# REQUEST FOR BOARD ACTION

## HENDERSON COUNTY
## BOARD OF COMMISSIONERS

**MEETING DATE:**      July 16, 2014

**SUBJECT:**      Presentation of Emergency Services Facilities Space Needs Assessment

**PRESENTER:**      Steve Wyatt

**ATTACHMENTS:**      Yes
1. Needs Assessment

**SUMMARY OF REQUEST:**

At the Board's Budget Workshop in January, the Board directed Staff to engage a facilitator with expertise in emergency services to work with Emergency Medical Services and the Rescue Squad to develop options to meet the long term obligations of both organizations. In February, the County engaged with Solutions for Local Government to develop an assessment of those needs.

The County Manager will present that report to the Board at this meeting.

**BOARD ACTION REQUESTED:**

No Board action is requested. Staff recommends that representatives from Solutions for Local Government, EMS and the Rescue Squad be present at the August 4th meeting for a more detailed discussion.

**Suggested Motion(s):**

*No motion suggested.*

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**DRAFT FOR REVIEW**

1. Purpose & Introduction

The purpose of this study was to assess the space needs of the County's Emergency Management Department, the County's EMS Department (Administration and EMS Station #1) and the Henderson County Rescue Squad, which while not a County Department, works hand-in-hand with each of the referenced departments.  The process involved first, the assessment individually of each department's functional requirements and the space necessary to adequately address those requirements. Next, meetings were facilitated with department representatives together to determine the feasibility of sharing common spaces and ultimately the consolidation of all three into one new building.  Space requirements, once determined, were followed with an identification of the necessary site requirements, an estimate of probable construction and project related costs, and commentary as to the basis for where a new facility should be located.

2. Background

The *Henderson County Emergency Management* Office includes the Emergency Services Director and the County Fire Marshal functions.  It also houses the Emergency Operations Center (EOC) from which centralized control and response is directed during any major weather event or declared emergency occurring in the County.  The department currently has five (5) employees and was moved into renovated space in the lower level of the former County Administration building in 2007. The emergency Management Director oversees the operation of the County's Emergency Medical Services department and is the County's principal liaison with the Henderson County Rescue Squad.

*Henderson County Emergency Medical Services (EMS)* provides advanced life support response to medical emergencies throughout Henderson County, 24 hours per day.  Ambulances are currently deployed from four strategically located stations including the main station located next to Pardee Hospital in downtown Hendersonville; it is this station which is addressed in this report.

The average annual call volume over the past three years (2011-2013) has been just under 11,600 per year.  Significant also, is that the average increase in the number of calls/year over the same period has been just under 600. The number of full-time, part-time and auxiliary personnel currently numbers 68.
The main station, which also includes department administrative, training and billing personnel, has been occupied by EMS since 1978.

The *Henderson County Rescue Squad* was established in 1957 as a (then) all volunteer organization to respond to emergency and life threatening events anywhere in Henderson County.  While remaining all volunteer for many years, the Squad today includes 72 paid full-time, part-time and volunteer members.  Today also, the Squad provides back up and support to the Henderson County EMS, all non-emergency medical transports between hospitals, patient residences and assisted living facilities within the County.  Its rescue capabilities include certifications and subsequent response in several categories of technical rescue including; swift-water, high angle/rope, dive recovery, wilderness & urban search, and confined space rescue.  The Rescue Squad has been in its current building since 1973.

While the squad averaged over 500 calls for service per year for 2011-2013, it is expected to exceed 2,000 calls this year (2014); for the most part due to the addition of the non-emergency medical transport service which it assumed in January.

3.   Existing Space Limitations
Note: the acronym *nsf* (net square feet) is used in this narrative.  Further discussion regarding *nsf* and *gsf* (gross square feet) is provided in Section __, Identification of Space Needs.

Emergency Management                                                        Current Space: 3,826 nsf
The current space is good, although several emergency vehicles and major pieces of equipment must be kept off site, several miles from the current office location.  Additional warehouse type storage is needed to accommodate supplies and better addresses specific loading and unloading requirements that would make it much more efficient to deploy and issue supplies during an emergency event.  Also, Additional space to accommodate a data/media control station within the EOC, with accompanying technology upgrades, would improve the receipt, formatting and redistribution of audio, visual and data regarding an emergency event as it is occurring together with the ability to monitor the response to the event.

Emergency Medical Services                                                 Current Space: 10,516 nsf
The condition of the building which includes EMS Base #1 and the administrative, training and billing operations is "poor".  As stated in the 2007 *EMS Operations Assessment & Planning Study;* "the building is old, not designed for the purpose it is currently used for, and is functionally inefficient."

The garage is *very* crowded as are the upstairs office and publically accessed entry and billing office areas. Additional storage space is badly needed.  Modifications have been made within what had been the primary training room to accommodate other needs.  Subsequently, the primary training room and support scenario/task training spaces were moved offsite.  A two story building with the garage and ambulances on the ground level and staff and important support spaces on the second level is *very* inefficient for an EMS operation.

Rescue Squad                                                               Current Space: 9,076 nsf
As the various specialized technical rescue capabilities have been acquired over the years so too have the specialized vehicles and equipment to support those capabilities.  As well, in assuming primary responsibility for non-emergency medical transports within the County January of this year, there have been additional increases.  Needless to say the facility itself has become very crowded. Since occupying the main building in 1973, a prefabricated garage size shed and a built garage have been added on site to provide necessary enclosures for several vehicles.

Current space limitations make post incident staging for very difficult; for example, drying space for dive suits and equipment, cleaning of specialized gear and equipment, and re-supplying ambulances and response vehicles.  The site itself has had several various unrelated functions and accompanying buildings added to it over the years which precludes further expansion on-site.  Further, current renovations underway to the main building, necessary to accommodate the added responsibility for non-emergency medical transport program staff, will further diminish already crowded staff meeting, training and support space.

4.   Identification of Space Needs
Site visits were made to each of the primary building locations, as well as the referenced off-site equipment/vehicle storage and training facilities.  Inspections of the existing spaces within each building were conducted and existing square footage noted and/or physically measured.  Department personnel at each location were questioned regarding their assignment and responsibilities, their individual concerns regarding space requirements and the basis for the needs identified.

Individual meetings were conducted with each County Department and with the Rescue Squad to discuss the type, function and basis for the various types of spaces needed. These meetings in each case were attended by the department heads and various employees.

Individual space lists were prepared for each focusing on the type of space and its intended function without regard to what *size* the space(s) should be; i.e. emphasis on *need* versus "how big".

Following agreement on the individual spaces needed, discussions addressed the number of people intended to use each space, the type of equipment or vehicle that was going to be housed in the space, and/ the quantities of materials, supplies, etc. that was going to be stored, used, consumed, etc. each space; ultimately, to estimate the approximate size of each space.

Space lists identifying individual spaces and total department area needs were then developed, documented, and reviewed with each department. The results are identified in the department space lists that follow.

Note that the first series of space lists identify the primary (main) building requirements only. Garage spaces which will include the vehicle bays are addressed separately and follow the primary building space lists.

The bold blue number at the upper right corner of the individual space lists is the current total net square feet (nsf) of the noted department's current facilities.

"Net" vs. "Gross" Square Footage
The interior, usable dimensions of a space or work area constitute the area's "Net Square Feet" or NSF. When wall thicknesses, stairwells, common circulation areas, interior mechanical space, etc. is all considered, the total building area that results is referred to as the total "Gross Square Feet", or GSF.

The *Area/Building Multiplier* used to calculate the net-to-gross difference in a building may also be referred to as the *efficiency factor.* This number will vary depending on the type of building and the complexity of its design requirements. In the case of the building addressed in this report, the net-to-gross "multiplier" will typically range from 25-30percent. The designer of the building may adjust that number in some instances, for example the referenced garage/vehicle bays are intended to have no interior walls yet will encompass several thousand square feet; i.e. a more efficient (smaller percentage) multiplier may be applied.

| Emergency Management | 3826 |
|---|---|
| Space/Area | NSF |
| **Public Access** | |
| Entrance Vestibule | 60 |
| Lobby/Seating | 80 |
| Small Conference Room [6] | 150 |
| Public Restroom | 60 |
| **Personnel** | |
| Administrative Assistant | 132 |
| Director | 240 |
| Fire Marshal | 156 |
| AFM/FI/PR; also w/Plan Review | 288 |
| **Staff Support** | |
| Copy/Work Room | 156 |
| File Room | 144 |
| Fire Marshal Equipment | 120 |
| Server Room | 80 |
| Utility Room | 100 |
| Evidence Storage (Secure) | 150 |
| **Emergency Operations** | |
| Secure Entrance Vestibule to EOC | 60 |
| Transition Lobby | 192 |
| IT/Data/Tech. Work Space | 100 |
| Operations Center | 728 |
| Op Center Equipment/Media Control | 120 |
| Restroom w/Shower-Men | 150 |
| Restoom w/Shower-Women | 140 |
| Bunkroom-Men | 140 |
| Bunkroom-Women | 140 |
| Dining/Break Area | 120 |
| Kitchen w/Pantry | 156 |
| Janitor Closet | 60 |
| General Equip & Supply Storage-A | 800 |
| General Equip & Supply Storage-B | 200 |
| Back-up UPS | 200 |
| Total Net Square Feet (NSF): | 5222 |

| Emergency Medical Services | 10516 |
|---|---|
| Space/Area | NSF |
| **Public Access & Billing** | |
| Entrance Vestibule | 60 |
| Lobby/Seating | 80 |
| Public Restroom | 60 |
| Reception | 24 |
| Billing Supervisor | 120 |
| Billing Office | 240 |
| Copy/WorkRoom | 156 |
| Medical Records | 320 |
| Staff Restrooms | 180 |
| EMS Billing Break Area | 110 |
| **EMS Administration** | |
| Manager | 156 |
| Training Officer | 120 |
| Quality Assurance | 120 |
| Logistics | 120 |
| Future | 120 |
| Training Materials & Equipment | 320 |
| Conference Room (8) | 200 |
| **Base Operations** | |
| Staff Entrance Vestibule | 60 |
| Mudroom & Gear | 150 |
| Staff Reports/Work Room | 180 |
| Supply & Stockroom | 600 |
| Narcotics Storage | 100 |
| Shift Supervisors [4] | 192 |
| Field Training/Asst. Supervisor Office | 192 |
| Copy/Work Room | 120 |
| Conf Room (4-6 people) | 150 |
| Storage room/ Tactical Medic team gear | 80 |
| **Staff Support** | |
| Dayroom | 288 |
| Kitchen/Dining | 144 |
| Supply | 20 |
| Fitness Room | 250 |
| Restroom/Shower-Men | 100 |
| Restroom/Shower-Women | 120 |
| Lockers (72) | 576 |
| Bunk Room-Men [2] | 240 |
| Bunk Room-Women [2] | 240 |
| Bunk Room-Supervisors [2] | 240 |
| Server | 80 |
| Utility | 100 |
| UPS | 150 |
| Janitor Closet | 60 |
| **Training** | |
| Multipurpose/Classroom [40] | 1000 |
| Senario Rooms | 648 |
| Chair, Table, Mat Storage | 150 |
| Total Net Square Feet (NSF): | 8736 |

| Henderson County Rescue | 9076 |
|---|---|
| Space/Area | NSF |
| **General Public Access** | |
| Entrance Vestibule | 60 |
| Lobby/Seating | 80 |
| Public Restroom | 60 |
| **Admin & Staff Offices** | |
| Chief | 156 |
| Deputy Chief | 156 |
| Assistant Chief(s) [2] | 180 |
| Assistant Chief [Finance] | 132 |
| Captain(s) | 160 |
| Billing/Reception | 132 |
| Gen. Office [Future] | 132 |
| Gen. Office/Small Meeting Room (16) | 400 |
| Records storage | 208 |
| **Base Operations** | |
| Staff Entrance Vestibule | 60 |
| Mudroom & Gear | 168 |
| Mail Room | 96 |
| Supply & Equipment Storage-A | 600 |
| Supply & Equipment Storage-B | 200 |
| EMT Reports/Workroom | 192 |
| Shift Supervisor | 120 |
| **Staff Support** | |
| Dayroom | 288 |
| Kitchen/Dining | 120 |
| Supply/Pantry | 24 |
| Restroom/Shower-Men | 160 |
| Restroom/Shower-Women | 170 |
| Lockers (72) | 576 |
| Bunk Room-Men [2] | 140 |
| Bunk Room-Women [2] | 140 |
| Bunk Room [2] | 70 |
| Laundry Space | 30 |
| Janitor Closet | 60 |
| Meeting Room [60 adults @ tables] | 1200 |
| Meeting Room Storage | 200 |
| Utility | 80 |
| UPS | 150 |
| IT / Server Room | 100 |
| Total Net Square Feet (NSF): | 6800 |

| Garage Area/Space by Department | NSF | Subtotal |
|---|---|---|
| Emergency Management | | |
| State Med Assist Trailer | 521 | |
| Light Tower/Trailer | 278 | |
| Generator | 62 | |
| Ranger & trailer | 174 | 1035 |
| EMS | | |
| Vehicle Bays-Type B | 5100 | |
| Decon Shower | 30 | |
| Laundry | 132 | |
| Restroom | 60 | |
| Biohazard Closet | 16 | |
| Equiment/Splint Wash & Dry | 120 | |
| Utility | 100 | |
| Air Tanks | 80 | |
| General Storage | 200 | |
| Vehicle Wash Bay | 798 | |
| Battery Chargers | 40 | |
| Bike Team Equipment | 80 | 6756 |
| Rescue | | |
| Vehicle Bays-Type A | 8160 | |
| Vehicle Bays-Type B | 3400 | |
| Decon Shower | 30 | |
| Restroom | 50 | |
| HD Laundry | 80 | |
| Drying Room | 200 | |
| Work Bench & Tool Room | 180 | |
| Utility Room | 156 | |
| General Storage | 600 | |
| Air Compressor / SCBA Room | 150 | |
| Vehicle Wash Bay | 798 | 13804 |
| Total Net Square Feet (NSF): | | 21595 |

Space Summary by Department
All numbers are in net square feet (nsf)

| Department | Building | Garage | Total NSF |
|---|---|---|---|
| Emergency Management | 5222 | 1035 | 6257 |
| Emergency Medical Services | 8736 | 6756 | 15492 |
| Rescue Squad | 6800 | 13804 | 20604 |
| Total | 20758 | 21595 | 42353 |

5. Consolidation & Shared Use

Meetings were held with Department heads and various staff specifically to discuss opportunities for sharing space in a single building. And, although the day-to-day responsibilities and demands placed on each department are different, each has enough in common, particularly if located in the same building, to consider the possibilities. The obvious consideration also, as long as efficiencies are not compromised, is that reducing total square footage will reduce the cost of construction.

In the discussions that occurred a number of areas were identified within each department's individual space list that was considered:

- § Building lobby & reception area
- § Training/multipurpose meeting space
- § Server & utility rooms
- § Vehicle wash area
- § Backup UPS space
- § Kitchen space
- § General storage space

And, although no department "lost" access to the spaces it needed, the breakdown of how the shared space was distributed was as follows:

| Department | Calculated as Individual Buildings | | | Consolidated | |
|---|---|---|---|---|---|
| | Building | Garage | Total | Reductions | Rev. Total |
| Emergency Management | 5222 | 1035 | 6257 | 1145 | 5112 |
| Emergency Medical Services | 8736 | 6756 | 15492 | 1480 | 14012 |
| Rescue Squad | 6800 | 13804 | 20604 | 1728 | 18876 |
| Total | 20758 | 21595 | 42353 | 4353 | 38000 |

Also, it is significant to note that the 4,353 square foot reduction is NET square feet; will translate into a reduction of approximately 5,400 gross square feet of building.

Garage space was discussed further as well. The vehicles and major pieces of equipment normally stored in garage space were identified as those that needed temperature controlled space and those that did not. Those that did were designated for "Type A" space and those that did not were designated for "Type B" space.

- § Type A space is that which will be located attached to the primary building itself and be consistent in construction materials and appearance as the main building.

- § Type B space will be enclosable and securable, however, separate (but convenient) to/from the main building and with the only utility required being electricity.

At present, the breakdown of the Garage space by type is as follows:

|  |  |
|---|---|
| Garage A | 17160 nsf |
| Garage B | 4435 nsf |

6.  Site Requirements

When considering site requirements for a building project the immediate concerns will include the footprint of the building (gross square feet) and parking requirements. Additional site requirements that the eventual designer must also consider will include:

§   Safe access and egress

§   Site perimeter and internal vehicle circulation; staff, visitors, vendors, and deliveries

§   Setbacks that may be required or desired from roadways and/or adjoining properties

§   Security of the site; limiting/restricting vehicle access to certain areas, and/or security fencing

§   Water retention or detention of runoff resulting from paved areas

| Area Requirements | NSF | Mult. | GSF |
|---|---|---|---|
| Building w/Garage A Space | 37,918 | 1.25 | 47,398 |
| Building w/Garage B Space | 4,435 | 1.15 | 5,100 |
| Parking-Staff | | | 35,750 |
| Parking-Public | | | 3,900 |
| Access/egress & site driveways | | | 14,500 |
| Building/parking-driveway buffer | | | 3,520 |
| Staging/loading/on site activities | | | 10,900 |
| Adjoinuing property setbacks | | | 14,000 |
| Water runoff/retention | | | 8,000 |
| Total Land Area (square feet) | | | 182,718 |
| Total Land Area (acres) | | | 4.19 |

7.  Probable Costs

When discussing the probable costs of a public building project, particularly a new building project, it is essential for budgeting purposes that two major categories of costs be addressed. The first is *Construction Costs,* for *both* the building and the building site. The second is *Project Related Costs;* those costs that will occur before, during and immediately after construction. Further explanation of these categories is offered as follows:

Construction Costs:

§   *Base Construction Costs*-the brick, mortar, steel, and glass that comprises the building structure
§   *Site Development*-the required grading, excavating, utilities, and paving

Project Related Costs:

§   Design Fees-architectural & engineering design fees and expenses
§   Site & Construction Materials Testing-soil tests, concrete consistency tests, etc.
§   Printing Costs- primarily for construction documents printed & distributed during bidding

§ Fixtures, Furnishings & Equipment-estimate of those items not otherwise provided by the contractor
§ Construction Escalation-from date of estimate to the estimated date of construction start
§ Project Contingencies-set aside required by Local Government Commission for public projects

Preliminary Estimate of Probable Construction & Project Related Costs

| Construction | GSF | Unit Cost | Total |
|---|---|---|---|
| Main Building | 47,398 | $ 125 | $ 5,924,750 |
| Support Vehicle Garage | 5,100 | $ 95 | $ 484,500 |
| Site Development | | Estimate | $ 500,000 |
| Subtotal-Construction Costs: | | | $ 6,909,250 |

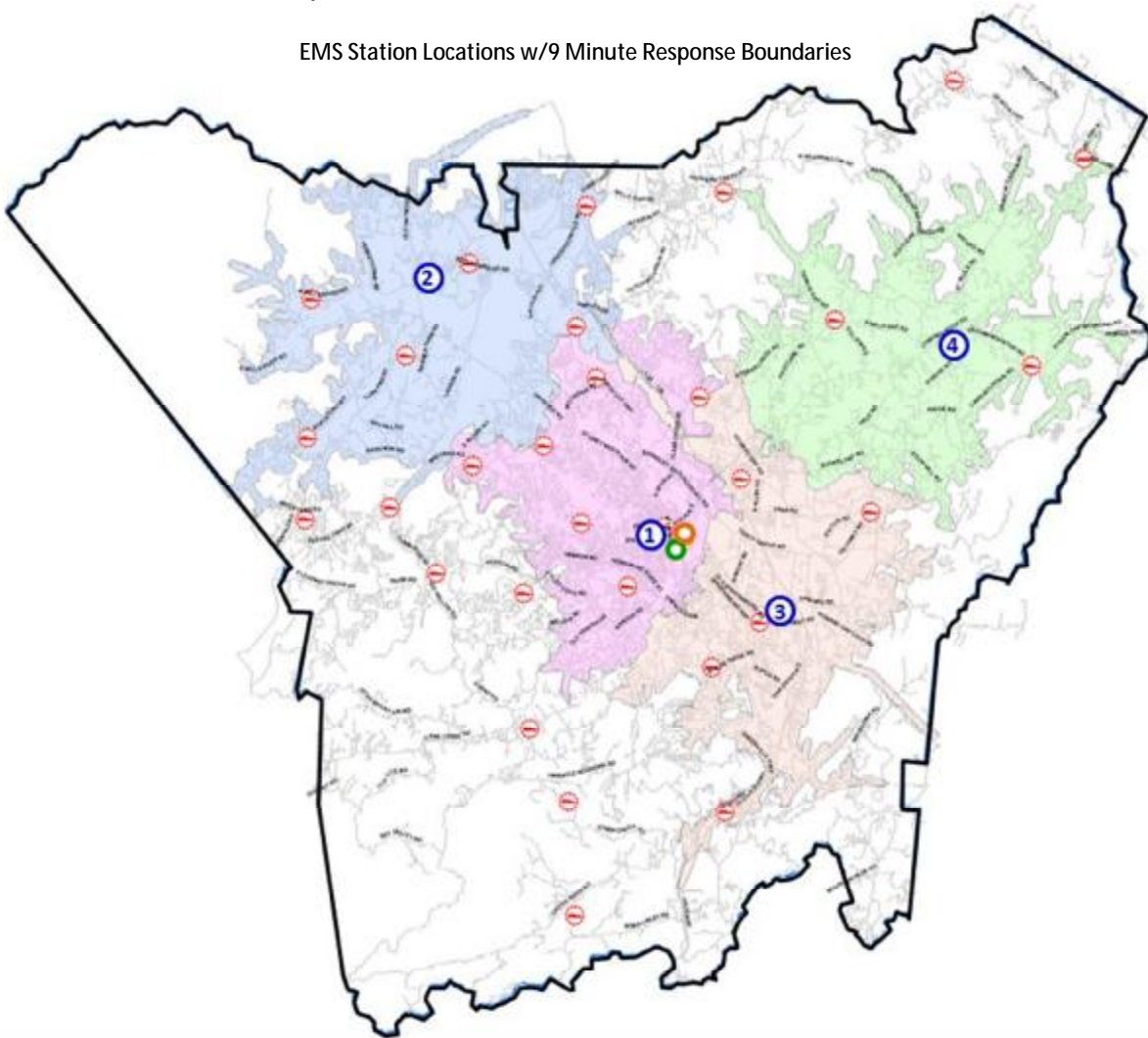| Project Related | | Unit Cost | Total |
|---|---|---|---|
| A/E Design Fees | | 0.07 | $ 483,648 |
| Site & Materials Testing | | 0.0025 | $ 17,273 |
| Printing | | Lump Sum | $ 16,000 |
| Fixtures, Furnishibgs & Equipment | | 0.04 | $ 276,370 |
| Escalation | | 0.05 | $ 345,463 |
| Contingencies | | 0.05 | $ 345,463 |
| Subtotal-Project Related Costs: | | | $ 1,484,216 |
| | | | |
| Total Estimated Project Costs: | | | $ 8,393,466 |

## 8. Facility Location

The consolidated facility that has been discussed thus far will house EMS, Rescue and Emergency Management. Conceivably, Emergency Management could be located almost anywhere when it comes to monitoring and directing a response to an emergency event. Rescue, in the event that they are called upon for their technical rescue capabilities, a location generally central within the County would be preferred. As to the Squad's recently assumed responsibilities regarding non-emergency medical transports (currently estimated to exceed 1,200 calls this year), a location in Hendersonville would be most convenient. However, with a volume of almost 12,000 emergency calls per year, it will be *critical* that EMS Base #1 is centrally located to respond to the area of the County where the considerable majority of those calls continue to occur year after year. In other words, the most appropriate location for this consolidated emergency services facility should be that which will be most appropriate for EMS.
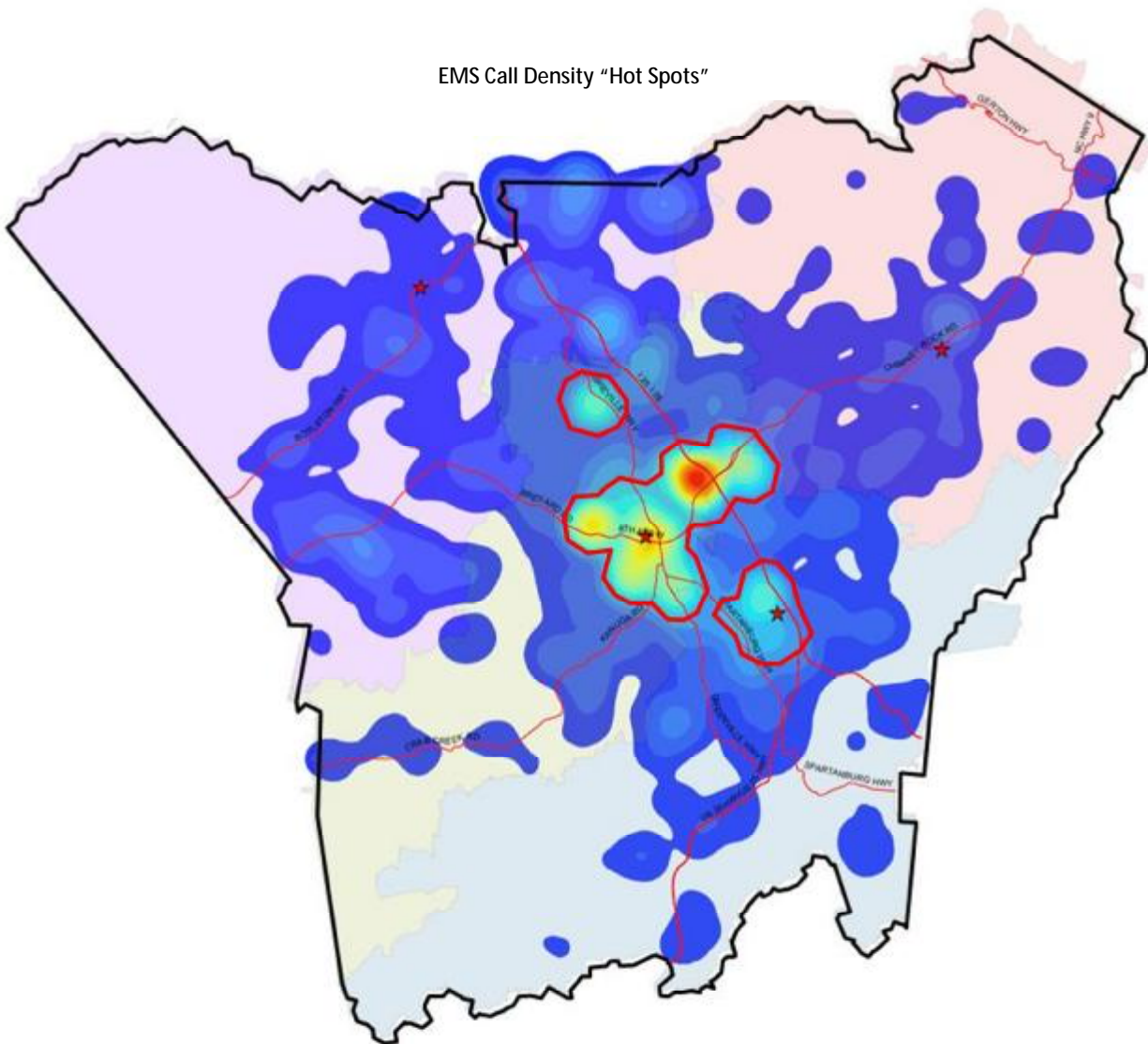
MAP #1
- § This map first identifies, with the blue outlined circles, the current locations of the four EMS stations within the County.
- § The orange and green circles adjacent EMS station #1 represent the locations of Emergency Management and Rescue respectively.
- § The smaller red outlined circles represent the location of 30 fire service stations that belong to 12 County Fire Departments and the City of Hendersonville.
- § The pastel colored areas that correspond to each of the four EMS stations represent the nine (9) minute travel distance perimeters in every direction from the respective bases.
- § Nine minutes is significant in that it is the EMS Department's time objective for responding to critical medical emergencies.
- § Of course there are white areas remaining on the map; many of them, at least currently, are sparsely populated and subsequently experience (comparatively) far fewer emergency calls; EMS does respond to *all calls* into these areas, however, with medical first responder assistance from the area fire departments.

EMS Station Locations w/9 Minute Response Boundaries

MAP #2

§   As the title of this map suggests the color variations represent the varying areas of EMS call volume within the County.

§   The solid dark blue and purple represent areas within which calls occurred, however few and far between.

§   In the bright light blue areas the call volumes were quite dense in terms of numbers, with the yellow, orange and red areas being where, if mapped in traditional fashion, the calls would literally be stacked on top of one another.

§   EMS currently deploys one 2-person Advanced Life Support (ALS) ambulance each, out of stations 2, 3, and 4; and two 2-person ALS ambulances out station 1.

§   The highest density areas are outlined with the heavy red line, and will be illustrated further on the map that follows.

EMS Call Density "Hot Spots"

MAP #3

§ Here, the call density "hot spots" are outlined on MAP #1 that depicted the 9-minute response boundaries of each EMS station.

§ EMS station #3 is in the middle of the lower encircled hot spot and station #1 is in the middle of the large central hotspot and within convenient distance to the remaining circled area.

§ The red arrow points to the location of a building that the County requested the consultant asses for possible reuse and location of the consolidated Emergency Services Facility.

§ It was determined not to be an appropriate location or structure for the purposes defined here.

§ Relocating EMS station #1 to this location, less than a mile from station #3, would literally take away coverage of the area of the County having the highest EMS call volume; i.e. it would turn the current red shaded area white.

§ The entire enclosed, heated/cooled area of the building is approximately 67,000 square feet

§ The total projected size of the consolidated Emergency Services facility proposed totals 52,500 square feet; however, the area needing to be heated and cooled is less than 20,000 square feet.

§ The consolidated Emergency Services facility needs to remain within the City of Hendersonville.

EMS Call Density "Hot Spots"