

Lehigh Acres
Fire Control & Rescue District

An Update of the May 2007
Comprehensive Plan

January 2011

Dr. John A. Granito

Lehigh Acres Fire Control & Rescue District

Executive Summary

This Update Report has two primary purposes. The first is to provide the Commissioners and Chief with an update of the Lehigh Department's 2007 Comprehensive Plan. The second is to analyze the rather unique, complex challenges the District faces brought about both by the overall size and multiple development configurations of Lehigh Acres and the unusually severe economic situation. For both purposes, this Report contains observations, opinions, and recommendations which the Board of Commissioners and Chief may use to add to their detailed knowledge of the District and its protection needs, in order to make their policy and management decisions for a multi-year planning horizon.

Note that the observations and recommendations of this Report are meant to be one possible aid to District decision makers, and should be considered as only a single needed segment of information relating to planning and decision making.

Reasonably adequate and equitable fire, rescue, and emergency medical protection for Lehigh's neighborhoods must reflect the pressing necessity to minimize capital expenditures, strictly control operating costs, wisely use and seek additional SAFER grant support, and maintain an appropriate reserve and contingency fund.

The Chief, Department line and staff officers, and civilian personnel all were extremely cooperative and open during interviews. All documentation, records, and statistics requested were immediately provided. Some key documents used during the Study include the 2010-2011 budget, the 2010-2011 Goals and Strategies, as well as those for three earlier years, the 2010 ISO Summary Report (36 pages), the 2000-2010 Incident Response Table, General Order 200908 covering alarm assignments, the 2010 call record statistics, a "no-name" listing of personnel years of service in the Department, a current organizational structure chart, and existing job descriptions. All of these are available in Department files. Also of assistance were the Lehigh Acres 2010-2011 Chamber of Commerce Guide, and several recent business articles in the News-Press.

As this Report illustrates, the following existing characteristics and conditions help create the Lehigh District's current protection challenges.

1. The protection area, at 143 square miles, is too large for the five existing stations to provide response coverage which meets the national standard for fire protection or emergency medical first responder service. Distinct neighborhoods and commercial developments exist in a number of different areas.
2. There are no reasonable prospects for the near-term construction and staffing of any additional stations, so some response times will continue to be overly long.

3. Reasonably adequate and safe staffing for the existing stations appears possible only because of the Federal grant, considering that property tax income throughout Lee County may well continue to decline in 2011, with a negative impact on District income.
4. Residents of the Lehigh District have benefited from the Fire Department's emergency medical service since 1976, provided at the advanced life support/ambulance transport level, but questions are being raised concerning whether ambulance transport itself should be turned over to Lee County, possibly resulting in a reduction of District costs and obviously in service delivery. These issues are raised in this Report.
5. The Department's database indicates a significant increase in emergency responses over the past ten years, with the highest increase in the medical response category. A comparative table is included in this Report.
6. The Department's organizational structure still is in need of adjustments and strengthening, especially in staff and support positions, as presented in this Report.
7. Retention and recruiting efforts need continuing adjustment, due in large measure to the recent reduction in personnel, quickly followed by the rehiring program funded by the SAFER grant awarded for a two year period ending in August, 2012.
8. Continuing improvement is necessary in those areas, such as maintenance of training records, which were penalized by the recent Insurance Services Office (ISO) evaluation, as discussed in this Report.

The major recommendations in this Report are summarized here:

1. fire pumper, quint, and aerial ladder minimum staffing should be four certified firefighters, at least one of whom should be a certified paramedic;
2. ambulance minimum staffing should be two certified emergency medical technicians, with at least one of them a certified paramedic;
3. a carefully constructed, definitive examination of the advantages, disadvantages, operational challenges, and cost/income of Department ambulance service must precede whatever policy recommendation is made to the Board by the Department, and whatever policy decision is ultimately made by the Board. A "go-no go" recommendation is beyond the scope of this update study, but the Report's section on EMS presents some considerations. After the Chief's recommendation the Board will decide the service level;
4. while the response distances to outlying areas of the District may preclude meeting the National Standard of four minutes "road time" for a first due pumper, the Department should continue to dispatch sufficient units to meet the fifteen responders within 8 minutes National Standard to working structure fires. The "two in - two out" legal requirement must be met;

5. compliance with the requirement for a four person "Rapid Intervention Team" at working structure fires may often require the use of outside mutual aid response;
6. either a Department Training Officer position needs to be established, or the Assistant Chief should be designated as Department Training Program Director, in addition to existing responsibilities;
7. the Department Fire Marshal position should be assigned the rank of Assistant chief;
8. the Department needs a position created as Operations Chief/second in command, and responsible for oversight of the Battalion Chiefs, Company Lieutenants, and response crews;
9. an appropriately trained on-scene Safety Officer is needed on each shift, or on immediate call, as called for in the Department's goal #1 for 10/2012;
10. the Fire Marshal and the Assistant Chief for Administration should have shared responsibility for a Department public information and education program;
11. an appropriate program should be established to reduce the annual number of false alarms, averaging 288 annually since 2005, directed by the Fire Marshal;
12. national professional qualifications as listed by NFPA should be applied appropriately to all Department non-civilian positions,
13. a minimum of six shift personnel per station is necessary for adequate, safe fire suppression capability and capacity. That number also is necessary to conduct EMS "First Responder" level service with or without ambulance transport capability; and
14. If a significant financial shortfall is anticipated beginning in September 2012, taxpayer approval should be sought for a special fire-EMS service fee, or other income source. If no additional income or funding can be identified, then a scenario similar to that used before the SAFER grant seems inevitable.

Update of the May, 2007 Comprehensive Plan

The 2007 update of the 2004 five-year plan began with observations concerning "...what might become (for the Lehigh District) a most precarious financial position." That difficult financial condition descended on all Lee County (and Florida) fire departments and continues. Moreover, economic predictions for this County are negative for the next several years. A December 2010 study found that this metro area has had the second worst National economic decline since the third quarter of 2006.

The Lehigh District compensated for the profound reduction in ad valorem tax income and the almost total disappearance of impact dollar income by closing a station, reducing the number of active ambulances, and by "laying-off" 34 shift firefighters plus twelve others who were being processed out. Additionally, the empty positions of operations chief and EMS chief were combined, and the public information position was eliminated. Capital expenditures were mostly eliminated, and serious cost-saving measures adopted, including response unit "browning

out". For the current and next fiscal year, negotiated reductions in personnel costs equal a 5% base salary reduction and certain benefit reductions.

Considering the 23%+ reduction in District property value over the past two years, and the absence of impact fee income, the District has suffered catastrophic financial impact, with total reserves significantly less than two year's operating budget.

Three major factors, however, have combined to enable fire, rescue, and emergency medical service delivery in Lehigh to continue close to the pre-impact level. These are the very tight expenditure controls imposed, the willingness of employees to reduce personnel costs, and--of course--the awarding of a 24 month 8.9 million dollar Federal grant to enable refilling of the 34 plus 12 positions. That grant--described by watchful fire chiefs around the County as the largest awarded--extends from August 14, 2010 to August 13, 2012.

Without it, the negative protection impact on the Lehigh community would have been disastrous, as evidenced by the fact that an expert Federal selection panel awarded it, unprecedented, to a community of fewer than 100,000 population.

Considering that the grant may well not be extended (no provisions currently exist), that the mid-term economic future of Lehigh is tenuous, and that the Fire-Rescue Department will somehow need to continue to provide a reasonably adequate level of basic protection services, the Board of Commissioners and their Chief obviously face a series of difficult challenges and hard decisions. These challenges include not only those associated with income shortfall, but with concerns described in this Report over training, operational control, and firefighter safety, plus public safety education. To be considered, also, are questions concerning what should be the level and extent of Department-based emergency medical service delivery.

The elected Board of Commissioners has both legal and moral responsibility, of course, for providing reasonably adequate public protection within the available resource base. In such a hard pressed economy, all Board policy decisions, as well as the oversight guidance provided to the chief executive officer, will need to balance service delivery with safety, and with cost. Often, a cost/benefit analysis is needed to guide policy construction, so that action steps over emphasize neither historical programs and methods nor the desire for cost savings.

Changes in Lehigh Acres, 2007-2010, Relating to Fire and Emergency Medical Services

The Lehigh Chamber of Commerce population estimate in December 2006 was 90,849. The 2010 estimated "permanent population" is 70,000, with 90,849 still the "estimated total". US Census estimates released December 14, 2010 give 68,625 as the average between 2005 and 2009, which is close to the Chamber's estimate of 70,000 permanent residents. However, both the Chamber staff and a realtor report increased interest by out-of-staters and Floridians in

purchasing relatively low cost Lehigh homes, seen as “an affordable retirement area”. During 2010, the average three bedroom Lehigh home sold for \$55,000, resulting in both positive and negative impacts.

A review of the attached incident response table illustrates the not uncommon increase of structure and vehicle fires during hard economic times. Subtracting the structure and vehicle fires resulting from the April 2006 and March 2007 urban-interface fires, 2005-2006 saw 104 structure fires, and 2006-2007 saw 120 structure fires and 86 vehicle fires. 2007-2008 saw 106 structure fires and a typical number of vehicle fires (70). 2008-2009 and 2009-2010 each saw a more normal number of structure and vehicle fires. Cooperative efforts in arson investigation by the Lehigh Fire Marshal and the State Fire Marshal appear to have brought structure and vehicle fires back to more typical levels. Never-the-less, the Lehigh Department responds, on average, to a working structure or vehicle fire approximately every 2.5 days, and a brush fire every two days. By comparison, the Department responds to an emergency medical call, on average, about 15 times each 24-hour shift, or about once every 90 minutes. When all seven types of responses are totaled, the average for the 2008-09 and 09-2010 two year periods (7,893) produces a call about every 66 minutes per 24-hour shift.

Incident response statistics show that total responses over the past ten years have more than tripled (2059 to 8172), including a significant increase in emergency medical responses (1371 to 5658). Using the National Fire Incident Reporting System records of the various categories of incidents, and reviewing the total number of incidents for a representative month (September), the total incident count for the 30 days of September 2010 was 693. For September 2009, 690, and for September 2008, 534. Thus, although the District resident population count is fairly stable, the Fire-Rescue Department response workload has slightly increased.

The 2007 update (p2) contains a sentence which still accurately reflects the condition of the Lehigh Department: “the gains made by the District and its Department have been sound and very useful, but are not sufficient.” The construction and current operational status of stations 104 and 105 is very helpful in protecting the District, but the response and “back-up” distances are overly long, and the number of shift responders is still lower than required by the size and nature of the District, by national response standards, and by the requirements of the “two in-two out” and RIT group obligations.

To apply these observations to the challenges facing the Chief and the Commissioners, the related concepts of capability and capacity are noted here:

Capability refers to the ability of a fire department to respond safely, with sufficient trained personnel and proper equipment, to the expected, probable annual incident workload, and in a timely enough manner to mitigate without significant escalation of damages.

Capacity refers to the ability of a fire department to respond safely with sufficient resources to its typical daily/weekly incident workload, including simultaneous calls and multiple alarms, without the use of mutual aid.

For both capability and capacity, the policy board should formally establish the desired performance levels, supported by an adequate resource base, make public the established policy, and evaluate performance attainment regularly.

A primary responsibility of a fire chief is to keep policy makers fully aware of the Department's real capability and capacity, and to make reality-based recommendations.

While the use of outside aid is encouraged and likely necessary for the mitigation of "possible" (but not "probable") incidents, it needs to be the responsibility of each department to handle its own typical workload, since timely mutual aid cannot be guaranteed. While reliance on regional "specialty teams" now is common—such as hazmat or overhead or technical rescue operations—such teams may take an hour or longer to form and appear at a local incident. Thus, local departments must anticipate conducting the initial work required using their own trained personnel and resources. The Lehigh Department does this, for example, for potential hazmat incidents.

Local hazard and risk surveys, therefore, should categorize levels of risk associated with local hazards, probable frequency of occurrence, and the consequence impact on life, property, environment, and economy. The local policy board must then, publically, establish realistic performance levels and arrange for any needed mutual aid anticipated—with its current shortcomings—or regionalization.

The existing response times of the Lehigh Department can be reasonably approximated by the attached maps, which are adjusted to the five stations. Note that the number of responders currently assigned to each station is insufficient to attack and mitigate a working fire, therefore the time required for additional responders to arrive is very critical, and often too lengthy.

To meet the National standard of fifteen responders to a structure fire—all arriving within eight minutes, three Lehigh stations must be dispatched. The attached table, listing the resources of each Lehigh station, and the official vehicle response general order, enable the Board to determine the capacity of their Department in terms of fire suppression, emergency medical, or special operations workload. The computer maps illustrate approximate response times over color-coded distances.

Note that, even if two firefighters were assigned to each of five ambulances, (with four others at each station, plus a duty Battalion Chief) the 31 total number actually present for shift duty would allow for only two working structure fires at the same time, and no EMS runs. If only a total of four were on duty at each station, the capacity would be one working structure fire, with one Engine Company still available for a first responder medical call to assist an

outside ambulance. To meet the RIT group and Safety Officer requirements, mutual aid would be needed in each of the two above scenarios.

Recommendation #1: Using guidance from the Chief, the Board of Commissioners should ascertain the “Capability”, and “Capacity”, and mutual aid status of their Department (likely extending until August 2012) and formally recognize that status.

Recommendation #2: Using guidance from the Chief, the Board of Commissioners should decide what levels of Capability and Capacity are desired to provide reasonably adequate equitable service delivery to the District, plus the list of service type options wanted, and the source of resource funding and mutual aid necessary to maintain those levels.

Recommendation #3: A performance measurement process for both Capability and Capacity should be established and applied. (See 2010-2011 Goal #3 for a reference.)

Recommendation #4: Two different solution paths need to be identified, depending on whether (A) a multi-year Federal grant will be awarded after August 2012, or (B) not awarded. Each solution path should reflect the Board’s decision concerning the types and levels of protection deemed necessary for Lehigh. Solution path A should recognize an eventual loss of Federal aid. Solution path B will recognize the grant loss in August 2012 and already have arranged for special levy or other provisions for a citizen approved increase in income.

This recommendation combines both the “budget for your plan” and “plan for your budget” planning concepts. The solution path process typically is conducted using “branch” programming methods and brainstorming type discussions, with very broad group input arrangements. Citizen information, input, and plan approval is necessary.

As the decision deadline approaches, the Board will need to convert the appropriate solution path to a Solution Decision Action Plan based on the results of the broad based discussions and the then current fiscal reality. Any special funding decisions made by other municipalities in Lee and adjacent Counties may influence a Lehigh decision and voter reaction.

Recommendation #5: Minimum actual staffing for the five first-line pumpers-quint should be four firefighters. This is necessary in Lehigh, not necessarily because of the National Standard (NFPA 1710), but because the first arriving company at a Lehigh incident typically has a too long, unsafe wait for the second due company. Additionally, with fewer than four per pumper, all five pumpers would need to be dispatched to a structure fire call, assuming no available Lehigh ambulances. The practice of having Tender (tanker) operators at Stations #1 and #4 is prudent and should be encouraged.

Note that, currently, the Lehigh aerial ladder vehicle operates as a pumper and not as a ladder company. In actuality, there are thirteen structures in Lehigh 35 feet or higher, which is the ISO height requiring aerial ladder response. However, one person can raise an aerial ladder,

while three or four of the already too few Lehigh firefighters are needed to raise a 28 to 35 foot long ground ladder. Aerial ladders are labor effective, and “ladder company” operations are impossible to conduct when the Quint is operating as a pumper. A long-term goal should be to have a ladder company on duty at a Lehigh station.

Apparatus currently on hand is reported as satisfactory, although the economic situation curtails the replacement program and will build toward a severe future challenge.

Recommendation #6: Using the projected budget, reformulate an apparatus replacement plan. To retain apparatus, emphasis on a rolling maintenance program and on timely repairs may necessitate the employment of a trained part-time or on-call mechanic to augment the one remaining Department mechanic.

Insurance Services Office Review (ISO)

The ISO survey of fire protection in the Lehigh District was conducted in early 2010 and reported in a 36 page document in June 2010. A “Public Protection Classification” number is assigned by ISO and typically is used by residential and commercial fire insurance companies to establish local or area premium rates. The rating is for fire suppression capability only. It does not evaluate emergency medical service programs, although fire departments with a noticeable EMS workload may have a “loss” of one shift person in the ISO count of on-duty responders. The survey covers the fire alarm and communication systems (mostly Lee County) 10%, the fire department itself (50%), and the water supply system (40%).

Classification numbers range from 1 (the best) to 10 (no recognized protection). Of the 639 Florida fire departments currently rated, 139 received a class 4 rating, as did Lehigh, for properties within five road miles of a fire station and within 1000 feet of a fire hydrant. Lehigh properties within 5 road miles of a fire station but beyond 1000 feet of fire hydrant are rated 8.

If the scores are equated to a 100 point scale (as in a school test), the fire alarm section scored 96/100; the water supply scored 68/100; and the fire department scored 62/100. Said another way, the fire alarm section is a class 1, the fire department is a class 4, and the water supply is a class 4. Of 639 Florida fire departments, 262 are either class 1 (9), class 2(31), class 3 (83) or class 4 (139). (160 Florida departments are rated class 5, the statistically mean score.)

Of most importance to this Report are those areas where the Lehigh Department lost significant points, but which could be raised over the mid-term future. These areas are:

1. Use of “automatic mutual aid” to raise the number of first line pumpers to 6 (p18) (Lehigh Fire District lost 4 points out of 10).

2. "Response of a ladder or service company to all building fires" (p21). (You don't get full pumper and full aerial ladder credit for the same quint). (Lehigh lost 3 points out of 5). This can be improved.
3. "Number of stations" "lost more than half the possible 4 points, but there is nothing that can be done at this time to improve this.
4. "Number of Responders" lost 5 points from a possible 15, but this cannot be improved at this time.
5. "Training" lost 4 points out of a possible 9, and can be improved at this time.

Recommendation #7: Review the list of equipment required by ISO for "service company" apparatus (no aerial required). Consult with ISO, and so equip an existing vehicle (tender?) and dispatch it to building fires. Possible gain of 3 points.

Recommendation #8: Accelerate and strengthen the existing effort to improve "Training" by assigning the Assistant Chief as Training Director, or by creating an additional position as full time Training Officer. Form an internal task force consisting of the Field Trainers, a Battalion Chief, the Assistant Chief, and the Fire Marshal to review the total ISO review of training and to design and implement a complete annual training package. Incorporate the 2010-2011 goals related to officer and firefighter training. (Possible gain of 3 to 3.5 points) Note that the 2007 Report section on "training" (p14) is still valid and useful.

If the Fire Department's total credits of 30.59 could be increased by a total of 4 to 4.5 credits (34 to 35 total credits), the total credit for the ISO survey would be increased to 70 or more points for a District Classification of 3, rather than the current 4. ISO should be consulted if this Recommendation is considered for implementation. Obviously, any improvement in training would be of benefit to the personnel and residents, no matter the ISO rating, and a training improvement program is critical.

Organizational Structure and Personnel Positions

The following recommendations are based on an analysis of the current structure and the existing position descriptions.

Recommendation #9: As soon as possible, perhaps using surplus funds, the department should recreate a position of "Operations Chief/Second in Command", with the Battalion Chiefs and responder shifts reporting to that position, through the station/shift chain of command. This position would have a dotted line relationship to the Assistant Chief for administration and EMS, and to the Fire Marshal. In the absence of the Chief, the Operations Chief would have overall responsibility for the Department. Using the existing Lehigh rank structure, this position

probably would be ranked as “Deputy Chief”. Regular duties would also include District hazard analysis survey, resultant pre-planning, post-incident critiques, input for the training program, and updating the ISO rating.

Recommendation #10: The position title of “Fire Marshal” should be assigned the rank of Assistant Chief (for Prevention and Life Safety Management) and report to the Fire Chief.

Recommendation #11: The Assistant Chief for Administration and the Fire Marshal (Assistant Chief) should share the responsibility for a public safety education and information program.

Recommendation #12: Adjustments are recommended for two support positions. The EMS billing clerk should report jointly to the Finance Officer and the Assistant Chief for EMS. The position title and ranking structure for the existing position which has responsibility for payroll, human resource functions, etc. should be recognized as Administrative Assistant.

Recommendation #13: NFPA Professional Qualification Standards for firefighters, fire officers (at four levels), Fire Instructors (at three levels), and for other specialty uniformed positions should be written into the various position requirements and descriptions, with adequate time allowed for incumbents to achieve the desired level of certification.

Recommendation #14: A comprehensive incident pre-planning program should be designed and initiated (Operations Chief), likely encompassing an initial attack plan for target hazards plus an NFPA compliant standard Pre-Plan. This would assist ISO ranking as well.

Recommendation #15: In accord with the above recommendations, the following structure chart modifications are recommended:

1. Reporting directly to the Fire Chief:
 - a. Deputy chief for Operations (Fire)
 - b. Fire Marshal Assistant Chief
 - c. Assistant Chief for Administration and EMS
 - d. Finance Manager
2. Reporting directly to the Deputy Chief:
 - a. Battalion Chiefs
3. Reporting directly to the Assistant Chief for Administration:
 - a. Administrative Assistant (H.R.)
 - b. EMS billing clerk
 - c. Field Trainers

Dotted line cooperative working relationship should exist between:

1. Finance Manager and EMS billing clerk
2. Two Assistant Chiefs (for public information)

3. Operations Chief and Assistant Chief EMS and training program (if no separate Training Officer)
4. Administrative Assistant and Ops Chief and Fire Marshal
5. Medical Director and Assistant Chief EMS
6. Attorney and Fire Chief plus Board of Commissioners

Emergency Medical Services

The emergency medical service program for Lehigh Acres is based in the Lehigh Fire Department and provides first responder advanced life support from paramedic level engine companies, and advanced life support transport from paramedic level ambulances. It is one of the two fire-rescue districts in Lee County with a fire based ambulance program, and has used ambulances for almost four decades. When Fire Department ambulances are all in use, a Lee County EMS paramedic level ambulance will come into the District to handle the call. On infrequent occasions, a LAFD ambulance will provide requested response to close-by, out-of-district areas.

Note that the LAFD ambulances are dispatched by the Lee County dispatch center, and do not take non-emergency runs. These typically are termed “inter-facility” (IF) calls, and are handled by County ambulances or a private ambulance company. Note, also, that Lee County EMS and LAFD bill Medicare, insurance companies, and individuals for transport services to help offset their operational costs. The County does bill for both its emergency and inter-facility transport services.

Using September 2010 as a sample, Lee County ambulances conducted 59 IF transfers in/from the Lehigh District, plus 17 emergency transports, and 21 responses which were cancelled prior to arrival, plus one helicopter call, for a total of 98 calls, of which they likely billed for 60 to 86 of the 98. Of those particular 98 calls, LAFD ambulances actually transported and billed for 10 runs.

Between April 1, 2010 and August 31, 2010, Lee County did 268 interfacility transports in/from the Lehigh District, plus 396 emergency-type transports which could not be handled by the busy or blacked out-of-service LAFD ambulances. Thus the County likely billed Medicare, insurance, or individuals for a total of 664 Lehigh ambulance transports over a five month period in 2010.

During 2010, from January 1 to December 6, the LAFD ambulances transported to a hospital 4,108 patients—of the 6,188 total calls they answered (75%). (Note that, of the remaining calls, 51 were DOA and 1,438 refused to go to a hospital.) Hospital transports (ALS and some at BLS level) during that time period were:

Number	Destination
5	Cape Coral Hospital
1006	Gulf Coast Hospital
263	Lee Memorial Hospital
343	Lee Health Park
2478	Lehigh Regional Medical Center
5	SW Florida Regional Medical Center

The total calls were caused by:

Traffic accident	22.4%
Sick person	13.0%
Breathing problem	9.7%
Chest pain	8.6%
Fall victim	5.7%
All Other Causes*	40.6%

*Range from abdominal pain to poisoning to gunshot to childbirth.

The typical EMS call in Lehigh receives the quickest possible response from the nearest fire apparatus, with ALS (paramedic) capability if needed, assuming that there has been no pre-decision that only an available ambulance is necessary. Depending on how many ambulances are in-service that day at Lehigh stations, the fire truck may arrive much sooner than the ambulance. The typical action sequence upon arrival is “survey the patient, stabilize, and package for transport, if needed.” The issue, then, of ambulance availability is very important. A run to any hospital requires time, of course, and distant hospitals require longer times. Even earlier, the complexity of survey and pre-hospital treatment at the scene adds time. Thus the nature of the call and the hospital location are key “unit availability” factors—as well as how many ambulances are in service that day.

A January 2011 fiscal analysis of the cost to maintain 2009-2010 ambulance service by the Lehigh Fire Rescue Department, prepared by the Finance Manager and senior staff, is attached in part as an appendix to this Report and is a useful document for Board consideration. It illustrates that the total annual cost of maintaining and running 2.5 ambulances 24/7/365 was \$2,028,748 in 2009-2010, including the salary and fringe benefit costs for 17.5 responder positions (2.33 personnel x 3 shifts x 2.5 ambulances) of \$1,712,934. The non-responder costs were \$315,814, including ambulance supplies, fuel, maintenance, and billing personnel. For that same period, the Department’s billing charges resulted in an income of \$1,292,739. (About 50% of billing charges were actually paid.) Thus the total non-offset annual cost of 2.5 on-duty ambulances is calculated at approximately \$736,009 including responder costs. Divided by 2.5, then, the full, non-offset annual cost for one ALS ambulance 24/7/365 was approximately \$294,403, with two fully certified personnel assigned and on-duty per shift.

Minus a future SAFER grant magnitude of income, then, the question becomes: 1) whether to retain ambulance service, or 2) only four responders as an ALS engine company per station—without ambulances or assigned crews—and task those units to respond not only to fire and similar calls but as EMS first responder units—or, 3) retain two additional responders in all or selected stations to run EMS first responder calls, for example, in small “fly cars”. In either case, no off-set ambulance income would be available, unless Lee County paid the District to run as ALS engine companies or ALS fly cars, to assist the County EMS workload, which might be explored.

Considering the fire and related workload, the length of time for additional fire units to arrive at a fire scene in 140+ square miles, and the length of time a first responder unit will be out-of-service at an EMS call—waiting for a County ambulance and then assisting—this becomes a critical risk management, cost-benefit issue for the Lehigh Board.

Shifting ambulance service from the Fire Department to Lee County would appear to require a significant change in County dispatch procedures, since a narrower focused department with a different response role likely will not be able to respond to all types of EMS calls. Typically, the triage function of medical dispatching summons fire apparatus crews in a “medical first responder” roll only to serious and life threatening emergencies. This keeps fire crews more available for fire and related calls. The number of instantly available County ambulances actually required to replace Fire Department ambulances might become evident only with experience, as would the County billing income from Lehigh.

Recommendation #16: Retain a minimum of six fire suppression/first EMS responders in each station, plus a duty Battalion Chief, making every effort possible to retain ambulance transport for the District.

As officials of the District consider the questions relating to how many active LAFD ambulances (0 to 5) should be in-service at this time and in any future time absent a SAFER grant, the following are sub-issues:

1. The Lee County property tax levy includes a non-specified pro-rata amount for County EMS service. County ambulances provide any needed “mutual aid” to the LAFD Emergency Medical System. Lehigh property owners pay a County property tax.
2. Lehigh District tax levy includes the non-offset cost of LAFD ambulance service.
3. Were there no LAFD ambulance service, the LAFD reported that the County has estimated that it would service the District’s area and population with fewer than two ambulances. The County EMS does contract with several fire-rescue districts which then provide ALS level “First Responder” service, with fire vehicles, as does LAFD at this time.
4. Currently, not every Lehigh fire station maintains an active ambulance.

5. The Lehigh District's ad valorem tax rate of 3% is capped. An increase would require a referendum, as would any EMS special levy.
6. The geographic size and population distribution of the Lehigh District make equity of ambulance service a challenge.
7. It appears that public knowledge concerning the important details of EMS in Lehigh may be very low, yet the public's degree of desire concerning it may well be needed very soon.
8. An EMS public information and education program for Lehigh residents is needed, in preparation for any future Board decisions.

APPENDIX

- A. Annual Incident Response Comparisons 2000-2010
- B. 2008-2009 Annual Runs by Station
- C. 2007 Computer Response Maps Adapted to existing 5 Stations Base Map; 4 Minute Running Time; 8 Minute Running Time
- D. Fire and Rescue Vehicles by Station Location
- E. Response Orders to Types of Calls
- F. Estimate Running Cost for Ambulances
- G. Granito Bio



Lehigh Acres Fire Control & Rescue District



Incident Responses between FY 2000-2001 and FY 2009-2010

Comparative Report

	FY 2000 - 2001	FY 2001- 2002	FY 2002- 2003	FY 2003- 2004	FY 2004 - 2005	FY 2005 - 2006	FY 2006 - 2007	FY 2007 - 2008	FY 2008 - 2009	FY 2009 - 2010
Structure Fire Responses	60	43	33	73	76	221**	141*	106	77	77
Vehicle Fire Responses	56	56	68	70	67	172**	89	70	86	51
Brush Fire Responses	199	115	134	176	154	239	231	164	206	163
False Fire Alarms	149	132	183	194	172	281	253	306	287	312
Medical Responses	1371	1525	2849	3593	4071	4582	4968	4956	5340	5658
Vehicle Accidents	188	188	232	285	324	333	482	544	588	645
All other responses	486	480	571	875	954	1151	1084	1074	1030	1266
Total Responses	2509	2539	4070	5266	5818	6979	7248	7220	7614	8172

* Denotes values to include homes and other structures damaged or destroyed by the March 26, 2007 wildfire (21).

** Denotes values including homes and other structures damaged or destroyed by the April 29, 2006 fire (117) and 86 vehicle fires.

B. Comparison of Annual Runs By Stations

Station	10/1/08-9/30/09 Number	10/1/09-9/30/10 Number	Increase or decrease	Avg. Runs/day
101	1,189	1,350	+161	3.7
102	2,604	2,940	+336	8.1
102	1,795	1,917	+122	5.3
104	1,200	1,476	+276	4.1
105*	674	n/a		n/a

*Open part-time 3/10-9/10; closed 10/1/09-2/10

Lehigh Fire Rescue Control District

Base Map



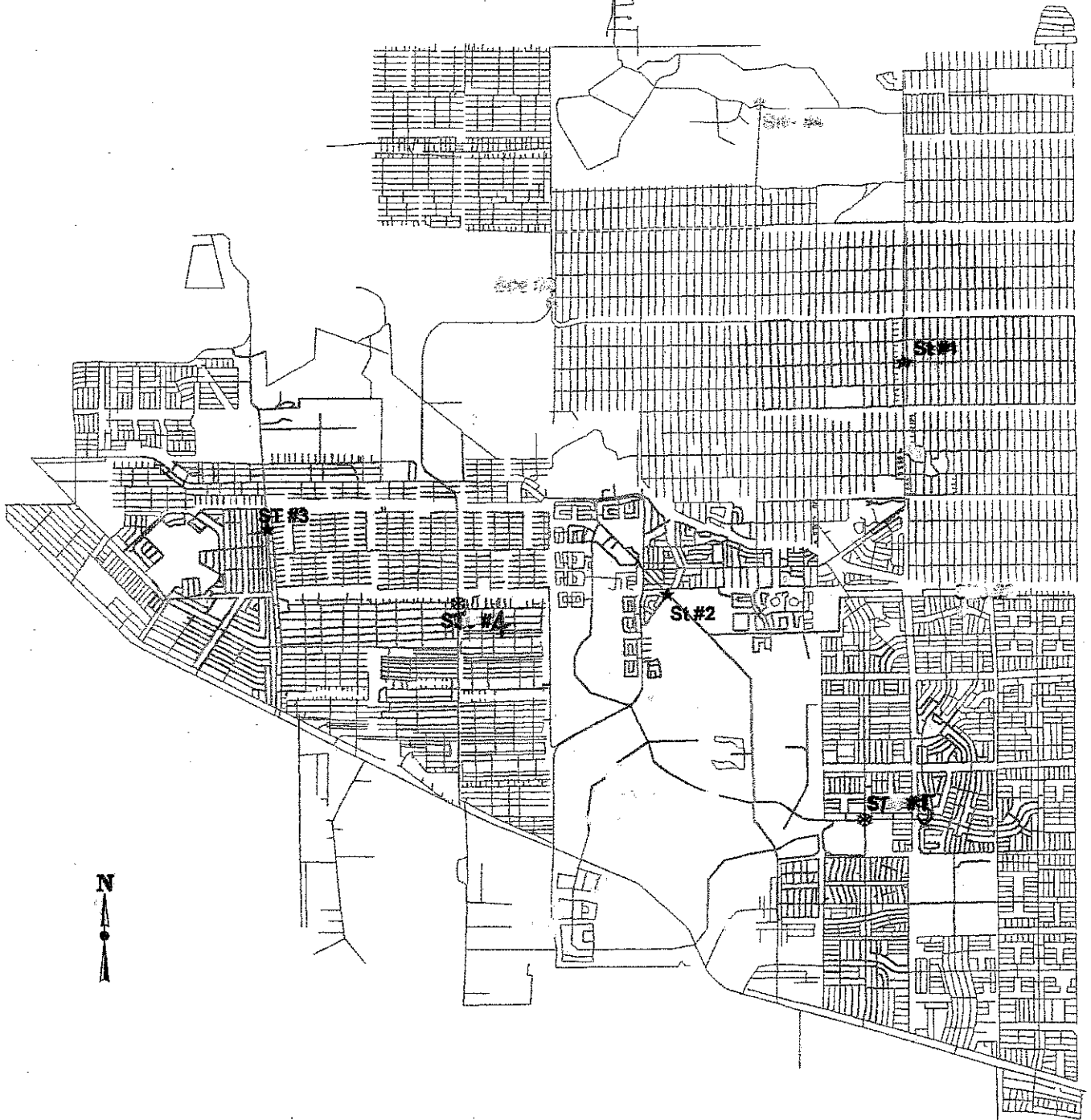
Lehigh Fire Rescue Department

0 .80 1.6 2.4

Miles

Granito Associates, 2004

**Coverage at avg 30 mph for 4 Minutes
From Stations #1,#2,#3, Site#4 & Site #5**



42.2% of Links Covered

Coverage at avg 30 mph for 4 Minutes
From St #1,#2,#3, Site #1 & Site#5

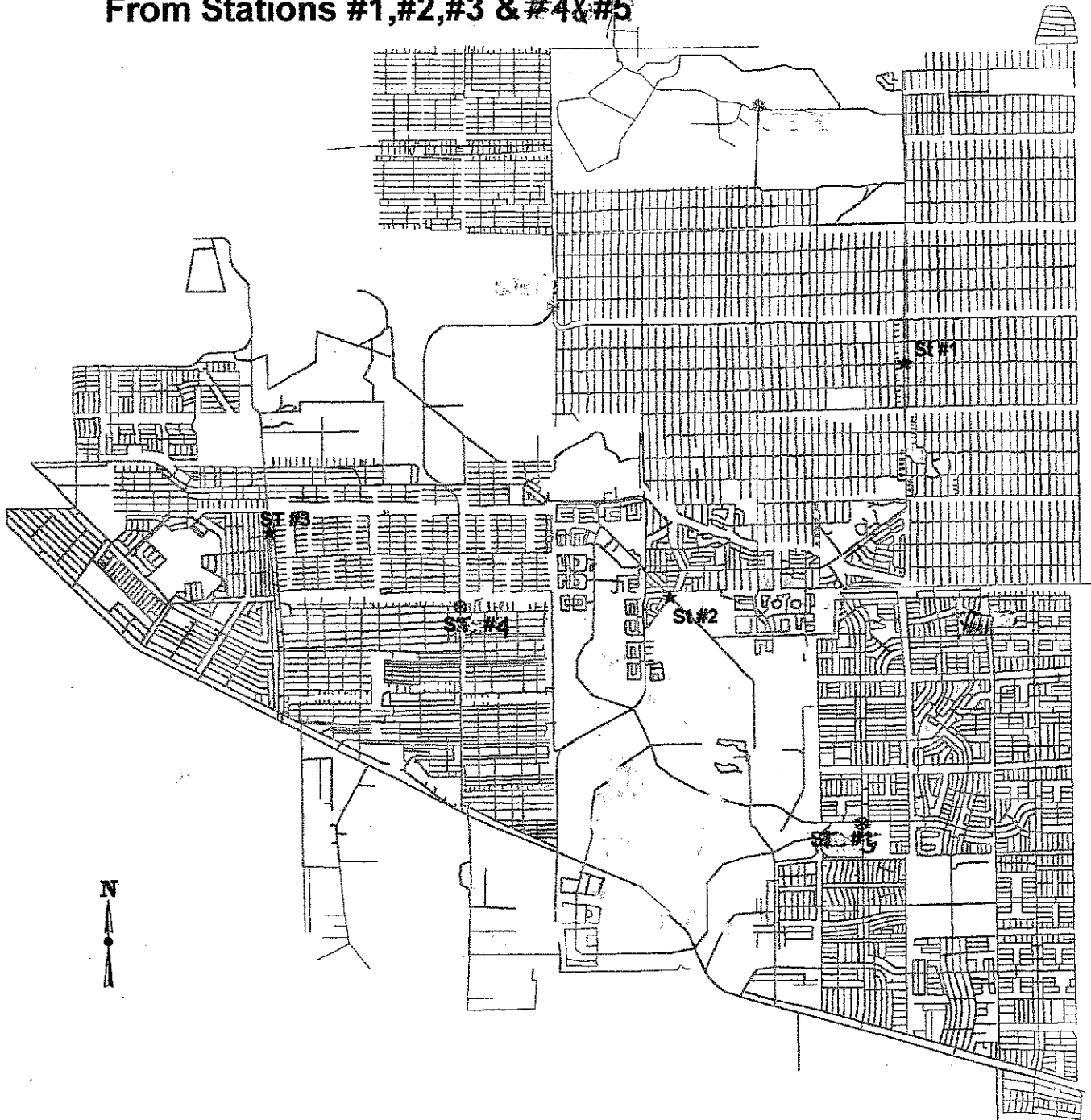
— Selection

0 1 2 3

Miles

Granito Associates, 2004

**Coverage of NFPA Standard 1710
At avg 30 mph for 8 Minutes
From Stations #1,#2,#3 & #4**



+ 84% of Links Covered

NFPA 1710 at avg 30 mph for 8 Minutes
From St #1,#2,#3 & #4

— Covered in 8 Minutes

0 1 2 3
Miles

Granito Associates, 2004



Lehigh Acres Fire Control & Rescue District

Life Safety Management Division

636 Thomas Sherwin Ave S
Lehigh Acres FL 33974

Phone 239-303-5308
Fax 239-369-2436

Apparatus/Unit Response Equipment

Station 101 - 1000 Joel Blvd

Staffing of 4 firefighters assigned to engine company operations; 2 additional firefighters assigned to rescue (ambulance).

Engine 101	1250 GPM Pump; 1000 Gallon Tank. Class A (ALS response) Pumper.
Tender 101	500 GPM pump; 3000 Gallon Tank.
Rescue 101	Rescue / ALS Transport Ambulance
Brush 101	550 GPM pump; 800 Gallon Tank
Reserve Rescue	Rescue / ALS Transport Ambulance

Station 102 - 11 Homestead Rd S

Staffing of 4 firefighters assigned to Quint (engine/ladder) operations; 2 additional firefighters assigned to rescue unit (ambulance) when staffing levels permit.

Truck 102	1500 GPM; 500 Gallon Tank, Class A Pumper (ALS response); 75' ladder with Platform.
Rescue 102	Rescue / ALS Transport Ambulance
Brush 102	500 GPM Pump; 880 Gallon Tank
Reserve Brush	500 GPM Pump; 800 Gallon Tank
Reserve Rescue	Rescue / ALS Transport Ambulance

Administrative Staffing

Battalion Chief	Battalion Chief Response w/assigned vehicle
Mechanic	Utility Truck Response
Deputy Chief	Response to assist with ICS functions

Station 103 - 303 Gunnery Rd

Staffing of 4 firefighter assigned to engine company operations;

(ALS	Engine 103	1250 GPM Pump; 3000 Gallon Tank; Class A Response) Pumper.
	Brush 103	500 GPM Pump; 800 Gallon Tank
	Reserve Rescue	Rescue / ALS Transport Ambulance

Station 104 3102 16th St SW

Staffing of 4 firefighter assigned to engine company operations; 2 additional firefighters assigned to rescue (ambulance).

	Engine 104	1250 GPM Pump; 1000 tank; Class A (ALS Response) Pumper.
	Tender 104	500 GPM Pump; 3000 Gallon Tank.
	Brush 104	500 GPM Pump; 800 Gallon Tank.
	Rescue 104	Rescue / ALS Transport Ambulance
	Reserve Truck	2000 GPM Pump; 600 Gallon Tank; Class A (ALS Response) apparatus; 85' Platform.
	Air-Trailer	Scott Response SCBA/Light Plant (Cascade system with generator to refill SCBA bottles)

Station 105 636 Thomas Sherwin Ave S

Staffing of 4 firefighter assigned to engine company operations

(ALS	Engine 105	1250 GPM Pump; 1000 Gallon Tank; Class A Response) apparatus.
	Brush 105	500 GPM Pump; 800 Gallon Tank
(ALS	Reserve Engine	1250 GPM Engine, 750 Gallon Tank; Class A Response) apparatus.
(ALS	Reserve Engine	1250 GPM Engine, 750 Gallon Tank; Class A Response) apparatus.
	Reserve Rescue	Rescue / ALS Transport Ambulance

Administrative Staffing

Chief	
Asst Chief	Response to include ICS positions
Fire Marshal	Response to include ICS positions, fire investigations
Fire Inspector	Response to include ICS positions, fire investigations

VEHICLE RESPONSE
PROCEDURES

Date Issued: January 27, 2010
Issued By: Fire Chief Don Adams
Approved by Chief: D.A.
Date Last Revised: February 18, 2009
Revision Number: 1
Effective: February 1, 2010
Total Pages: 3

Purpose: To establish a procedure for the response of emergency equipment in an organized manner for all emergencies.

Scope: This procedure is to be followed by all employees. Authority to deviate from this procedure rests with the Battalion Chief, or their designee, who is solely responsible for the results of any deviation.

General: Lee Control is instructed by the District to respond the following amounts of units to a specific type of incident. At any time the Battalion Chief may over-ride a particular assignment and redirect emergency units to continue or discontinue responding. Units are reminded to remain in their first due area as much as possible. It is understandable to leave your area for different assignments, but in all cases Lee Control must be made aware of your location and status.

STRUCTURE FIRE

Residential:

- Battalion Chief, 2 engines, 1 rescue, 1 truck
 - Tender response in non-hydrant areas
- South of State Road 82 (unpaved/non-hydrant areas)
Battalion Chief, 2 engines, 1 rescue, 1 tender

Commercial/Multi-Residential:

- Battalion Chief, 3 engines, 2 rescues, 1 truck
 - 2 tender response in non-hydrant areas

Health Care Facility:

- Battalion Chief, 3 engines, 3 rescues, 1 truck
- Report of smoke or fire conditions, consider 2nd alarm to include compliment at least equivalent to 1st alarm assignment (mutual aid).

MEDICAL CALL

- 1 engine and 1 rescue will respond to all medical calls with the exception of the engine being excluded (after the Lt. determines from dispatch information that the engine response is indeed needed.) from general illness, personal injuries, and medical facilities.

MVC

- 1 engine, 1 rescue for passenger vehicle accidents
- 1 engine, 1 truck, 2 rescues for bus accidents

BOMB THREAT (CODE 7)

- Battalion Chief, 1 engine, 1 rescue

HAZARDOUS MATERIAL ACCIDENT

- Battalion Chief, 1 engine, 1 rescue
 - ❖ Unless dispatch information states otherwise.

AIRCRAFT FIRE or AIRCRAFT DOWN

- Battalion Chief, 2 engines, 2 rescues, 2 tenders

ALERT II RESPONSE

- 1 rescue to stand by in a parking lot where the old terminal used to be down by the CFR station).

ALERT III RESPONSE

- 1 engine and 1 rescue to stand-by for response to designated area by Lee Control.

PUBLIC ASSISTANCE

- 1 engine (non-emergency)

MUTUAL AID

- As determined by Battalion Chief's discretion.
- Upon dispatch of a structure fire with Lehigh units unable to fill structure fire assignment noted above, closest mutual aid units will be requested (engine/truck company) to complete minimal response.

ALARM ACTIVATION

- On all alarm activations – the first due engine and rescue shall respond emergency mode; all others shall respond non-emergency mode unless directed otherwise or when dispatch information states otherwise.

Residential:

- Battalion Chief, 2 engines, 1 rescue, 1 truck
 - Tender response in non-hydrant areas
- South of State Road 82 (unpaved/non-hydrant areas)
Battalion Chief, 3 engines, 1 rescue, 1 tender
 - ❖ Residential alarms with **NO FIRE** and **ALARM RESET** or **NO HELP NEEDED** in resetting, shall require 1 engine **NON-EMERGENCY RESPONSE**.
 - ❖ Residential alarms where **HELP IS REQUESTED** and there is **NO FIRE**, shall require 1 engine **NON-EMERGENCY RESPONSE**.

Commercial/Multi-Residential:

- Battalion Chief, 3 engines, 2 rescues, 1 truck
 - *2 tender response in non-hydrant areas*

Health Care Facility:

- Battalion Chief, 3 engines, 2 rescues, 1 truck

BRUSH FIRE

- Battalion Chief, 1 engine, 1 brush truck, 1 rescue
 - Tender response in non-hydrant areas
- Additional units will respond on high hazard days according to Battalion Chief's direction.

VEHICLE FIRE

- 1 engine, 1 rescue for passenger vehicles
- 2 engines, 1 rescue for large trucks, tractor trailers or buses

UNKNOWN TYPE FIRE (ex: smoke in area)

- Battalion Chief, 1 engine, 1 brush truck, 1 rescue (Unless dispatch information states otherwise)
 - Tender response in non-hydrant areas

Lehigh Acres Fire Control & Rescue District

Cost to run Rescues

FYE 9/30/10

All costs are to maintain a service level of 2.5 Rescues 24/7/365.

1) Paramedic supplies (for Rescues)

Total cost (10/01/09 - 09/30/10):	\$	150,345.33
Less 20% (attributed to other District vehicles):	\$	(30,069.07)
Supplies attributed to Rescues	\$	120,276.26

Annual Cost:	\$ 120,276.26	**
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**Based on 6 Rescues stocked with medical supplies

2) Fuel (for ambulance)

	beginning odometer	ending odometer	miles driven	(fuel) Gallons Consumed	miles per gallon
FY 09/10 miles driven: Rescue 02-3	165,853	166,905	1,052	196.40	5.36
FY 09/10 miles driven: Rescue 02-3	156,656	169,940	13,284	1,264.20	10.51
FY 09/10 miles driven: Rescue 06-1	84,901	108,370	23,469	2,974.90	7.89
FY 09/10 miles driven: Rescue 06-2	81,590	108,043	26,453	3,416.80	7.74
FY 09/10 miles driven: Rescue 07-4	27,712	50,283	22,571	2,514.40	8.98
FY 09/10 miles driven: Rescue 07-5	20,418	49,233	28,815	4,022.40	7.16
		Total	115,644	14,389.10	
Average miles driven per year:	19,274	Average	19,274	2,398.18	7.94
Average miles per gallon per vehicle:	7.94				
# of gallons of fuel consumed	14,389				
Average cost of diesel fuel (during FY 2010)	\$	2.666			
Cost of fuel over 12-month period (all Rescues)	\$	38,357.46			

Annual Cost:	\$ 38,357.46	**
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**Represents cost average of 2.5 Rescues per day.....the fuel cost per individual Rescue is as follows:

- 02-3 - \$523.55 (1.36% of fuel consumption) - (annual gallons of fuel consumed x average cost of diesel)
- 02-3 - \$3,370.02 (8.79%)
- 06-1 - \$7,930.28 (20.67%)
- 06-2 - \$9,108.27 (23.75%)
- 07-4 - \$6,702.71 (17.47%)
- 07-5 - \$10,722.63 (27.95%)

3) Vehicle maintenance (for Rescues)

Total cost (10/01/09 - 9/30/10):	\$	86,497.06
Less 60% (attributed to other District Vehicles):	\$	(51,898.24)
	\$	34,598.82

Annual Cost:	\$ 34,598.82
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Lehigh Acres Fire Control & Rescue District
 Cost to run Rescues
 FYE 9/30/10

All costs are to maintain a service level of 2.5 Rescues 24/7/365.

4) Vehicle maintenance - labor (mechanic)

Annual Wages:	\$	69,592.64
FICA (employer portion - 7.65%):	\$	5,323.84
FRS/Retirement (10.77%):	\$	7,495.13
Worker's Comp (average):	\$	2,784.00
Fringe Benefits (health, dental, life, std, ltd):	\$	17,686.00
Total:	\$	102,881.60
Less 60% (attributed to other District vehicles):	\$	(61,728.96)
	\$	41,152.64

Annual Cost:	\$	41,152.64
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5) Ambulance billing - administration (10/01/09 - 9/30/10)

Annual billing software / support (Ortivirus):	\$	2,979.02
Stamps / Office supplies (9,000 letters/yr):	\$	4,509.00
Collection Fees (paid to PAC):	\$	2,976.37
	\$	10,464.39

Annual Cost:	\$	10,464.39
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*Average of 600 ambulance invoices/month + 100 insurance claim forms/month + 50 collection letters/month

**750 letters/month x 12 months x stamp cost (\$0.44) x envelope cost (\$0.061)

6) Ambulance billing - Billing Specialist

Annual Wages:	\$	47,977.08
FICA (employer portion - 7.65%):	\$	3,670.25
FRS/Retirement (10.77%):	\$	5,167.13
Worker's Comp (average):	\$	312.00
Fringe Benefits (health, dental, life, std, ltd):	\$	17,573.00
Total:	\$	74,699.46
Less 5% (attributed to other admin functions):	\$	(3,734.97)
	\$	70,964.49

Annual Cost:	\$	70,964.49
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Lehigh Acres Fire Control & Rescue District
Cost to run Rescues
FYE 9/30/10

All costs are to maintain a service level of 2.5 Rescues 24/7/365.

7) Personnel Costs (for Rescues)

Average Paramedic costs

Annual Wages:	\$	66,156.00
FICA (employer portion - 7.65%):	\$	5,060.93
FRS/Retirement (10.77%):	\$	15,381.27
Worker's Comp (average):	\$	2,400.00
Fringe Benefits (health, dental, life, std, ltd):	\$	<u>15,600.00</u>
Total (annual cost of Paramedic):	\$	104,598.20

Average EMT costs

Annual Wages:	\$	55,894.39
FICA (employer portion - 7.65%):	\$	4,275.92
FRS/Retirement (23.25%):	\$	12,995.45
Worker's Comp (average):	\$	2,400.00
Fringe Benefits (health, dental, life, std, ltd):	\$	<u>15,600.00</u>
Total (annual cost of EMT):	\$	91,165.76

Cost attributed to Scheduled/Unscheduled Leave

Total (annual cost of EMT/Paramedic - avg):	\$	<u>97,881.98</u>
Equates to 1/3 of a position:	\$	32,627.33

Avg. personnel cost to run a Rescue (per shift): \$ 228,391.29

Cost per shift x 3 shifts (A,B,C) - per Rescue: \$ 685,173.86

Annual Cost: \$ 1,712,934.65 **

**Represents 2.33 positions per shift x 3 shifts x 2.5 Rescues per year = 17.5 Positions

Total Cost per ambulance: \$ 2,028,748.71

Lehigh Acres Fire Control & Rescue District
 Cost to run Rescues
 FYE 9/30/10

All costs are to maintain a service level of 2.5 Rescues 24/7/365.

8) Cash receipts associated with Rescues:

NOTE: Ambulance Charges (fees) during FY 09/10 was \$2,324,991.00

Cash receipts:	\$ 1,292,739.19
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NOTE: Accounts Receivable (In-House accounts) at 9/30/10 was \$1,096,062.89

NOTE: Accounts Receivable (accounts in Collections - PAC) at 9/30/10 was \$1,954,914.09**

**PAC (Collection company) will attempt collection for up to 7 years

Cash receipts:	\$ 1,292,739.19
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Total Cost (estimate):	\$ (2,028,748.71)
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	Including Personnel Costs	NOT Including Personnel Costs
1) Paramedic supplies (for Rescues)	\$ (120,276.26)	\$ (120,276.26)
2) Fuel (for Rescues)	\$ (38,357.46)	\$ (38,357.46)
3) Vehicle maintenance (for Rescues)	\$ (34,598.82)	\$ (34,598.82)
4) Vehicle maintenance - labor (mechanic)	\$ (41,152.64)	\$ (41,152.64)
5) Ambulance billing - administration	\$ (10,464.39)	\$ (10,464.39)
6) Ambulance billing - Billing Specialist	\$ (70,964.49)	\$ (70,964.49)
7) Personnel Costs (for Rescues)	\$ (1,712,934.65)	\$ -
Total Costs:	\$ (2,028,748.71)	\$ (315,814.06)
Cash receipts:	\$ 1,292,739.19	\$ 1,292,739.19
Net increase/(decrease) per year:	\$ (736,009.52)	\$ 976,925.13

JOHN A. GRANITO

643 E. LAKE ROAD
PENN YAN, NY 14527
Phone (315) 536-3439
FAX (315) 536-6595

e-mail: granitofla@AOL.com

2961 BOWSPRIT LANE
ST. JAMES CITY, FL 33956
Phone (239) 283-2438
FAX (239) 283-2464

John A. Granito is a consultant in fire-rescue service and emergency management. He has conducted numerous studies for MMACG, for HAI, Inc. at the DOE facilities at Hanford, Rocky Flats, Idaho, Los Alamos and Argonne, plus several municipalities and military sites. He was post-Katrina consultant for deployment and response to the City of New Orleans Fire Department, assigned by the U.S. Fire Administration. John began serving as safety consultant to the Port of New Orleans in 1992, and has been consultant to the IBM corporation, the Strategic Air Command, the Agency for International Development, the International City Management Association, the National Emergency Management Institute, the National Fire Protection Association, the Department of Army, NASA, the Federal Emergency Management Agency, the Public Entity Risk Institute, several airports, the US Fire Administration, and more than 400 municipal fire-rescue departments. Larger U.S. departments studied include Boston, Buffalo, Louisville, Cambridge, New Orleans, Providence, Rochester, Pittsburgh, Charlotte, Jersey City, Miami, Sioux City, Topeka, Honolulu, Cape Coral, and Chicago. He has been technical advisor to several studies of fire department performance, including the Centaur and FireDAP projects. In June 2006, he began serving as technical advisor to the NIST, Worcester Polytechnic Institute, IAFC, IAFF multi-year study of fireground operational performance., released in 2010.

In addition to his consulting activities, Dr. Granito has been an instructor at the National Staff and Command school, and has served as an instructor and exercise controller in municipal protection at the National Emergency Training Center. He has instructed more than 800 teams of officials in disaster preparation and emergency planning. He has taught and analyzed protection needs abroad in such diverse environments as Winnipeg, Chernobyl, London, Caracas, Toronto, Seville, Melbourne, Berlin, and Johannesburg. He has been lead instructor for the University of Maryland's course in fire department leadership, and lectures nationally. He conducts post-incident analysis of major emergency incidents for municipalities, governmental agencies, and law firms.

John is the author of more than 200 chapters, technical monographs, reports, journal columns and articles on the organization and management of municipal fire/rescue protection programs and emergency management organizations. He has authored the chapter on planning and evaluating community fire protection in the last four editions of the NFPA Fire Protection Handbook, and is a chapter author and Section Editor of 18 chapters for the 2008 edition. He is co-editor for the latest ICMA "Greenbook" *Managing Fire and Rescue Services* and was co-editor for the earlier edition. He is author of the section in the *Fire Chiefs Handbook* which addresses the future of fire protection, and Chapter 1 on the history of US Firefighting in *Firefighter*. In 2010 he authored a management book for volunteer fire officers for the Public Risk Institute. John was, for twelve years, coordinator of the NFPA Urban Fire Forum, an organization composed of chief executive officers from the fire departments of 30 of the largest cities in the United States, Canada, Great Britain, Germany, and Australia. For two recent years he conducted the research program at Oklahoma State University to reduce line of duty firefighter deaths. He currently is fire protection curriculum consultant to a Taiwanese Technical University.

Dr. Granito was Chair of the National Fire Protection Association's 1201 technical committee on the Organization, Operation, Deployment and Evaluation of Fire and Emergency Medical Services, and has been a member of the International Disaster Research Committee. He has served as Supervisor of Fire Training for New York State, and has been a member of the International Association of Fire Chiefs, the New York State Fire Chiefs Association, and the Florida Fire Chiefs Association. He has been Associate Editor of two fire service magazines. He holds a doctoral degree in leadership studies and is Professor Emeritus and retired as Vice President for Public Service and External Affairs of the State University of New York at Binghamton (Binghamton University). In 2008, Oklahoma State University, through its fire protection program and IFSTA instituted the "Dr. John Granito Annual Award for Excellence in Fire Leadership and Management Research"

2010

Fire Protection
Emergency & Crisis Management
Corporate Security

CONFIDENTIAL CONSULTING SERVICES TO GOVERNMENT, BUSINESS, AND INDUSTRY