

**ACTION ITEM
BOARD OF SUPERVISORS**

DATE: August 18, 2009

TO: Board of Supervisors

FROM: J. Robert Brown, Jr.,
Fire & Rescue Chief 

ISSUE: Hazard Risk Analysis

STAFF RECOMMENDATION: N/A

BUDGET IMPACT: N/A

ATTACHMENTS: (3)

[1] Background Report [] **Reso/Ord/Proc #**

[2] PowerPoint [] **Reso/Ord/Proc #**

[3] Maps [] **Reso/Ord/Proc #**

REVIEW: [X] County Administrator's Office 

[] **Consent Agenda**

[] **Other Business**

[] **Public Hearing**

[] **Discussion Item**

[] **Presentation**

[] **Unfinished Business**

[X] **New Business**

PRESENTATION BY: J. Robert Brown, Jr., Fire & Rescue Chief

ELECTION DISTRICT: N/A

BACKGROUND REPORT

During the Fiscal Year 2010 Budget process, the Board allocated funds to the Fire and Rescue Department to allow career staffing for the deployment of two additional 24/7 Paramedic Ambulances. The expenses for the ambulances, equipment, etc. are being covered within the current line item allocations and by using reserve ambulances.

Many attempts have failed to create a “one size fits all” methodology for determining how many firefighters and what physical (stations) and mobile (apparatus) resources a community needs to assure the residents are adequately protected to address most emergencies. The unique characteristics of each community have defied efforts to create a simple solution. The position that has evolved is that one community’s fire and EMS risks and hazards cannot be compared to another, so standard solutions or methodologies cannot be overlaid from one community to another community.

Identifying a need for a tailored assessment process for a fire agency’s resources led to a joint effort between the International Association of City/County Management and the International Association of Fire Chiefs. A forum of these two groups, called the Commission on Fire Accreditation International, resulted in the creation of a formal and extensive self-assessment and accreditation process. One of the first steps in the self-assessment process is for each fire agency to complete a Standard of Cover study that identifies two essential areas of performance:

- Risks, Hazards and Value
- Appropriate response time and number of personnel needed to mitigate the effects of a variety of emergencies (structure fire, medical emergency, hazardous material, rescue, flood, etc.).

This assessment is a systems approach to addressing deployment issues, as opposed to a linear perspective. Many factors will be measured to create a comprehensive systems approach to analyzing deployment in order to thoroughly assess if a department pursuing accreditation is properly deployed to meet their community’s risks and expectations.

In the fall of 2005, the Fire and Rescue Department conducted a comprehensive RHAVE (Risk, Hazard and Value Evaluation) study to identify what elements within the County impact the safe and quality of life in our community. Once completed, a more in-depth Standards of Cover process was completed. The Standard of Cover (SOC) process has nine components. They include:

1. Existing Deployment
2. Risk Identification (RHAVE data)
3. Risk Expectations
4. Service Level Objectives
5. Distribution

6. Concentration
7. Performance Reliability
8. Historical Response Effectiveness
9. Overall Evaluation

From that process, three phases of Standards of Cover were developed presented to the Board in the April of 2006. These Phases include:

- Bronze Phase - Arrival at any emergency within the county in 8 minutes from the time of call with 90% compliance.
- Silver Phase - Includes Bronze Phase standard with stricter response time benchmarks for certain types of calls such as structure fires, cardiac arrest, drowning, etc.
- Gold Phase – Includes Bronze and Silver standards with the addition of stricter response time benchmarks based on RHAVE data. This would include target hazards, high risk facilities, at risk populations, high density areas, etc.

The current Standard of Cover standard being applied is:

- Bronze Phase - Arrival at any emergency within the County in 8 minutes from the time of call with 90% compliance.

In an effort to ensure the best possible deployment of the additional Paramedic Ambulance resources, the Fire and Rescue Department updated the Risk, Hazard Value assessment and evaluated the current deployment of resources, potential re-deployment of existing resources and deployment of the additional resources against our current Standards of Cover.

After an exhaustive assessment of several different deployment scenarios using the Standard of Cover process outlined above, the findings of the review indicated that the best possible deployment of the additional paramedic ambulances at this time is to place these units at Fire-Rescue Station 2 (Stafford) and Rescue Station 7 (White Oak). With the current deployment, 67% of the County's population is within a six-minute drive time. With the two new medic units at Fire-Rescue Station 2 and Rescue Station 7, 79% of the County's population will be within a six minute drive time (see scenario E in the PowerPoint).

The 12 new personnel authorized in FY2010 have been hired and they began their recruit training as a part of Recruit Class 4, which began on Monday, August 10th. Recruit Class 4 is expected to graduate in late November. As such, the two additional paramedic ambulances will be placed in-service in early December.

Staff will discuss the process and the findings during the presentation to the Board of Supervisors.

Fire and Rescue Department

Risk-Hazard Analysis Update

Resource Deployment



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Stafford County Fire & Rescue Department

Risks



Hazards



Value...



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**Stafford County
Fire & Rescue Department**

Standards of Care



8 minutes or less...



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**Stafford County
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Standards of Care

**Update
Advanced Life Support
Resource Deployment**



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Process

Static vs. Dynamic Modeling

- ✓ Review Medic Unit Demand
- ✓ Review System Performance
- ✓ Review ALS Coverage Footprint
- ✓ Study ALS Resource Deployment



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Demand

Unit ID	Station	Call Count	Percent of ALS Responses
Medic 4	Mtn. View	1329	17%
Medic 5	Brooke	1292	16%
Medic 6	Hartwood	1094	14%
Medic 10	Potomac Hillis	1508	19%
Medic 11	Falmouth	2103	27%
Volunteer Medic Units	All	527	7%

Call Data from January 1, 2009 – July 31, 2009



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Stafford County Fire & Rescue Department

Performance

Call Data From January 1, 2009 - July 31, 2009

Demand Zone	% of Calls > 10 mins
Company 1 - Falmouth	19%
Company 10 - Potomac Hills	2%
Company 12 - Berea	8%
Company 14 - Garrisonville	7%
Company 2 - Stafford	10%
Company 3 - Widewater	3%
Company 4 - Mountain View	4%
Company 5 - Brooke	4%
Company 6 - Hartwood	11%
Company 7 - White Oak	11%
Company 8 - Rockhill	12%
Company 9 - Aquia Harbour	9%



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ALST Footprint

Population Percentage by Demand Zone

Demand Zone	2007 Population	% of Population
Zone 1 - Falmouth	19719	16%
Zone 2 - Stafford	11498	9%
Zone 3 - Widewater	4494	4%
Zone 4 - Mt. View	6539	5%
Zone 5 - Brooke	2484	2%
Zone 8 - Hartwood	6895	5%
Zone 7 - White Oak	6971	5%
Zone 8 - Rockhill	7069	6%
Zone 9 - Aquia	18437	15%
Zone 10 - Potomac Hills	5822	5%
Zone 12 - Berea	12097	10%
Zone 14 - North Stafford	25075	20%
Total	127100	100%



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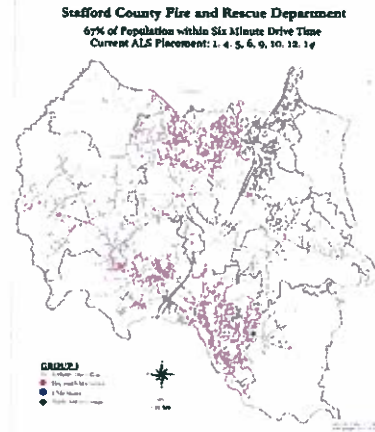
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ALS Footprint

**Scenario A
Current Deployment**
67% Population
within 6 minute drive time



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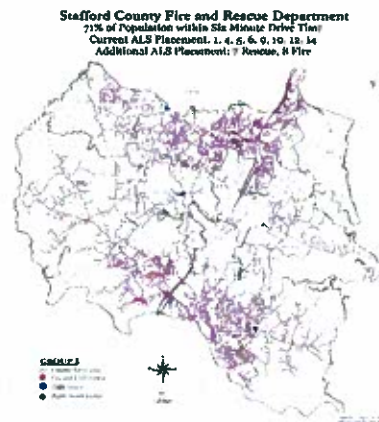
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Deployment

**Scenario B
New Deployment**
71% Population
within 6 minute drive time



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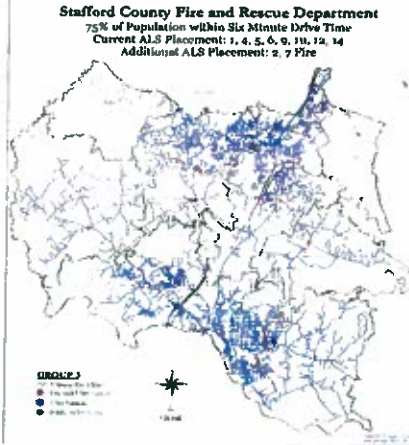
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Deployment

Scenario C
New Deployment
75% Population
within 6 minute drive time



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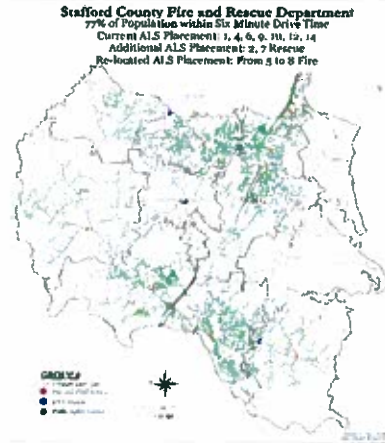
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Deployment

Scenario D
New and Existing Unit Re-Deployment
77% Population
within 6 minute drive time



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Deployment

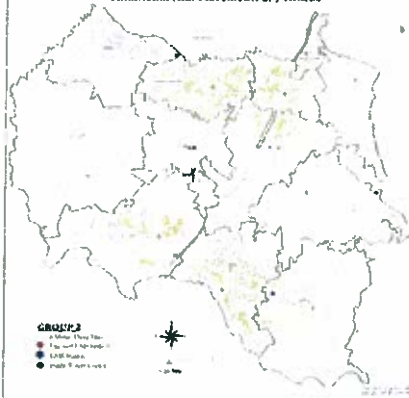
Scenario E New Deployment

79% Population
within 6 minute drive time



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Stafford County Fire and Rescue Department
79% of Population within Six Minute Drive Time
Current ALS Placement: 1, 4, 5, 6, 9, 10, 12, 14
Additional ALS Placement: 2, 7 Rescue



Fire and Rescue Department

Thank You



Questions ?



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