City of Palo Alto (ID # 8530)

City Council Staff Report

Report Type: Action Items **Meeting Date: 10/16/2017**

Summary Title: Fire Deployment Changes & Amendment to the Table of Organization & Budget Amendment

Title: Fire Department Deployment Changes and the Conclusion of Meet and Confer With IAFF (International Association of Firefighters) Related to Impacts From the Stanford Fire Contract Revenue Reduction; Approve a Budget Amendment in the General Fund; and Approve an Amendment of the Table of Organization by Eliminating 7.0 Firefighter and 4.0 Apparatus Operator Positions

From: City Manager

Lead Department: Fire

Recommendation

Staff recommends that the City Council:

1. Amend the Table of Organization by eliminating 4.0 FTE Apparatus Operators and 7.0 FTE Firefighter (Paramedics) positions;
2. Amend the FY 2018 Appropriation Ordinance for the General Fund by
    a. Increasing the Fire Department appropriation in the amount of $70,000;
    b. Decreasing the General Fund Budget Stabilization Reserve in the amount of $70,000.
3. Acknowledge completion of the meet and confer process with IAFF over impacts related to the reduction in Stanford Fire Contract revenue.

Executive Summary

If approved, the actions recommended in this report will implement service delivery deployment changes in the Fire Department realizing $1.5 million in annual savings and reducing daytime staffing by one position and nighttime staffing by three positions. This savings will assist in partially offsetting lower reimbursements from Stanford University for fire services. The proposed deployment saves approximately $1.5 million annually, adds a fourth ambulance, keeps all fire stations open and staffed 24 hours per day, results in no layoffs and is consistent with the performance standards of the department. The proposed model is responsive to service demand levels that increase during the daytime and decrease in the nighttime. It is anticipated that all aspects would be implemented no later than January 2018.

In July 2016, the City of Palo Alto (City) began formal meet and confer sessions with the International Association of Firefighters (IAFF) due to a significant revenue reduction from the Stanford Fire Contract.

A savings of $1.3M annually was planned in the Fiscal Year 2018 Budget to off-set some of the revenue loss from Stanford University. On August 8, 2017, the City and IAFF reached a verbal understanding and conclusion on impacts and mitigations related to deployment changes. While the IAFF will not agree to support cutting positions, they acknowledge that the City has met its legal requirement to meet and confer. On August 14, 2017, the Council directed the City Manager to formalize the meet and confer understanding and conclusion with IAFF.

Background

Palo Alto Fire Department provides fire rescue suppression services, emergency medical services (EMS), as well as ambulance medical services to the City of Palo Alto as well as Stanford University. Current deployment includes 27 firefighters for the entire 24-hour service delivery period (three scheduled shifts), regardless of the demand for services.

Stanford University contracted with the City in October 1976 to provide all risk services including fire, rescue, emergency medical services (EMS) and ambulance transportation to the Central Campus and Stanford Linear Accelerator Center (SLAC) under a 50-year agreement. In May 2012, and at Stanford's request, the SLAC fire station closed and protection was contracted to the Menlo Park Fire District.

Stanford initiated discussions with the City to reduce costs associated with operating the Central Campus Fire Station. In October 2013, Stanford issued a two-year contract cancellation notice. Stanford simultaneously sought alternative public and private fire service providers through a request for proposal while continuing to negotiate with the City. By the contract cancellation in October 2015, Stanford had not secured another provider and asked the City to extend the contract for a series of short term extensions while both parties pursued mediation and continued negotiations. The City and Stanford have agreed to interim agreements at approximately 75 percent of the original contract terms, reflecting a $2 million reduction in reimbursements for services to the City in FY 2017. In recognition of this financial environment, the City looked to changes in the cost to deliver service to assist in offsetting this loss in revenue. The FY 2018 Adopted Budget included a $1.3 million reduction in appropriated expenses in recognition of these efforts and committed to returning to the City Council once agreement was reached among the impacted parties to articulate the implications of such a reduction in cost.

Current Service Delivery Deployment

The City of Palo Alto Fire Department operates from six stations, including one station on Stanford University campus, as well as a seventh seasonal station at Foothills Park that is staffed on high fire danger days (Station 8). Each station operates a full time engine and the fire system supports two dedicated ambulances, a full time ladder truck, as well as wildland equipment. This results in 27 positions staffing these various apparatus 24 hours a day ("daily positions"). Approximately two-thirds (2/3) of the Palo Alto Fire Department calls for service occur between 8:00 am and 8:00 pm.

Figure 1. Current Deployment

Station Number	Address	Assigned Equipment	Daytime Staffing (8AM to 8PM)	Nighttime Staffing (8PM to 8AM)
Station 1	301 Alma	Engine, Ambulance	5	5
Station 2	2675 Hanover	Engine, Ambulance	5	5
Station 3	799 Embarcadero	Engine	3	3

Station 4	3600 Middlefield	Engine, Ambulance (Cross-Staffed 24 Hr)	3	3
Station 5	600 Arastradero	Engine, Wildland Engine (Cross-Staffed 24 Hr)	3	3
Station 6 (Stanford)	711 Serra	Engine, Battalion Chief, Ladder Truck	8	8
		TOTAL	27	27

Under California labor laws, the City must meet and confer in good faith with the labor group, IAFF, over bargainable impacts defined under the Meyers-Milias-Brown Act (MMBA). IAFF is offered extensive opportunities to respond and identify impacts related to intended changes. MMBA allows for lengthy question and answer periods allowing the IAFF to seek clarification, request data and public records, and to propose alternative solutions for impacts within their bargaining unit.

Discussion

Since July 2016, the City conducted 14 meet and confer sessions with the IAFF. The City sought to identify expenditure reductions and cost recovery opportunities as a result of revenue reductions from the Stanford Fire Contract. The City also sought to continue to meet its service performance goals through the identification of efficient and alternative delivery models. The goals guiding these efforts include:

a. Meeting adopted performance standards for emergency calls:
    - Eight minutes or less, 90 percent of the time in urban and suburban service areas
    - 20 minutes or less, 90 percent of the time in rural service areas of the Palo Alto Foothills
b. Ensuring risk reduction (fire & life safety) inspections, mandated training, community service, and administrative assignments can be completed
c. Strategically planning for future call growth
    - Emergency medical services call volume continues to increase due to larger daytime populations and community members aging into high risk demographics for EMS utilization
d. Maintain at least one paramedic on every ambulance, fire engine, and ladder truck.

At the conclusion of the meet and confer process, the parties understand that the revised deployment model will continue to maintain at least one paramedic on every fire engine, ladder truck and ambulance. Below provides a summary of the major deployment changes as recommended by the staff. The following sections in this report discuss in further detail these changes including an understanding of how they were arrived at.

- Reduce daily staffing on the ladder truck from 4 personnel to 3 personnel
- Cross-staff an engine apparatus and an ambulance apparatus at three of the six stations allowing personnel to respond on either apparatus depending on the call for service type
- Four ambulances staffed during peak hours (8:00 am to 8:00 pm daily), increasing from the current level of three
- The apparatus assigned to calls will be based on physical proximity to the needed call.

In looking at alternative deployment models, the Fire Department reviewed historical calls for service and modeled extensive scenarios through an analytical tool to develop a recommended solution. Approximately two-thirds of the Palo Alto Fire Department (PAFD) calls for service occur between 8:00 am and 8:00 pm. The proposed model deploys 26 firefighters, EMTs and Paramedics each day from 8:00 am to 8:00 pm, when the majority of calls for service occur, and 24 firefighters each night from 8:00 pm to 8:00 am when the service demand is lowest. It ensures that all fire stations remain open and staffed 24 hours per day, is expected to perform as well as the old model, and results in no layoffs as PAFD currently has 15 vacancies.

One innovative approach already used in the PAFD, but expanded under this proposed deployment is to cross-staff apparatus. Cross-staffing is a way to increase service to the community by using one crew of three firefighters to staff multiple emergency apparatus. The crew uses the apparatus most appropriate for the call and leaves the other apparatus at the fire station or another location.

The table below illustrates the proposed changes by station. The bold indicates a change from the current deployment model outlined earlier in this report. Following the chart is additional details on the

Figure 2. Proposed Deployment
BOLD: Indicates a change

Station Number	Address	Assigned Equipment	Daytime Staffing (8AM to 8PM)	Nighttime Staffing (8PM to 8AM)
Station 1	301 Alma	Engine, ***Ambulance (12 Hr Overtime), Battalion Chief***	6	4
Station 2	2675 Hanover	Engine, ***Ambulance (Cross-Staffed 24 Hr)***	3	3
Station 3	799 Embarcadero	Engine, ***Ambulance (Cross-Staffed 12 Hr PM***)	3	3
Station 4	3600 Middlefield	Engine, Ambulance (Cross-Staffed 24 Hr)	3	3
Station 5	600 Arastradero	Engine, Wildland Engine (Cross-Staffed 24 Hr)	3	3
Station 6 (Stanford)	711 Serra St	Engine, ***Rapid Response Vehicle, Ambulance,*** Ladder Truck	8	8
		TOTAL	26	24

specific changes and analysis utilized to come to this proposed deployment methodology.

Community Risk Analysis, Standards of Cover, Quantitative Prediction Analysis

The PAFD has undertaken an extensive and detailed analysis of community risk, the resources needed to mitigate the risk. This data-driven and objective planning process includes:

a. Measuring and prioritizing the fire, rescue and emergency medical services risks in the community
b. Evaluating and prioritizing the PAFD's resources to manage or reduce the identified community risks
c. Identifying and establishing objective prevention and deployment strategies to meet established performance standards and adopted response policies
d. Ensuring a safe and effective response force for fire suppression, emergency medical services, and specialty response situations
e. Annually evaluating and validating crew size and configuration, effective response force performance on all types of incidents and overall system performance
f. Informing policy makers, government leaders, and the public about the community's risks and capabilities of the fire department to operate within the available resources
g. Modeling system performance using advanced predictive data analytics that includes call volumes, locations of calls, and traffic patterns under a variety of unique resource deployments.

Demand for fire and EMS services are directly related to the size of the population. There is a strong correlation between daytime and nighttime populations and the number of requests for fire and EMS services. The demographics for fire are influenced by the age of buildings, rentals versus ownership, maintenance of the buildings and the demographics of the occupants. EMS is very much driven by age, with young and old populations utilizing emergency medical services much more frequently.

In Palo Alto and Stanford, the number of fire incidents has declined 32 percent since 2007. Residential structure fires have decreased by 82 percent in the same period. This is primarily a result of strong and effective building codes especially fire sprinklers, new construction practices that incorporate fire resistive materials, and fire safe appliances. In addition, public education has increased awareness among occupants and property owners regarding fire prevention and fire safe practices.

EMS activity on the other hand has increased 36 percent and ambulance transports 52 percent since 2007. Much of this can be attributed to aging populations and the expanded awareness of the 9-1-1 system. A recent analysis showed that Palo Alto residents ages 65 and over account for 17 percent of the population, but account for nearly 50 percent of the ambulance transports to hospitals. The City of Palo Alto has been a leader nationally in providing pre-hospital emergency medical services.

More recent advances in communication and monitoring technology, have contributed to the growing use of the 9-1-1 system. 9-1-1 provides an almost instantaneous link to first responders and quick response. The scope and quality of services provided by the PAFD is acknowledged in the annual National Citizens Survey as one of the top rated city service.

Ambulance Staffing

Currently the PAFD staffs three ambulances, two dedicated and one cross-staffed unit 24-hours per day, 7 days per week. The two dedicated ambulances are staffed with a crew of two firefighter/paramedics full time with no cross-staffing. The third ambulance, a cross-staffed ambulance, is staffed with a crew of three who can respond on either the ambulance or fire engine. Cross-staffing both the ambulance and fire engine is a way to increase efficiency and serve the community by using one crew of medical personnel and firefighters to staff multiple fire apparatus. Based upon the call, the dispatchers and emergency responders decide which apparatus the crew takes to the call.

The deployment change also modifies staffing for one of the department's ambulances from 8:00 pm to 8:00 am, when calls for service are at their lowest. In the evening, the ambulance would be cross-staffed by an engine company. This new night staffing model (8:00 pm to 8:00 am), provides a total of 24 firefighters on duty each night.

The new plan proposes staffing four ambulances 24-hours per day, 7 days per week. This is one more than the old deployment model.

Daytime: From 8:00 am to 8:00 pm, two ambulances would have dedicated staffing as is the current practice. Two additional ambulances would be cross-staffed by two fire engine crews.

Nighttime: From 8:00 pm to 8:00 am, when the call volume is the lowest, one ambulance would have dedicated staffing and three crews would cross-staff an ambulance and engine.

The last modification would extend the PAFD's practice of staffing all ambulances with at least one paramedic and one Emergency Medical Technician (EMT).

Truck Staffing

Under the proposed deployment, there will be one less firefighter on duty from 8:00 am to 8:00 pm, 26 under the proposed deployment, compared to 27 under the old. This is accomplished by staffing the PAFD's ladder truck with three firefighters instead of four. This returns to the staffing configuration used on the ladder truck for decades in the PAFD. In 2013, the crew size increased from three to four firefighters.

This ladder truck staffing modification is based upon a community-wide risk assessment, critical task analysis, and effective response forces needed to mitigate known hazards. Other factors considered include the emergency call volume and types of calls for the ladder truck. Finally, the City maintains and supports automatic aid agreements with neighboring jurisdictions that immediately dispatch multiple ladder trucks to high risk, low frequency incidents. PAFD's primary automatic aid partner staffs their ladder truck with three personnel as well.

Stanford Staffing

Under the proposed deployment, a total of eight personnel staffing four apparatus will be located at the Stanford Fire Station. This includes one ambulance, the ladder truck, one fire engine and a smaller unit known as a rapid response vehicle (RRV). All units are available to respond to calls for service throughout the City of Palo Alto and Stanford.

The RRV is a new and innovative EMS and fire apparatus, smaller than a municipal engine and slightly larger than a full size pick-up truck, designed to maneuver on narrow streets in the core campus area and other densely populated areas in downtown Palo Alto. The RRV contains medical equipment to function at the paramedic level. It also has a small pump and water tank designed to extinguish minor fires. The RRV responds to lower level and non-emergent EMS calls, small fires, service calls, and fire and supervisory alarms on Stanford Campus. A minimum of two personnel, one of whom is a paramedic, will staff the RRV. The crew assigned to the engine cross-staffs the fire engine and RRV.

Timeline

The implementation process will begin immediately after receiving Council Authorization to amend the table of organization and acknowledge completion of the meet and confer process. Fire Department

staff will work to make the appropriate changes to dispatch systems, conduct any staff alignment and station assignments with IAFF, and consult with neighboring fire jurisdictions to review mutual and automatic aid agreements. All proposed changes are anticipated to go into effect no later than mid-January 2018.

Resource Impact
The FY 2018 Adopted budget reflected anticipated reductions in expenses of $1.3 million as a result of these deployment changes. Although this model is anticipated to save $1.5 million, the current adopted reduction of $1.3 million is anticipated to be appropriate for FY 2018 due to the phasing of the implementation. The ongoing reduction in costs, namely the elimination of 11 full time positions will be included in the development of the FY 2019 budget.

In order to implement these changes, some additional costs are anticipated. Additional uniform equipment is recommended to ensure turnout-times of cross-staffed crews are not delayed by moving personal protective equipment between two different apparatus. The one-time cost associated with this is anticipated to be $70,000 with ongoing costs estimated at $20,000 annually.

This report, requests additional funds of $70,000 from the General Fund Budget Stabilization Reserve and the ongoing funding will be evaluated as part of the FY 2019 budget with the goal of finding net-zero adjustments to absorb these costs in the Department and only adjustments brought forward as needed.

The reduction in the BSR would result in a further reduction of the Budget Stabilization Reserve below the City Council approved 18.5 percent, however, it is anticipated that sufficient excess revenues and additional expense savings from FY 2017 will offset this once the FY 2017 financials are closed. Therefore, it is staff's intent to restore the BSR to City Council approved target of 18.5 percent. If the actions recommended in this report are approved, in total approximately $823,000 will have been used from the BSR to date in FY 2018, primarily for the janitorial services contract approved in August 2017.

In addition, the City in coordination with Stanford will need to design and purchase a new rapid response vehicle. It is expected that Stanford will pay the full cost of the apparatus as part of the new agreement. In the interim, the PAFD can modify an existing fire apparatus for a short-term and temporary solution.

Environmental Impact
This report is not a project for the purposes of the California Environmental Quality Act. Environmental review is not required.

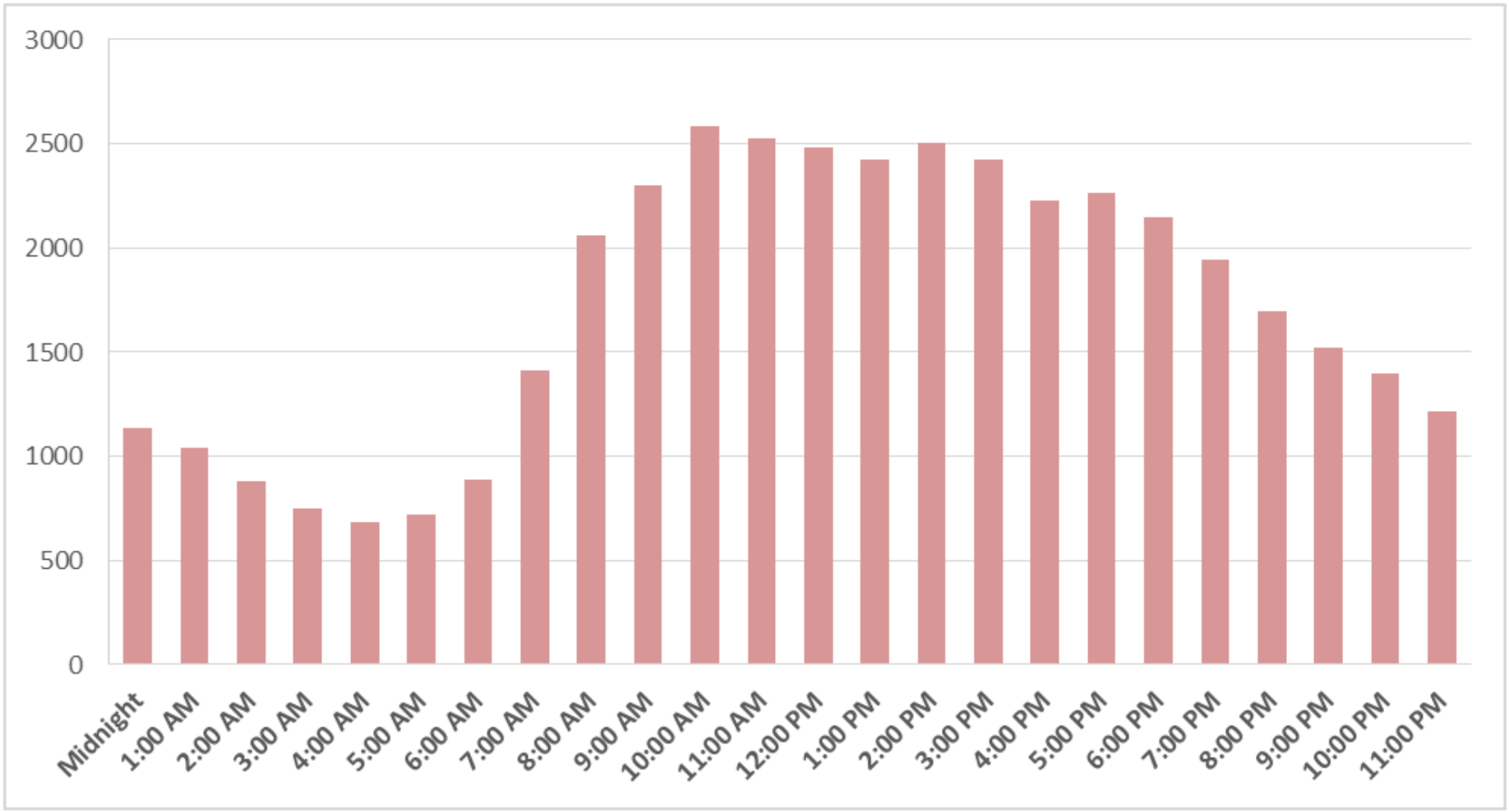
Attachments
- Attachment A - Data used to determine System Performance and Design during the Meet and Confer Process
- Attachment B – Unit Hour Utilization (UHU): Predicted Overall Utilization of new deployment, data analyzed May 2017

Attachments:
- Data used to determine System Performance and Design during the Meet and Confer Process October 16 2017
- May 2017 UHU Analysis

Data used to determine System Performance and Design during the Meet and Confer Process

Time of Day Workload

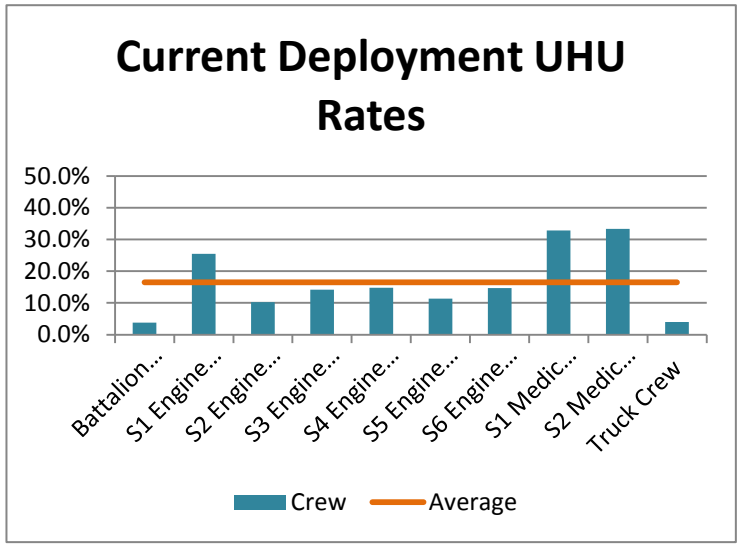
The time analysis that shows significant variation is response activity by hour of day. Response workload directly correlates with the activity of people, with workload increasing during daytime hours and decreasing during nighttime hours as shown in the following figure. Incident activity is at its highest between 8:00 AM and 8:00 PM

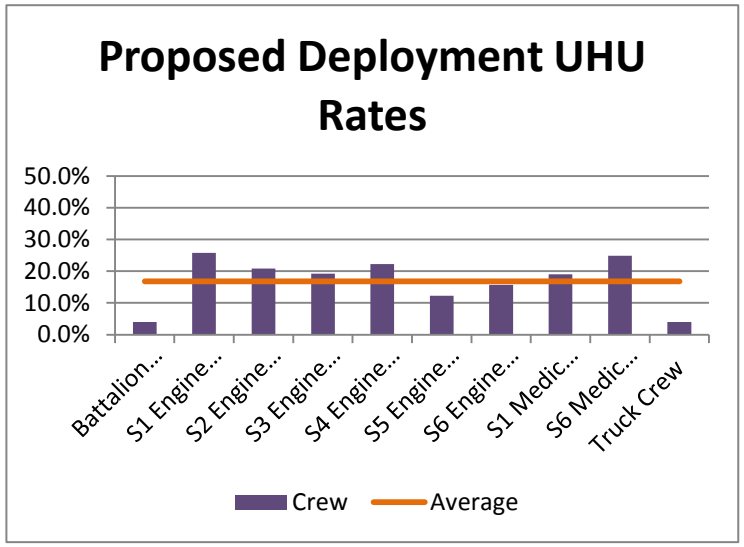


Unique Incidents	Total	2016	2015	2014	2013	2012
Midnight	1135	233	241	225	227	209
1:00 AM	1043	213	219	205	196	210
2:00 AM	881	184	172	177	169	179
3:00 AM	747	163	153	150	137	144
4:00 AM	687	153	134	163	112	125
5:00 AM	717	149	156	139	139	134
6:00 AM	891	216	191	174	156	154
7:00 AM	1410	293	321	288	254	254
8:00 AM	2060	439	435	405	399	382
9:00 AM	2301	525	452	445	458	421
10:00 AM	2583	543	572	504	449	515
11:00 AM	2527	557	532	507	454	477
12:00 PM	2480	531	526	479	501	443
1:00 PM	2425	508	500	482	477	458
2:00 PM	2503	530	502	481	474	516
3:00 PM	2426	533	528	471	456	438
4:00 PM	2228	475	467	420	458	408
5:00 PM	2263	457	485	480	421	420
6:00 PM	2147	453	460	423	424	387
7:00 PM	1947	446	400	354	391	356
8:00 PM	1698	391	384	320	320	283
9:00 PM	1521	329	363	292	252	285
10:00 PM	1396	285	296	263	263	289
11:00 PM	1219	261	265	247	231	215
Total	41235	8867	8754	8094	7818	7702

Deployment Change Analysis on Unit Hour Utilization Rates

The charts below show the unit hour utilization rates comparing the deployment of resources as of June 2017, and the proposed deployment of resources proposed by the City. Data was generated from Code3 predictive analytic software, utilizing historical data from the computer aided dispatch system.





Unit Hour Utilization Rates		
Crew	**Current Deployment**	**Proposed Deployment**
Battalion Chief	3.8%	4.0%
S1 Engine Crew	25.5%	25.8%
S2 Engine Crew	10.2%	20.8%
S3 Engine Crew	14.1%	19.2%
S4 Engine Crew	14.8%	22.2%
S5 Engine Crew	11.3%	12.3%
S6 Engine Crew	14.7%	15.7%
S1 Medic Crew	32.8%	19.0%
S2 Medic Crew	33.3%	N/A
S6 Medic Crew	N/A	24.9%
Truck Crew	4.0%	4.0%

Deployment Change Analysis on time committed to calls for service (stated in hours per 24-hour shift)

PROPOSED DEPLOYMENT (HOURS PER 24-HOUR SHIFT)

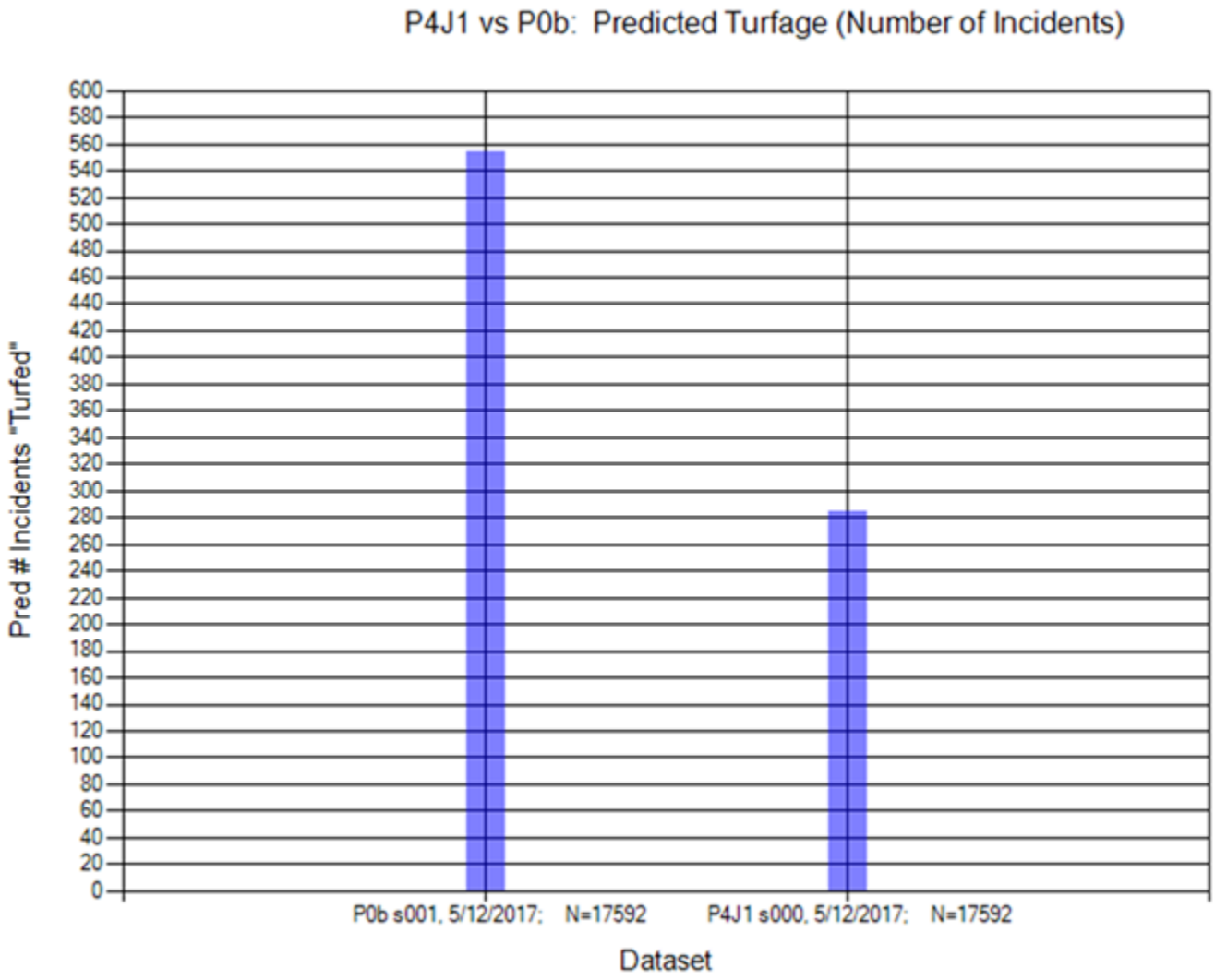
Sorted high-to-low	PROPOSED	NOT DEPLOYED (PER 24 HRS)	CURRENT	NOT DEPLOYED (PER 24 HRS)	CHANGE IN DEPLOYED TIME
S1 Engine Crew	**6.19**	**17.81**	**6.12**	**17.88**	**0.07**
S2/S6 Medic Crew*	**5.97**	**18.03**	**7.99**	**16.01**	**-2.02**
S4 Engine Crew	**5.33**	**18.67**	**3.55**	**20.45**	**1.78**
S2 Engine Crew	**5.00**	**19.00**	**2.46**	**21.54**	**2.54**
S3 Engine Crew	**4.60**	**19.40**	**3.39**	**20.61**	**1.21**
S1 Medic Crew**	**4.57**	**7.43**	**7.88**	**16.12**	**-3.31**
S6 Engine Crew	**3.77**	**20.23**	**3.52**	**20.48**	**0.25**
S5 Engine Crew	**2.94**	**21.06**	**2.72**	**21.28**	**0.22**
Average	4.80 hrs	17.70 hrs	4.70 hrs	19.30 hrs	0.09 hrs

***S2 Medic Crew is the current model. S6 Medic Crew is the proposed model.**

****S1 Medic Proposed is based on a 12-hour shift. Current is based on a 24-hour shift.**

County Ambulance handling EMS calls in Palo Alto (Predicted Trufage)

Turfage is a term used to describe when the Palo Alto Fire Department has committed all ambulances to calls for service and County Ambulance must respond to handle the subsequent emergency medical services call.



Key

P0b s001: Current deployment

P4J1 s000: Proposed deployment

Call Concurrency

When evaluating the effectiveness of any resource deployment plan, it is necessary to evaluate the workload of response units to determine to what extent their availability for dispatch is affecting the response time performance. In simplest terms, a response unit cannot make it to an incident across the street from its own station in four minutes if it is unavailable to be dispatched to that incident because it is committed to another call. Concurrency looks at workload to examine the number of times multiple incidents happen within the same time frame in each system area. This is important because concurrent incidents can stretch available resources and extend response times.

Incident Concurrency (CY 2016)

Number of Concurrent Incidents	Count	Percentage of Total
1	3787	46.74%
2	2759	34.05%
3	1196	14.76%
4	301	3.71%
5	51	0.63%
6	7	0.09%
7	2	0.02%

Drawdown Summary: Fire Engines (CY 2016)

Number of Concurrent Incidents	Count	Percentage of Total
0	5326	64.58%
1	7958	25.98%
2	3578	7.38%
3	1087	1.55%
4	247	0.38%
5	65	0.11%
6	23	0.01%

Drawdown Summary: Ambulances (CY 2016)

Number of Concurrent Incidents	Count	Percentage of Total
0	3269	58.49%
1	5566	29.31%
2	3204	9.34%
3	1190	2.28%
4	340	0.49%
5	83	0.07%
6	16	0.01%
7	2	0.00%

Response Time Performance

Response time is defined as that period between notification of PAFD personnel by the dispatch center that an emergency is in progress until arrival of the first fire department response unit at the emergency. This key performance measure is the total of turnout time (the time it takes personnel from notification to "wheels rolling") and travel time (the time it takes to drive to the call).

Emergency Medical Service Calls

	2016	2015
Count	4108	3957
Average Response Time	0:05:04	0:05:13
90% Percentile	0:07:24	0:07:36

Confirmed Structure Fire

	2016	2015
Count	6	2
Average Response Time	0:05:16	0:05:17
90% Percentile	0:06:17	0:05:57

Confirmed Full First Alarms (larger fires)

	2016	2015
Count	3	2
Average Response Time	0:04:42	0:03:54
90% Percentile	0:05:12	0:04:27

Motor Vehicle Accidents

	2016	2015
Count	293	236
Average Response Time	0:05:29	0:05:37
90% Percentile	0:09:16	0:08:58

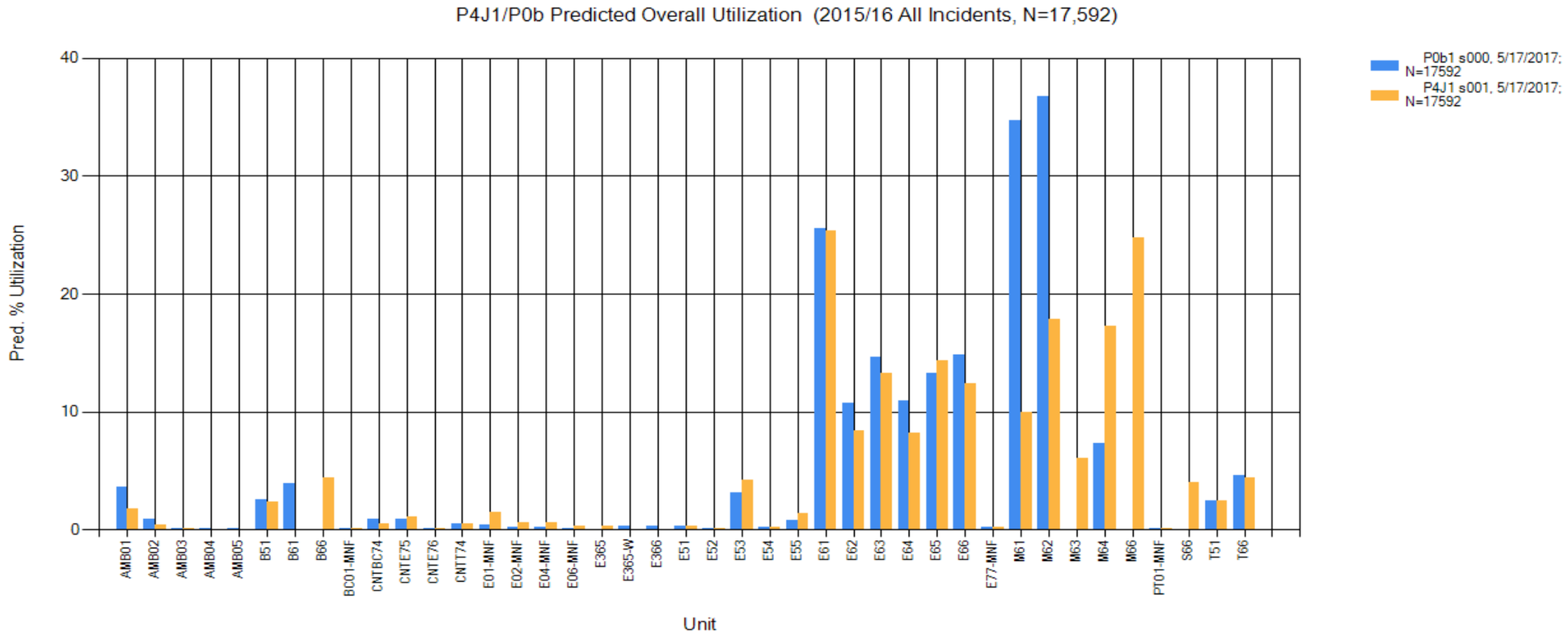
Hazardous Materials Incidents

	2016	2015
Count	12	13
Average Response Time	0:05:54	0:06:25
90% Percentile	0:07:52	0:10:49

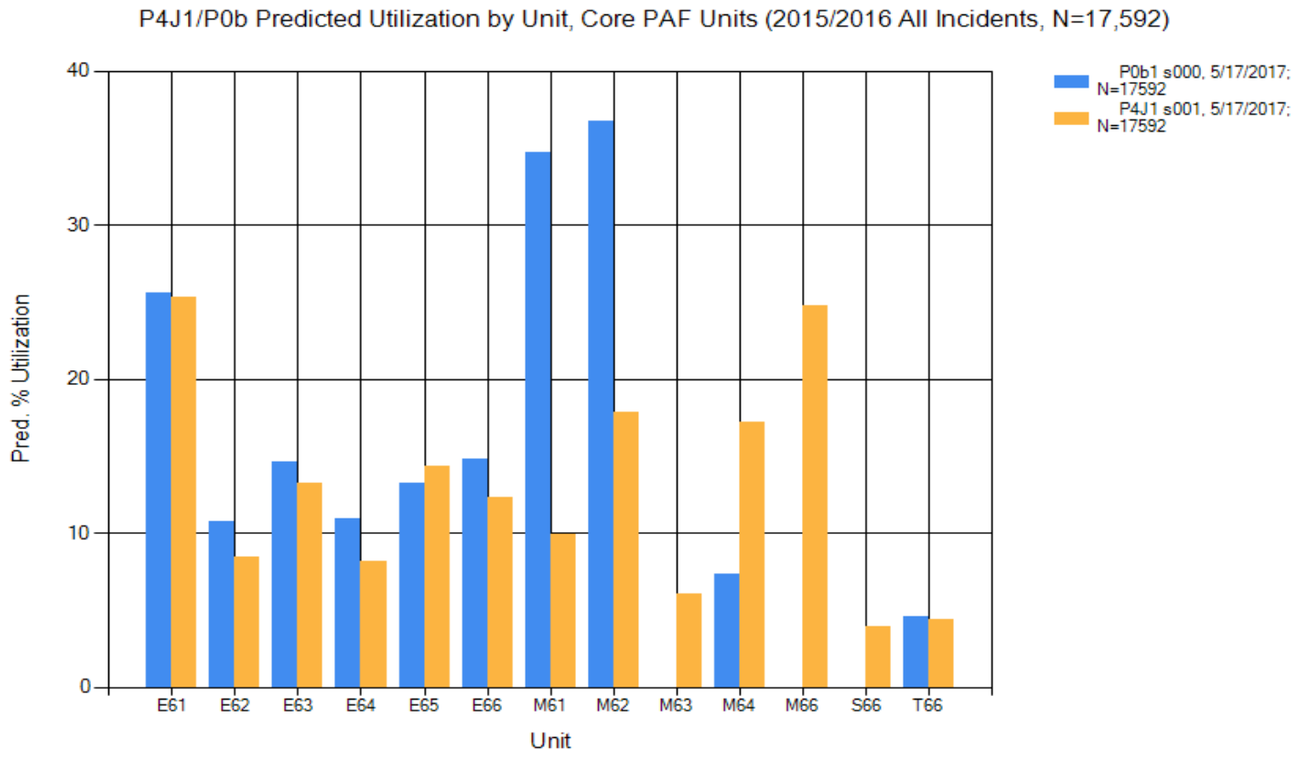
All incidents where there was a single engine responding (EMS, car & small fires, fire alarms)

	2016	2015
Count	7049	6762
Average Response Time	0:05:31	0:05:39
90% Percentile	0:08:21	0:08:22

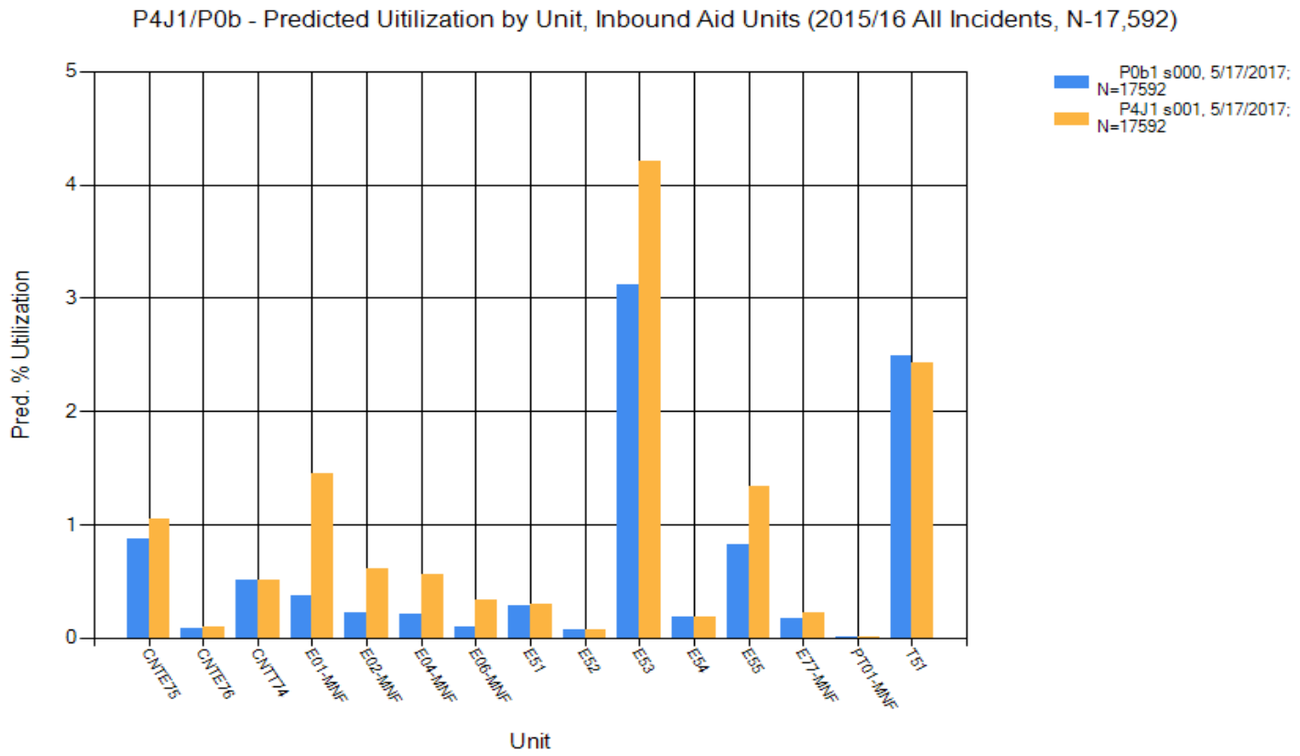
Overall Utilization Comparison -- All simulated units



Utilization Comparison - PAF Core Units



Utilization Comparison - Autoaid Units



Predicted Utilization -- Medical "Turfage"