediation, discipline
- Accreditation

Education History

12/1987	University of Utah	Speech Pathology and Audiology Bachelor's Degree

Certifications and Honors

04/1993	University of Phoenix	Paralegal Certification
11/2014	Licensed Facilitator	Arbinger Institute
05/2011	Certified	Utah Crisis Intervention Team
06/2010	Train the Trainer	National Center for Missing & Exploited Children
04/1993	Cat II Police Officer Certification	UT Peace Officer Standards & Training

Volunteer and Club

- National Emergency Number Association (NENA), Utah Chapter President - two terms
- Guest Service Host for the Mormon Tabernacle Choir at Temple Square

Brian McGrath
1287 Third Street, RR3, St Catharines, Ontario, Canada L2R 6P9
brianmcg@cadnorth.com
http://www.cadnorth.com
(905) 646-5172

Summary of Qualifications:

- 20+ years Information Systems management and development in the public safety industry
- 15+ years Business and Systems Analysis in public safety software development
- Exceptional ability at requirements capture, analysis and documentation
- Fully conversant with all aspects of software product development and implementation life-cycle
- Experienced software developer of Public Safety Communications applications
- Excellent communications and interpersonal skills, comfortable at all organizational levels
- Solid base of operational experience in Public Safety Communications

Computer Skills:

- Visual Studio 2010, Visual Studio 2008, Visual Basic 6.0, SQL Server, ADO, RDO, CA-Clipper 5.x, C
- TriTech Software Systems RAPTOR Integration with VisiCAD/InformCAD Product Suite
- GIS Analysis, MS MapPoint integration, MapInfo, MapBasic, ESRI ArcEngine/NetEngine
- TCP/IP, Internet, Networking Administration
- Windows Server/Workstation Administration, Novell Netware
- MS Project, Visio, Word, Access, Excel, Outlook, PowerPoint

Professional Experience:

CAD North Inc. **Sept 2005 - Present**
Co-Founder/President
Providing business analysis, project management and software development services to the Public Safety industry

VB/SQL Systems Development
Develop and market an automatic intelligent E911 pre-alert system (HeadStart911) that integrates seamlessly with VisiCAD, advising the dispatcher of caller location and paging the closest available paramedic unit based on real-time analysis of unit availability and street-level routing calculations. Reduces internal call processing times and dramatically improves emergency response times.

Custom Software Design and Development
Develop custom CAD-integrated solutions based on analysis of client systems and operational needs. Conduct business analysis and functional requirements capture based on Public Safety industry best practices.

Geospatial Analysis and EMS System Design
Provide consulting services and analysis related to High Performance Emergency Medical Services. Develop System Status Plans based on geospatial and temporal analysis of emergency incident data.

Manager, CAD and EMS Infrastructure **June 2005 – June 2007**
Regional Municipality of Niagara
Manage day to day support and ongoing development, testing and implementation for the VisiCAD computer-aided dispatch system at Niagara Ambulance Communication Service. Supervise technical staff of contract programmer and data analyst. Develop new applications and interfaces to support the Communications operations.

Brimac Systems Inc. **1999 – June 2005**
Founder/President
Providing business analysis, project management and software development services to the Public Safety industry

VB/SQL Systems Development
Develop and market a Real-Time Adaptive Training Simulator that interfaces with the VisiCAD Command dispatch system to provide an adaptive and compellingly realistic training environment for initial, recurrent and disaster simulation dispatch training. Simulator integrates with VisiCAD, creating incidents and generating AVL updated vehicle locations based on routing calculations, calculates vehicle status changes and generates audio radio messages based on user-defined scripts and scenarios.

Client: Ontario Ministry of Health
Project Lead – VisiCAD Implementation **2004 – June 2005**
Determine, implement and test optimum VisiCAD configuration for Niagara Ambulance Communication Service. Implementation includes ProQA integration, AVL, mobile data and status reporting, Paging, FirstWatch, Bradshaw MARVLIS Suite. Develop and execute acceptance test plans. Develop and maintain project plan and related project documentation.

Client: University of Toronto, Mechanical and Industrial Engineering
VB/SQL Systems Developer **2002 – 2003**
Develop a custom real-time and historic fleet performance display system integrated with the TriTech VisiCAD Computer Aided Dispatching System. Displays most recent incident performance by priority, monitors performance of ongoing responses, current and historic fleet utilization statistics.

Client: TriTech Software Systems,
Business Analyst **1999 – 2004**
Work closely with TriTech's Police, Fire and EMS clients and Project Managers to define and implement software and interface configurations that meet the Client's expectations of the VisiCAD mission critical resource deployment system capabilities. Determine and document client-specific product enhancement and interface requirements.

- Communicate effectively with all levels of the Client, Prime Contractor and Subcontractors to clearly define and document functional requirements, use cases and test cases.
- Analyze Client's operational model and information requirements and determine optimum system configuration.
- Travel extensively to facilitate on-site requirements capture workshops with domain experts and perform system analysis
- Develop complete functional and technical requirements including User Interface prototypes, use cases, test cases, domain and data models, interfaces to other Vendor systems such as mobile data, radio, automatic vehicle locating (AVL), E911, criminal justice records check, records management systems, automated paging, CAD-to-CAD
- Develop and execute Acceptance Test Plans based on documented business and functional requirements.

Toronto Ambulance Service **1981 – 1999**
Manager, Communications Systems **1995 – 1999**
Lead a team of eight programmers, network administrators and system support specialists as they manage the Computer Aided Dispatch System and Business Information Networks.
Full responsibility for:

- Determining business and system IT requirements for all levels of the department
- Developing functional specifications for new systems and system modifications
- Setting system development priorities and timetables
- Identifying and managing resource needs and critical path issues
- Coordinating with Training and Operations to ensure systems and enhancements are brought online smoothly and on schedule
- Reviewing implementations with client users to determine subsequent refinements
- Administrative and Mission-Critical CAD network administration and security.

Highlights:

- Developed Functional Specification Documents and Request for Proposal document for replacement Computer Aided Dispatch (CAD) system for Toronto Ambulance
- Evaluated bids for replacement CAD system and advised Senior Staff during the selection of preferred vendor
- Reviewed and approved Interface Functional Specification Documents relating to Automatic Vehicle Locating, Paging, E911/ANI/ALI, Hospital Emergency Room Status, Vehicle Status Messaging and the Radio/Telephone System
- Project Manager for the implementation of TriTech Software Systems CAD replacement for Toronto Ambulance Service
- Developed and integrated an AVL Display system with the existing CAD System. Displayed Incident and Unit locations in real time.

Coordinator, Information Applications Group **1990 – 1995**

With a staff of three, developed network access to real-time analysis of CAD information and summary databases.

- Conduct statistical analysis of system performance based on data from CAD system
- Develop real time statistical and decision support applications
- Develop functional specifications for CAD system enhancements
- Project management related to Communications Centre

Highlights:

- Developed a Gateway Server application to mirror CAD active incidents on the administration network to support programs that provided detailed real-time information and analysis without impacting the production CAD system.
- Designed and implemented a real-time Quality Assurance Paging system using mirrored CAD data to provide reporting on operational performance exceptions and monitoring of response time and System Status Plan compliance.
- Designed/developed real-time System Status Plan display system for in-house CAD.
- Planned/managed relocation of the 800+ calls/day Communications Centre to new facilities

Communications Supervisor, Quality Assurance **1985 – 1990**

Monitored operational performance of Dispatchers and operational dispatch processes.

- Review Operational Performance and develop proposals for modifications to procedures to ensure that performance results kept pace with performance goals.
- Develop the functional specifications for CAD system enhancements. Ensure that the CAD software project team clearly understands operational requirements. Oversee the testing and release of new versions of CAD software.

Senior Dispatcher, CAD Training **1984 – 1985**

- Trained dispatchers in the operation of the Computer Aided Dispatch system
- Assisted in the development and presentation of CAD related training material
- Provided technical and operational support for CAD system after go-live

Dispatcher **1981 – 1984**

- Received E911 requests for Ambulance Service from the public in both Emergency and Non-emergency situations
- Triaged emergency calls based on Medical Priority
- Assign and track ambulance resources to emergency and non-emergency incidents
- Managed Fleet deployment to ensure rapid response to all incidents and requests for service

References:

Available upon request

www.fitchassoc.com