

MMA CONSULTING GROUP, INC.
41 WEST STREET
BOSTON, MASSACHUSETTS 02111
617-426-8049 617-357-8522 (FAX)

TO: Town of Brighton
FROM: Philip McLaughlin and Mark Morse
MMA Consulting Group, Inc
RE: Reexamination of BVA Deployment Recommendation
DATE: September 25, 2002

MMA Consulting Group, Inc. was retained by the Town of Brighton to reexamine its initial findings and recommendations relative to the proposed stationing and/or posting of ambulances at locations other than at Brighton Volunteer Ambulance's (BVA) Station at 1151 Winton Road South. The Town and BVA wish to further consider this option in striving to provide the most timely and cost-effective EMS response possible on an equal basis throughout the Town.

In MMA Consulting Group's report, entitled *West Brighton Fire Protection District and Town of Brighton Emergency Medical Services Study* (September 2001), we noted as two of our primary findings (findings #3 and #4) that:

3. *EMS calls throughout the Town of Brighton have increased, and the BVA "single station" response times are sometimes longer than recommended standards. Also, there are times when a mutual aid ambulance needs to respond because no local ambulance personnel are available. The Brighton Fire Department responds two to three times daily to EMS calls. There are two to four paid BVA responders on day-time duty (7:00 a.m. to 7:00 p.m.) with BVA but, at times, no personnel are available to handle simultaneous calls. Additional full-time personnel may be employed, and ambulances may be stationed in high demand areas at times. WBFD should run timely EMS first responder service in its area 24 hours a day, seven days a week, but can only be reasonably relied upon to do so when two paid personnel are on duty weekdays.*
4. *A high level of dispatch and response coordination is necessary between BVA and the Brighton Fire Department, plus West Brighton responders, so that response workload is controlled and priority calls are answered within the New York*

State/regional (and national) EMS time frame throughout the Town in at least 90 percent of the calls.

In the "Facts Which Require Consideration" section of the 2001 report, we observed the following:

The recommended four-minute (90 percent) response of qualified EMS first responder (BLS-AED) personnel throughout the Town requires fire department involvement, simply because of geographic considerations.

Methodologies for a desirable reduction in the running times for ambulances are currently being discussed. They include "posting" ambulances in the higher demand areas, such as West Brighton, the Twelve Corners area, and eastern Brighton when on-duty crews are working.

To conduct this review, a consultant made a field visit to meet with BVA officials, review data and discuss response strategies. In addition, consultants had discussions with representatives from the Brighton Fire District and the Town of Brighton. Consultants were also provided with four months of data to illustrate response changes.

To analyze the current response capability, consultants concluded that a review of life-threatening calls for service (advanced life support calls for service) would provide an appropriate measure of BVA and mutual aid response, since ALS calls for service are the most critical and time sensitive. Four months (July 2001, October 2001, January 2002 and April 2002) of data were reviewed to identify ALS calls for service. Data from the month of April 2002 was not used, since it was incomplete.

Seventy calls for service were identified as ALS calls for service; 59 were responded to by BVA and 11 were mutual aid responses (Henrietta Ambulance, Monroe Ambulance and Rural Metro Medical). These ALS responses were measured against the national benchmark, or standard, which suggests that 90 percent of ALS incidents should be responded to within eight minutes and 59 seconds. The data collected is presented in the chart below. The response times to the 70 ALS calls for service are shown in time increments. The number of minutes are shown, followed by the number of responses within that time frame by both BVA and a mutual aid unit, as appropriate.

TIME INTERVAL (MINUTES)	NUMBER OF BVA RESPONSES	NUMBER OF MUTUAL AID RESPONSES
1	0	0
2	0	0
3	6	0
4	0	0
5	5	2
6	15	1
7	7	1
8	10	1
9	4	1
10	5	0
11	4	0
12	1	2
13	1	1
14	1	0
15	0	0
16	0	2
Total	59	11

These data indicate that BVA was capable of responding to 73 percent of ALS responses (43) within eight minutes and 59 seconds. A review of the 43 responses within the eight minutes and 59 seconds response time frame indicates that 40 percent of those responses (17) required a response within eight to nine minutes, the high end of the response guideline. A more critical view indicates that of the total 59 ALS calls that BVA responded to for the period studied, 26 or 44 percent of the responses either exceeded the standard or met the standard in the final minute. Eighty-seven percent, or 14 of the 16 responses by BVA which were in excess of the response time standard, occurred from 0700 to 1700 (7:00 a.m. to 5:00 p.m.).

A review of the 11 mutual aid ALS responses indicates that five responses (46 percent) were responded to in less than eight minutes and 59 seconds.

It is our understanding that current operational practices provide that West Brighton paid firefighters will respond to EMS requests during daytime hours, Monday through Friday, when requested. West Brighton volunteer firefighters respond to EMS calls for service during evening hours and on weekends, but consultants have been told that response to EMS incidents after 10:00 p.m. is sometimes a problem. The West Brighton Fire Company is not automatically dispatched to EMS calls, but responds when requested by BVA. In contrast, it is our understanding that the Brighton Fire District personnel respond to emergency medical calls, automatically, not only upon request.

It is important to recognize that the West Brighton Fire Protection District (WBFPD) currently employs part-time firefighters during the hours of 8:00 a.m. to 5:00 p.m., Monday through Friday. During this time period, there is a substantial volume of life-threatening EMS calls for service (ALS). Thus, it is important to link the available personnel resources to ensure the timely demand for service in life-threatening situations. (See appendix for a discussion of survivability.) This is critically important, since ambulance response may be slow due to traffic and other call activity. Thus, it is our conclusion and recommendation that:

CONCLUSION/RECOMMENDATION 1: The WBFPD's on-duty firefighters should be responsible for responding to advanced life support calls for service. Firefighters should be dispatched by the 911 Center automatically, as part of a standard response protocol.

As we understand BVA's response strategy, BVA stations all units at the 1151 Winton Road Station and generally responds from that location. Our belief is that a more effective response strategy would be to deploy as needs dictate. The BVA should adopt a standard industry practice of posting or deploying units based on anticipated call response during different times of the day to different response areas. Thus, while we recognize that BVA has a mission of serving the Town of Brighton, from a narrow perspective relating only to West Brighton, it is our conclusion that during the daytime hours of 0700 to 1700 (7:00 a.m. to 5:00 p.m.), the BVA should relocate an ambulance to a street location closer to West Brighton to reduce longer response times to West Brighton.

CONCLUSION/RECOMMENDATION 2: During the daytime hours of 0700 to 1700 (7:00 a.m. to 5:00 p.m.), the BVA should relocate an ambulance to a street location closer to West Brighton to reduce longer response times to West Brighton.

As a practical matter, if BVA stationed an ambulance at the West Brighton Fire Station #2 (2695 W. Henrietta Road), or at a location closer to the station, and also stationed an ambulance at Brighton Fire District Station #1 (3100 East Avenue), or at a location closer to the station, BVA's response capability would be substantially improved.

We recognize that BVA may have difficulty achieving desired response goals, and that to develop a plan or strategy to meet enhanced response goals may have significant financial impacts. These financial impacts will require careful review by policy leaders in the Town. Any additional financial resources required to meet enhanced response goals

would require agreement between BVA, as the contract service provider, and the Town, on behalf of the ambulance service district.

It is also our understanding that BVA is planning staffing changes to improve BVA's response capability. Our recommendations are, we believe, consistent with proposed changes. Additional staffing resources will make recommendations easier to implement.

It is also important to recognize that emergency medical services are often delivered by a combination of agencies. As we have noted previously, because of the area to be serviced and the volume of EMS incidents, it is critical that available full-time and volunteer responders are linked together to establish an effective response system. Developing a multi-year plan which identifies needs, call volume location, roles of agencies and costs of services should be developed by BVA, in conjunction with the Brighton Fire District and the West Brighton Fire Protection District.

CONCLUSION/RECOMMENDATION 3: BVA, working with the Town and the Brighton Fire District and West Brighton Fire Protection District, should develop a strategic response plan which develops a strategy for providing EMS over the next five years.

In summary, it is our conclusion at this time, that during the daytime hours of 0700 to 1700 (7:00 a.m. to 5:00 p.m.), the BVA should relocate an ambulance to a street location closer to West Brighton to reduce longer response times to West Brighton. Ideally, this ambulance should be staffed with ALS-qualified personnel. Additionally, the West Brighton Fire Department should be dispatched to all ALS EMS calls for service. The Monroe County Dispatch Center should automatically dispatch the West Brighton Fire Department to ALS calls for service.

We wish to acknowledge the cooperation and assistance of the Brighton Volunteer Ambulance, the Brighton Fire District and the West Brighton Fire Protection District and the Town of Brighton and specifically those officials involved in assisting consultants in this assignment. We are hopeful that the leadership of these organizations will review and implement these recommendations.

APPENDIX

Survivability for a non-breathing person is a function of application of CPR, defibrillation, and advanced life support. Models exist to predict survivability. One commonly applied model is the Eisenberg Model, which estimates the probability of survival based on a system's ability to deliver the critical links in a timely manner. The functional equation is:

Survival rate = 67% minus 2.3% per minute without CPR
minus 1.1% without necessary defibrillation
minus 2.1% per minute without necessary Advanced Cardiac Life Support

This equation suggests that one-third of all non-breathing and/or cardiac arrest patients may die immediately, and that the remaining individuals' probability of survival decreases by up to 5.5 percent for each subsequent minute; however, the decrease can be slowed by the application of various procedures (CPR, defibrillation, ACLS).