City of Palo Alto
City Council Staff Report

Report Type: Consent Calendar  Meeting Date: 3/7/2011

Council Priority: Emergency Preparedness

Title: Amendment to agreement with Sys Planning/Tri Data

Subject: Approval and Authorization for City Manager to enter into amendment No. 1 to contract with Systems Planning Corporation/Tri Data Division to add $40,000 for preparation of an EMS study for a total contract amount not to exceed $87,000. Authorize the City Manager to sign an amendment to the agreement with Systems Planning Corporation/Tri Data Division in the amount of $34,500 to complete the City of Palo Alto Emergency Medical Services Resources, Services and Utilization Study.

From: City Manager

Lead Department: City Manager

Recommendation
Approval and Authorization for City Manager to enter into amendment No. 1 to contract with Systems Planning Corporation/Tri Data Division, to add $40,000 for preparation of an EMS study for a total contract amount not to exceed $87,000.

Background
This study was originally approved by the Fire Department in the fall of 2009 for completion by a different company. Unfortunately, the company that was originally hired to complete the EMS Study was terminated in November 2010 for non-performance. As a result, it is now necessary for the City to engage another firm to conduct the study.

Staff recommends that Council authorize the City Manager to sign an amendment to the agreement with Systems Planning Corporation/Tri Data Division in the amount of $40,000 ($34,500 plus expenses) to complete the City of Palo Alto Emergency Medical Services (EMS) Resources, Services and Utilization Study.

Discussion
In January 2011, Systems Planning Corporation/Tri Data, along with the International City/County Management Association Consulting group, completed the Fire Department Resources, Services and Utilization Study for the City. Because the firm has knowledge of the City of Palo Alto, the fire department and its staff, as well as collected quite a bit of data...
through the City's computer aided dispatch (CAD) system, it follows that the firm could get a jump start on completing this very important, overdue study for the City. In addition, Tri Data has successfully completed similar EMS operations studies for other jurisdictions.

Staff requested a proposal from Tri Data and the cost will be $40,000 ($34,500 for consulting and not to exceed $5500 for expenses) and will be paid through the Fire Department contingency/consulting services line item. This is consistent with what staff has received in terms of costs from other firms when the original RFP was issued in fall 2009. The original contract with Tri Data was $47,000 and this amendment to completed the EMS Study will bring those costs to $87,000 total.

A copy of the scope of work and task steps are included as Attachment A.

**Timeline**
The consultant will begin the work immediately following approval by Council and estimates that the study will be completed by the end of the fiscal year.

**Attachments:**
- Tri Data EMS Work Plan  (PDF)

Prepared By: Pam Antil, Assistant City Manager

Department Head: James Keene, City Manager

City Manager Approval: James Keene, City Manager
Proposal to
City of Palo Alto

EMERGENCY MEDICAL SERVICES ADD-ON
TO CURRENT FIRE SERVICES UTILIZATION
AND RESOURCES STUDY

Prepared by:
TriData Division,
System Planning Corporation
3601 Wilson Boulevard, 5th Floor
Arlington, VA 22201
PROPOSAL

Emergency Medical Services Add-on to Current Fire Services Utilization and Resources Study

Submitted to:
Greg Pustelnik, Purchasing Manager
City of Palo Alto
Purchasing and Contract Administration – M Level
250 Hamilton Avenue, Mail Stop MB
Palo Alto, CA 94301

Submitted by:
Philip Schaeenman, President
TriData Division, System Planning Corporation
3601 Wilson Boulevard, 5th Floor
Arlington, VA 22201
(703) 351-8300
INTRODUCTION

As part of the current Palo Alto Fire and Emergency Services Analysis, TriData was asked to propose an expanded assessment of Emergency Medical Services for the City. We believe that this proposal will provide the basis for the quality and cost effective assessment.

Our Understanding of the Problem

The city of Palo Alto, like many cities in California is facing a challenge to decide whether to provide full-service EMS or to limit services to emergency first response. Another consideration is whether first response should be at the advanced support or basic life support level.

Whether to provide full-service EMS or reduce to first responder has far reaching affects that need consideration. Palo Alto is considered a “201 City,” operating their EMS system somewhat independent from Santa Clara EMS. Relinquishing their 201 status could invite additional operational and financial liabilities.

TRIDATA EMS EXPERIENCE

Most of the over 175 state and local government studies performed by TriData have included some EMS elements. These elements include clinical policy management, unit location, response time analysis, administration, financial management, ambulance bill collection, EMS operations, and consolidation of fire and EMS systems.

Some examples of our recent EMS studies include:

- City of Alameda, CA – Study of EMS Services (2010)
- City of Key West, FL – EMS System Study and RFP for Ambulance Service (2010)
- Franklin Township, NJ – Selection of Township EMS Provider (2009)
- Orange County, FL – EMS System Assessment and Provider Selection (2008)
- City of Pittsburgh, PA - EMS Evaluation and Fire/EMS Consolidation (2008)
- State of New Jersey – Comprehensive Assessment of State EMS System (2007)

PROPOSED STAFF

Corporate oversight will continue to be provided by President Philip Scharenman, and Stephen Brezler will continue to serve as project manager. The primary researcher for the EMS portion of the study will be

TriData Division,
System Planning Corporation
Dr. Harold C. Cohen, another TriData senior project manager. Dr. Cohen has managed many TriData studies, including the EMS studies listed above. He has over 30 years of EMS and fire service experience, including 22 years with a large, combination, fire and EMS system. Harold has a Ph.D. in Health Services, M. S. in Emergency Health Services Administration and Management, and was an IAFC/NFPA Fellow to the Harvard University/JFK School of Government in the Senior Executives in State and Local Government programs. He is a graduate of the National Fire Academy Executive Fire Officer Program and instructs with this program. Harold is also a Fellow of the American College of Healthcare Executives (ACHE) and is board-certified in Healthcare Management.

Dr. Cohen will report to Steve Brezler in the manner that other staff and consultants are currently doing fire study. TriData's administrative staff will provide project support.

Jeff Dyar, is a senior TriData consultant who specializes in EMS system planning and evaluation. Mr. Dyar is the former chair of the National Fire Academy EMS Curriculum and Acting Branch Chief for Executive Programs. He was awarded the James O. Page EMS Leadership Award by the International Association of Fire Chiefs. Jeff has also been a firefighter and paramedic, rising through the ranks to battalion chief. Mr. Dyar has served on several TriData projects including, the New Jersey State EMS System Evaluation, the Orange County, FL EMS study, and the City of Alameda, CA EMS study.

SCOPE OF WORK

The scope of work section contains specific areas that will be research. Also included is a list of tests related scope of work.

Current Status of EMS in Palo Alto

Our evaluation begins with the initial stage of emergency response, 911 access and identifies each constituent group within the township. Excluding any stage of EMS response limits the township from seeing the complete picture and often leads to faulty recommendations.

EMS Dispatch – We will examine each primary and secondary access and dispatch points to determine the effect that call processing time has on EMS response. Our examination of medical priority dispatch (or similar programs) will help determine the efficiency of weight of response, and possibly find ways to reduce unnecessary responses that effect safety, cost, and control overuse of valuable volunteer human resources.

Fire Service First Response – we will examine current first responder service provided by the Palo Alto Fire Department including, response times, service forecasting, and level of
service provided. Level of service provision includes determining the need for providing basic or advanced life support.

**EMS Transportation** – TriData will evaluate EMS transportation provided by the city and by the County EMS provider. We will attempt determine whether the City and County is meeting their response time goals and providing appropriate levels of service.

**County EMS System** – California operates on a County-based EMS where local municipalities usually depend on the County EMS transportation. Palo Alto is one of the small number of cities that provides full-service EMS. We will examine relationship between Santa Clara County EMS system and City fire department. This will include the administrative, operational, and financial dealings between these government agencies.

All of TriData’s EMS system assessments emphasize a systemic approach, with citizen concerns and participation at all levels. We are experienced at conducting community-based participation and mediation, having done so in our New Jersey and Lee County, Florida EMS studies. At each level, we assure the opportunity for all constituents to offer input into the evaluation and recommendation process.

**Risk and Demand**

One of TriData’s premier services is a risk and demand assessment for the communities that we serve. We use the latest assessment technologies, including ARC 9.3 GIS mapping, and SPSS 15 statistical software to produce quantitative and qualitative measurements to guide current and strategic initiatives. Most of the risk and demand section leader or the fire department study. Our addendum focuses on specific EMS.

**Possible Future Delivery Models**

The township is interested in determining its EMS needs for the next decade. Any model proposed will be operationally and financially sound, with citizen needs being a priority. We will examine several possible EMS models including career, volunteer, fire-based, municipal service, hospital, commercial, or a combination of these models.

**Determining Possible Delivery Models** – Our approach is to offer models that demonstrate resonant simplicity that is operationally and fiscally sound. These EMS delivery models often require a strategic mixing of different first responder and EMS transportation services that promote quick response, high levels of care, and cost effectiveness.

Any reasonable EMS delivery model will be considered. Any suggested transitions will be data-driven, and scientifically-based, but will be practical for the City. In addition to operational models, we will also recommend possible administrative oversight models. These models will include planning and executive management, and managing day-to-day administrative services.
Financial Evaluation of Possible Delivery Models

Any discussion of an EMS delivery model must include a financial evaluation of the possibilities. Each proposed delivery model will include a detailed financial analysis of the following areas:

- **Human Resources** – Any human resources costs, including pay, benefits, and other variables.
- **Capital Projects** – The costs associated with buildings, equipment, and medical supplies
- **Administrative Costs** – The costs associated with day-to-day operations and administrative oversight of the EMS system.
- **Revenues** – Determining the expected revenues from providing EMS, including the best mechanisms to protect the township from legal harm.

Study Tasks

TriData will use a task-oriented approach to complete the study. The general approach we propose is time-tested, with the details tailored to township requirements. We are flexible to discuss changes. For each major task we list the key team members that will participate. The lead person for each task is the first individual listed (in italics).

| Task 1: Kickoff Conference Call | Personnel: Brezler and Cohen |

Our approach begins with a kickoff conference with the City to confirm project objectives and goals, validate the program plan, finalize the project schedule (including milestones and deliverable target dates), review the expectations to validate stakeholder understanding and concurrence, and review background information requirements. We will also plan the tight schedule of meetings for the site visits by TriData.

The kickoff meeting should be conducted within three working days after contract award and will include the TriData and the township’s designated project manager, senior team members, and others, as appropriate. If members of the township’s project team are at remote locations, we can provide toll free 1-800 conference access.

| Task 2: Collection and Review of Background Materials | Personnel: Team |

To the extent available, we would like to obtain a set of background data at the beginning of the study, in advance of our “triage” visit. We understand that some of the data may not be available or may take time to gather.
Proposal - City of Palo Alto, CA
Emergency Medical Services Add-on

- Initial data we would like to obtain is as follows:
  - Map of the entire EMS protection area
  - EMS department organization charts
  - Map of each EMS squad area
  - Land use, zoning and demographic data, especially population projections and future land use plans
  - Personnel deployment (number of personnel on each unit)
  - Several annual reports (if any)
  - Expected major capital improvements that would present new risks or affect existing risks or travel times (e.g., major roads)
  - Capital improvement and ambulance replacement programs used by each squad
  - EMS, hazmat, and rescue, and trend data for the past 5–10 years
  - Response time profiles for EMS calls, by geographic area. Alternatively, a database from which this can be computed is satisfactory.
  - EMS vehicles by station (age; manufacturer; type; last major refurbishment, if any), including front-line and reserve units
  - Mutual and automatic aid agreements
  - General obligation bond commitments and promises
  - General information about the ambulance stations, e.g., size, year built, construction, number of bays, etc.

For the response time analysis we will need:

- CAD data, to include incident number, date, address, call type, time received, time dispatched, units dispatched, en route times, arrival times, clear times, and in station times. If CAD data is not available, the equivalent data will need to be assembled into an Excel document.

- NEMSIS data from EMS patient care reports, removing any patient identifiers.

Review of this above information serves as “homework” before the first series of meetings with fire department and city officials. It also tells us about data availability. Some of this data will be collected during the course of the study if not readily available at the triage visit.

### Task 3: Initial Site Visit and Triage of Issues

**Personnel:** Cohen and Dyar

After reviewing the initial background information, we will conduct a two-day triage of issues visit. The project team will meet first with the township leadership and emergency
services officials, including the township manager, EMS chiefs, EMS medical director, and other career and volunteer public safety officials. We would also like to meet with planning officials to get a better idea of future expectations.

The main purposes of our visit are to become familiar with EMS aspects in Palo Alto, and to bridge the gaps between the fire and EMS portions of the study. We conclude our visit with a meeting between TriData’s EMS researcher, and the township project EMS team to debrief the visit and to verify any details concerning the project.

### Task 4: Evaluate Current Status of EMS in Palo Alto

| Personnel: | Cohen and Dyar |

We will perform a comprehensive, systematic evaluation of all aspects of EMS starting with the 911 system and dispatch (including Medical Priority Dispatch), continuing with EMS administration and operations, and also including hospitals, and support organizations. Our evaluation will include interviews, review of documents, and meetings with key leaders of appropriate organizations.

Our assessment will include meetings with County EMS officials, medical directors, healthcare administrators, labor leaders, and other participants to assure that each interested party has an opportunity to provide input. These meetings will be similar to those we held during our State of New Jersey, Southwest Lee County, Florida, and other studies.

Another aspect of our evaluation will include as assessment of between 5 and 10 local EMS systems, comparing them to the current Palo Alto model. This will include operational measures, clinical proficiency, and financial perspectives.

After gathering the data, we will make appropriate conclusions and recommendations. These initial recommendations will focus on any immediate needs that the City of Palo Alto

### Task 5: Perform Risk and Demand Analysis

| Personnel: | Weisner |

Our analysis will be a continuation of the work began during the fire suppression phase.

Based on the information gathered above, TriData will:

- Identify trends affecting fire and emergency protection in the township, including population growth, demographics, and risk.
- Analyze trends in the number and size of, EMS first responder, and other incidents in the past 5 years.
- Analyze incident reports or dispatch data to identify the run frequency by area of the township and by EMS agency.
Use statistical extrapolation and expert judgment regarding the factors of influence to develop projections of future demand for EMS calls, and other rescue incidents over the next 10 years.

Convert the demand estimate to an estimate of workload by unit and location.

The future demand for service is the product of demand per capita and population served. One needs to consider both elements in projecting demand, not just increase in population. We estimate future demand in two ways to form an envelope of projections. The high estimate projects the trend in demand per capita, multiplied by the projected population for each year. The low estimate assumes that per capita demand will remain about at its current level, and that demand will therefore be approximately proportional to population growth.

We project trends by type of call. We disaggregate demand estimates by area of the township, where possible. We consider the types of high-hazard occupancies that exist but may not have had any serious incidents, and the hazards that are likely to be built in the near future. The results of this analysis are compared to the existing capabilities to determine present unmet needs, and projections on when additional resources might be needed. The results of this task will be used in the EMS station location, EMS unit, and staffing analysis.

We will consider the degree to which demand for service needs vary throughout the township. We use township planning projections for growth in population, business, and any new risks expected to be introduced in the next decade.

TriData analysts will discuss with the City the current response time goals in light of national standards such as NFPA. We will consider the desired goals but also what is feasible and affordable. Where appropriate we will indicate the costs to meet national standards, and any evidence in terms of fire injuries, deaths, and dollar loss that the current system is or is not posing a problem.

Response times includes call processing and dispatch time, time to turnout, and the drive time. We will analyze the actual response data for the past 5 years. We will compute the average response times overall and by area of the township, and the cumulative frequency distribution of response times or fractile response times (i.e., the percent of calls responded to in 4 minutes, 6 minutes, 8 minutes, etc.). We review response times by area of the township and by type of call (EMS first response, and rescue). This is based on the existing fire response data, and assumes it is available in machine-readable format.

We consider not only response times for first-due units, but also second-in times and the time needed to assemble an adequate force for different types of risks. We consider simultaneity of calls and the availability of back-up resources. We consider how demand varies by area of the city, time of day, and day of week. This response time analysis is applied to the operational analyses where the alternatives are evaluated.
Proposal • City of Palo Alto, CA
Emergency Medical Services Add-on

TriData will also evaluate current automatic and mutual aid agreements. These agreements are important in determining where station locations and service will be needed. We will identify weak areas and suggest ways to improve cooperation as necessary.

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<th>Task 6</th>
<th>Develop a Master EMS Plan</th>
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We will develop an EMS master plan to include each major component of the EMS process. This includes designing a service model, staffing, capital expenses, and quality management. The plan will be presented in phases, and include specific milestones and time goals.

We will base our recommendations based on quantitative and qualitative data, political considerations, and finances. We will create a suggested timeline for implementation based on realistic expectations. Our recommendations will also consider legislative requirements that are often challenging in California.

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<th>Task 7</th>
<th>Financial Considerations</th>
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TriData firmly believes that financial considerations are an integral part of any recommendations, and that they do not stand alone. Due to economic constraints and the complexity of the township EMS system, we feel that in this case, a separate section is warranted. It is often difficult to appreciate the true cost-benefit of a specific EMS model, but we have the experience to understand the nuances of these financial challenges. For example, in Orange County, FL, we showed how the County assuming additional services could increase revenues without increasing taxes. Conversely, we showed in Southwest Florida, that local jurisdictions would not financially benefit from providing full EMS service. We cite these opposing examples to emphasize that we provide a professional, honest, thorough approach that is tailored toward our customer, and not the views of a particular organization.

Our financial evaluation will be based on models including: NFPA 1710, the American Ambulance Association, the Center for Public Safety Excellence, and the Commission on Ambulance Accreditation. These models are used only as guidelines, because our recommendations are tailored to our client’s needs.

TriData’s financial recommendations will include human resource needs, capital projects and equipment, and projected revenue possibilities. In many cases, services can be increased and costs reduced by consolidation of equipment and services or combining delivery profiles.

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<th>Task 8</th>
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TriData Division,
System Planning Corporation
As noted in the RFP, by mid-December TriData will submit to the project manager a draft report for review by appropriate personnel. We ask that each reviewer provide comments, questions, corrections, and suggestions that our project team can incorporate into the final report. Prior to sending any draft, our projects go through a rigorous corporate review process, personally conducted by Project Manager Stephen Brezler, and President Phil Schaenman. Our staff will be sure that even our draft products are of high quality.

In order to keep within timelines, and control costs, we ask that all reviews should be sent to the township project manager for collation. The township should send the review to TriData’s project manager.

The draft report will contain the deliverables requested in the scope of work including:

- Overview of the City’s EMS System
- Identified Components and Best Practices of EMS Systems
- Comprehensive Performance Analysis
- Gap Analysis
- 5-10 Year EMS Master Plan

The above deliverables can be created as separate documents. This will be agreed upon between the City and TriData project managers.

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<th>Task 9:</th>
<th>Final Report</th>
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After receiving comments on the draft report, we will make final changes, perform a final edit, and submit the final report by 2011. We will present the findings of the study at six different forums decided by the township. The presentations will include ample time for questions and answers with a PowerPoint presentation of the study, major findings, and recommendations. For economic reasons, we wish to complete these presentations during one visit.