

## EMS System Review



Prepared for:



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by

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# **City of Venice EMS System Review**

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## **Project Overview**

The Holdsworth Group was retained to conduct a review of the EMS system in the City of Venice evaluating the current system components, looking back 18 months for trends and to look ahead and help plan for future potential needs. The primary consultant was Bob Holdsworth.

For this review, I evaluated call and revenue data from January 1, 2017 through August 30, 2018. I also reviewed calendar year 2016 data which was consistent with the 18-month period reviewed in greater detail.

The project included in-person interviews, data requests, direct observation of the system, review of the City demographics and a review of the current contracts with Sarasota County Fire Department (SCFD), Sarasota County Public Safety Communications Center (PSCC), and IAFF Local #2546.

The project kicked off on July 8, 2018 and began with an on-site visit to the City, in person meetings with stakeholders as well as 15.0 hours of direct system observation on July 9<sup>th</sup> and 10<sup>th</sup> riding with the crews of Engine 52 and listening to the system via radio.

I also witnessed and called in a motor vehicle crash on the way to my hotel, remained with the driver, which allowed me to actually experience how the system operates right from the initial 9-1-1 call as any citizen would.

There are three main reasons for conducting the system evaluation in this manner:

1. Direct observation provides a true look at system dynamics.
2. Data validates past activity and performance.
3. Interviews add subjective information that can't be obtained through data analysis alone.

During the 'get started meeting' we were clearly told that there were no specific ground rules, expected outcomes or system design options that either the City or the Fire Department specifically wanted to explore or exclude.

The primary deliverable is to be an analysis of ways to enhance the EMS system in the City with a discussion of the feasibility of the Venice Fire Department taking over primary responsibility for the EMS system in the City and upgrading to the Advanced Life Support (ALS) level.

During the evaluation there was discussion about a plan that the Fire Department had been working on to assume responsibility for EMS service within the City limits over a phased in, multi-year period.

I did review components of this draft business plan.

Upon our review of the system, I agree with the basic premise of the Fire Department's internal draft and have adopted some of their components into our suggested action plan and recommendations.



## Community Demographics / System Impact

Venice is a community encompassing 16.8 square miles with a population of approximately 21,700. The population has grown approximately 1.5% per year in each of the last two years.

Based on the latest census, 80% of the City population is age 45 or older. The median age is reported at 69.0 years of age.

Traditionally this age group, specifically the age 65 and older component, (approximately 57.5%), are the highest users of the EMS system. If this trend continues, the impact on the EMS system will be an increase of about one (1) call per day over the next several years.

An important thing to remember when evaluating the resources and budgets needed to serve a community is an industry term: *Cost of Readiness*. This concept requires that you build the EMS system to ensure the number of staffed units that may be needed based on the numbers of historical and **anticipated** 9-1-1 REQUESTS for service.

While all REQUESTS for service demand a timely response, revenue can only currently be derived from actual patient transports. More on that later.

An industry predictive formula identifies that for every 10,000 residents there should be approximately 1-3 EMS system activations per day. Where there are special circumstances such as a high senior population, significant poverty levels, an influx in daytime population or high tourist populations these numbers rise to 3-6 activations or more per day. This rule holds true in Venice due to the very high number of seniors in the City.

**NOTE:** Using the formula: an average of 5 activations per 10,000 per day / 22,000 people = 11 responses per day x 365 = 4,015 calls).

In 2017, in the City of Venice there were 5,652 EMS responses. (15.48 per day)

In 2018 the call volume through June 30<sup>th</sup> is 2,897 (annualized to 5,794 +/-). This represents a 2.2% increase in utilization. Not all of these responses resulted in transports. [Source: Sarasota County Fire Department (SCFD) report]

The presence of more than a dozen nursing homes and assisted living facilities as well as the intended construction of two new hospitals, one inside the City limits and the other just outside the City limits, parts of I-75 and new residential development all add to the demand on EMS.

These factors all contribute to the current actual daily average of 15.5 +/- EMS activations per day.

The City also has several light industrial complexes, warehouse operations, and of course calls related to the beach and boating.

The other unique factor is that the population increases from December to March increasing call volume.

Data chart showing that all of Sarasota County is aging...this will continue to put a strain on EMS services throughout the County in the years ahead.

	2016		2025		2035		2045	
Total Pop	399,538	-	444,602	-	480,006	-	503,650	-
Under 18	59,680	14.9%	64,841	14.6%	70,972	14.8%	73,850	14.7%
Age 18-39	76,347	19.1%	86,435	19.4%	90,743	18.9%	94,959	18.9%
Age 40-64	129,030	32.3%	126,375	28.4%	126,279	26.3%	141,031	28.0%
65 and Over	134,481	33.7%	166,951	37.6%	192,012	40.0%	193,810	38.5%

*Source: Bureau of Economic and Business Research (BEBR), Florida Population Studies Bulletin 178, Population Projections by Age, Sex, Race, and Hispanic Origin for Florida and its Counties, 2020-2045, With Estimates for 2016, June 2017. Prepared by Sarasota County Planning Services.*

## Current System Overview

When a citizen dials 9-1-1, the call rings at the Public Safety Answering Point (PSAP) which is the Sarasota County Public Safety Communications Center (PSCC).

If the call is for a medical event, pre-arrival medical instructions are provided to the caller, and the closest available SCFD Rescue. When the caller identifies a situation deemed a significant life threat, cardiac arrest, choking, stroke, serious motor vehicle crash, shooting, stabbing, unconscious victim, etc. a Venice Fire engine is also dispatched. All VFD engines are staffed at the Basic Life Support (BLS) level.

Dispatch data previously requested by Venice Fire, and therefore not requested a second time from PSCC by our project team, indicates an average response time for Venice Fire units of four minutes and fifteen seconds (4:15) and an average for SCFD rescue units of seven minutes and twenty-two seconds (7:22).

An independent consulting report, prepared for SCFD, indicates that rescues are on scene in the county 78% of the time under eight minutes (8:00).

The typical high-performance EMS system should expect a target of 90% compliance with the eight-minute response time based on nationally accepted guidelines and the fact that the makeup of the county is mainly suburban in nature.

Because of the high percentage of seniors living in the City, response time is critical to survival rates. Currently all VFD engines are equipped with Basic Life Support equipment and Automatic External Defibrillators (AEDs).

An EMS industry best practice as well as the American Heart Association's Chain of Survival set forth the guidelines for responding to a Heart Attack/Cardiac Arrest as follows:

- Citizen or other CPR-trained responder with an AED within four minutes
- Basic Life Support (BLS) ambulance on scene within eight minutes
- Advanced Life Support (ALS/paramedic) on scene within twelve minutes

**NOTE:** Nothing in this report should be construed as criticism of the work done by the Sarasota County Fire Department personnel or the quality of the medical care provided.

The SCFD rescues are staffed at the Advanced Life Support (ALS/paramedic) level and are arriving within the eight-minute time guideline, based on their county wide statistics, only 78% of the time.

There have been concerns raised by the VFD about the location and availability of the Rescues, especially Rescue 52, which has been reported as one of the busiest in the County.

The scope of this project did not allow for an in-depth analysis of every call in the City to determine the number of calls where Rescue 51, 52 or 53 were not the responding units due to multiple calls in the City or the fact that these units had been tasked with emergency responses elsewhere in the County.

Should the VFD assume responsibility for the EMS response in the City, **the VFD Rescues would be dedicated to the City**, not routinely deployed throughout the County. They would be expected to respond out of the City on mutual aid calls as part of the County's mutual aid plans.

If the VFD were to take over operational control of the City's EMS system, it would be critically important to review all mutual aid requests to ensure that the VFD rescues were not being routinely pulled out of the City due to staffing cuts or reassignment of resources by SCFD after the start-up of VFD EMS operations.

The City of Venice generates approximately 10% of the SCFD's entire EMS response volume and between ad valorem tax payments and patient billing the City accounts for approximately 10% of the SCFD budget.

- SCFD Website dated 11/17/18 lists 56,751 EMS responses
- Venice generated 5,652 EMS responses (9.95%)
  
- SCFD report indicates 38,604 EMS transports in 2017
- Venice generated 4,045 transports (10.4%)
  
- SCFD published Fire/EMS budget 2017 \$39,389,018
  
- Venice ad valorem tax contribution \$ 2,500,000 (2019 estimate)
- EMS billing revenue net of allowances \$ 1,444,818
- Total Venice \$ 3,944,818 (10.0%)



The City residents currently pay \$2.4 million dollars in ad valorem taxes (the current rate is .66 mil) to the County for EMS service. The 2019 estimate is \$2.5 million dollars. The focus of this report is solely focused on how to improve patient care and response times for the residents of the City of Venice for the same or lower cost.

The Venice Fire Department is NOT currently sent on lower acuity medical calls unless there is going to be a known delay of an ambulance. In 2017, Venice Fire was only sent on 42.7% of City EMS calls even though it is well documented that VFD could be at the patient's side at least three minutes (3:00) sooner.

Through June 30, 2018 there were 2,897 SCFD EMS responses. VFD was dispatched to 1,266 of them (43.7%).

Given the current system configuration, there is a case to be made for not sending VFD resources to every EMS call, if the calls are properly triaged by the dispatchers at PSCC.

However, the stronger case to be made is that if the VFD were to assume responsibility for the entire EMS system, patients would have trained ALS responders at their side, assessing and treating the situation significantly faster.

**Important Definitions:**

Activation time:	time call is received to the time the unit is responding
Response time:	time the call is received to time the unit is at the scene
Travel time:	time the unit signs enroute to time the unit is on scene

## EMS Economics

The current EMS system in the County, as in almost all parts of the country, is funded through a combination of tax revenue and billing Medicare, Medicaid and Commercial insurance plans for completed transports.

The billing rate and subsequent reimbursement for these calls is based upon the level of medically necessary care provided to the patient. It is NOT based on the level of personnel that responded to the call.

There are significant changes proposed for the EMS systems of the future which are expected to include payment for non-transports, as well as something called Community Paramedicine which utilizes specially trained EMS staff to evaluate patients in their homes.

The goal is to provide better healthcare, with fewer transports, at a lower cost. There is value added to these initiatives when local responders are intimately familiar with the patients, their homes and the services in the community.

Should VFD assume responsibility for the EMS system, being prepared to participate in Community Paramedicine initiatives should be included in the operations planning as these programs become available. The City has a high percentage of seniors who are often the highest users of EMS services and who can also benefit most from in-home, coordinated health care and wellness checks.

As you review the charges contained in the chart that follows, please understand that we are explaining the state of EMS reimbursement as it currently exists. As you look at the payer mix, it is critically important to understand a couple of things about the charges and the insurance revenue stream:

- Regardless of the actual number of requests for service (911 calls), only **completed** calls result in a billable event. Cancellations, refusals, and stand-bys do not result in any revenue, yet the organization must expend resources / expenses to have an ambulance or engine company staffed and able to respond. Currently, no revenue can be derived from engine company EMS responses, strictly patient transports.
- The amount listed as the Medicare Allowable Rate is the amount that, by participating in the Medicare program, you agree is the maximum compensation you're allowed.

- Medicare then pays 80% of the Allowable Rate and the patient or their supplemental insurance is responsible for the remaining 20% co-pay. The differential between the Retail Rate and the Medicare Allowable Rate is money that can neither be billed nor collected, it is a contractual allowance (write-off) in accordance with Medicare regulations.
- The amount listed as the Medicaid Allowable Rate is the amount that, by participating in the Medicaid program you agree is the maximum compensation you're allowed.
- Medicaid then pays 100% of the Allowable Rate. The differential between the Retail Rate and the Medicaid Allowable Rate is money that can neither be billed nor collected, it is a contractual allowance.

Based upon the data provided by the SCFD's billing service, this is what the two-year payer mix average looks like in Venice. The private retail rates currently reflect only 10.3% in the traditional insurance and 1.2% in the self-pay categories. As your population over 55 continues to age, the shift from full rate pay to Medicare rates will continue.

This will require that the EMS system be tax subsidized moving forward because the Medicare and Medicaid rates are not expected to rise substantially unless Congress acts.

Charge Item	2018 Retail Rate BLS	2018 Retail Rate ALS-1	2018 Retail Rate ALS-2	Medicare Rate BLS	Medicare Rate ALS-1	Medicare Rate ALS-2	Medicaid Rate BLS	Medicaid Rate ALS-1	Medicaid Rate ALS-2
BLS Base	\$600.00	\$650.00	\$650.00	\$354.45 Allowable	\$420.91 Allowable	\$609.21 Allowable	\$136.00	\$190.00	\$250.00
Actual payment	Varies by plan	Varies by plan	Varies by plan	\$283.56 80% Care, 20% patient co-pay	\$336.73 80% Care, 20% patient co-pay	\$487.37 80% Care, 20% patient co-pay			
Mileage	\$10.00	Same	Same	\$7.37	Same	Same	\$0	\$0	\$0
Percent of volume	10.3% Insurance 1.2% Private pay			86.9% Medicare	NA	NA	1.6%		

In Appendix A of this report you will find a pro-forma revenue projection showing the total expected net collections that the City could expect if it were in control of the EMS system including the ambulance transports.

The number is consistent with the historical collection rates reported by SCFD.

The projection uses the same payer percentages although I have suggested slightly higher Retail Rates for the two levels of ALS calls.

I suggest a Retail Rate of \$700 for ALS-I and \$800 for ALS-2.

Only 11.5% of the calls that would be subject to these however the City should charge for them.

**That rate change has NO impact on the seniors or those on Medicaid.**



## System Utilization

During my time in Venice, and in meetings held with stakeholders as well as my direct observation of the system, there were concerns voiced by many about the timeliness and availability of the SCFD rescues.

I did ride with Engine 52 for a total of 15 hours. Additionally, I was able to listen to the system via radio while with the Chief and the department's officers.

On July 9, 2018 I was in station 52 or responding with Engine 52 from 08:00-22:00 and physically saw Rescue 52 three times during that time period.

We did several EMS calls and did not have Rescue 52 respond to any of the calls with us. We did work with Rescue 51, Rescue 16 and Rescue 81 from North Port.

On July 10, 2018 I was in station 52 or responding with Engine 52 from 08:30-22:00 and Rescue 52 was in quarters several times during the day. We did responses with Rescue 52, Rescue 51 and Rescue 22.

I also toured the City both with the VFD Chief and with Engine 52 visiting both station 51 and station 53. During these visits, no SCFD rescues were in quarters.

I realize that my observation period is simply a snapshot of the system over a 48-hour block of time. However, my observation time was conducted during the 'slow season' and I was told numerous times that what I observed is the norm.

Much of the discussion centers around the fact that the Rescues are pulled away to respond to calls throughout the County, as you would expect. Also discussed by several was the fact that SCFD on-duty training is reportedly conducted at SCFD station 5 which is located a significant distance from the center of the City.

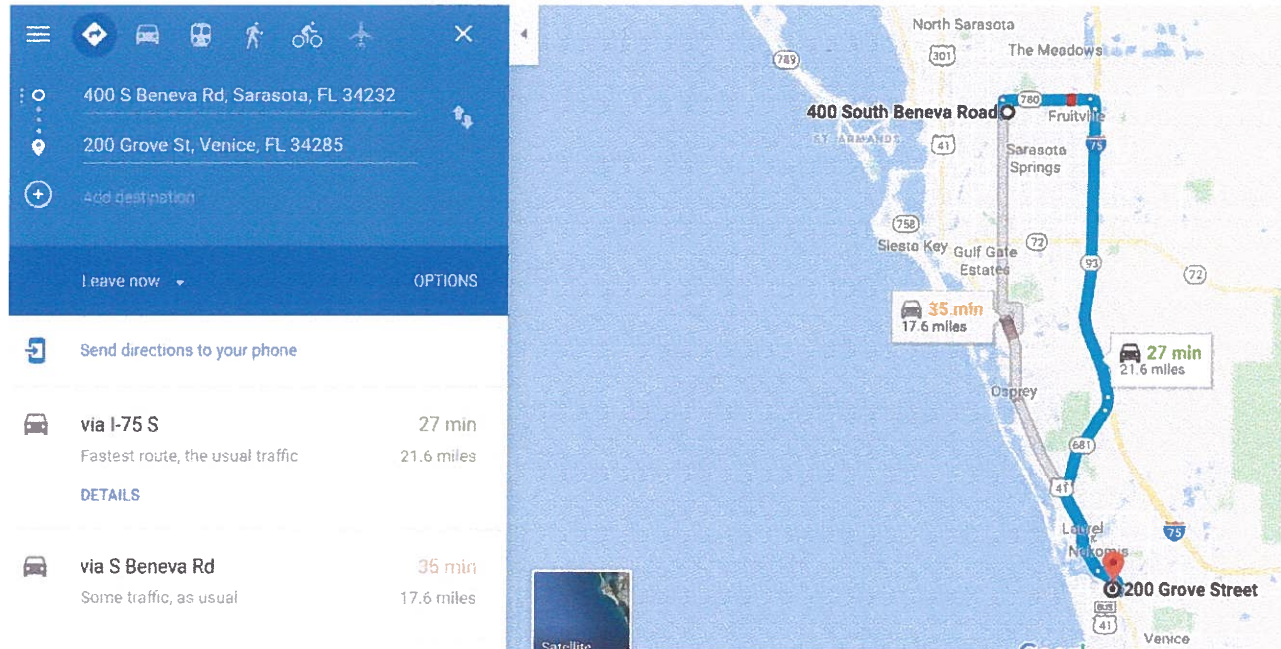
When training happens, and multiple Rescues are involved, response times are elongated. VFD identifies that they are not notified of these training events, since the SCFD rescue staff does not answer to VFD officers.

This would not be the case if VFD assumed control of the EMS system since all personnel would answer to a single command staff and training is conducted typically within the City limits.

We were unable to quantify this practice as training is not recorded as an event and the Rescue's starting point is not captured for responses.

## Station 5 to VFD HQ per Google Maps

Lists 17.6-21.6 miles as the travel distance based on route and traffic.



Also, during my visit to the City, on my way back to the hotel on the 10<sup>th</sup>, I witnessed a motor vehicle crash at the traffic circle at East Venice and Jacaranda.

I spoke with 9-1-1, which was answered on the 2<sup>nd</sup> ring. I informed them that I was on scene with an impaired driver, that a light pole had been knocked down, and that no wires, fluids or hazards were impeding traffic.

After approximately 15 minutes, no officer had yet arrived but an SCFD Rescue drove by the opposite way, turned around and stopped to render assistance. I gave them report and left the driver in their care.


About 45 minutes after I got to my hotel, I did get a call from the investigating officer to verify some accident information.

## Venice Fire EMS Enhancement

In deference to Chief Carvey and his staff, you will find portions of the plan developed by the VFD shown as excerpts in this report. I could create the same basic plan but since the work is done, and I independently came to similar conclusions, I chose to include their work. They deserve the credit.

Theirs is a well thought out plan, I have reviewed it, made some suggestions for modifications and ways to reduce some of the start-up expenses and developed the revenue projections to support the implementation.

City Council should feel both comfortable and proud of the fact that a non-ALS department has developed such a thorough ALS upgrade plan including having already been approved by the County to provide ALS service as evidenced by the awarding of their Certificate of Need in April of 2018.

EMERGENCY MEDICAL SERVICES	
CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY	
<p><b>WHEREAS</b>, pursuant to Section 401.25, Florida Statutes, every person, firm, corporation, association, or governmental entity owning or acting as agent for the owner of any business or service which furnishes, operates, conducts, maintains, advertises, engages in, proposes to engage in, or professes to engage in the business or service of providing prehospital or interfacility advanced life support services or basic life support transportation services must be licensed as a basic life support service or an advanced life support service, whichever is applicable, before offering such service to the public; and</p>	
<p><b>WHEREAS</b>, as a prerequisite to issuing such license, the Florida Department of Health requires the applicant to obtain a Certificate of Public Convenience and Necessity from each county in which the applicant will operate; and</p>	
<p><b>WHEREAS</b>, Sarasota County Ordinance, codified in Article II Emergency Medical Transportation Services (EMTS) states that governmental entities providing EMTS within Sarasota County shall be granted a Certificate of Public Convenience and Necessity upon submittal of an affidavit, executed by the Emergency Services Medical Director for that governmental entity; and</p>	
<p><b>WHEREAS</b>, the City of Venice has submitted such affidavit certifying that the provision of Advanced Life Support (ALS) Services by the Venice Fire Department is necessary for the health, safety and welfare of the City of Venice, the Board of County Commissioners hereby issues a Certificate of Public Convenience and Necessity to the City of Venice.</p>	
<p>In issuing this Certificate it is understood that the above named ambulance service will meet the requirements of State legislation, regulations and local ordinances, and provide ALS ground emergency medical transportation services as necessary for the health, safety and welfare of the City of Venice.</p>	
<p> Charles H. Henry, Director Sarasota County Health and Human Services</p>	<p><u>4-24-2018</u> Date</p>

## **System Model Options**

There are basically two options for the City to consider moving forward. Your community has a significant call volume and should have dedicated Advanced Life Support services that strive to meet or exceed the 90% compliance with the Chain of Survival response time criteria mentioned earlier.

It is interesting to note that because of the number of seniors and nursing home/assisted living centers in the City, that the call volume in Venice is on pace with the published call volume in the City of North Port which has twice the population.

- **SCFD rescues with VFD ALS engines**
- **VFD 3 ALS Engines & 3 ALS Rescues**

### **Option #1**

#### **SCFD rescues with VFD ALS engines**

The easiest and simplest option is to maintain, yet refine, the current system with the SCFD. This is actually the first phase of the VFD plan enhanced to improve the response times of SCFD Rescue units.

Under this option, the City and County would have work together to decrease the response times of SCFD Rescues within the City to meet the 90% Chain of Survival 8:00 minutes or less response time guidelines.

The City should ask SCFD for a plan that ensures that at least one Rescue is always dedicated to the City and that the needs of the County as a whole do not deplete the demonstrated need to keep a Rescue within the City.

To assist with the overall improvement of patient care, VFD would upgrade the crew and capabilities of Engines 51, 52 and 53 with 24/7/365 ALS/paramedic staffing.

This would get a team of responders on scene with ALS/paramedic capabilities within 4:00 or less.

Since no revenue can be derived from engine company EMS responses, the ad valorem tax amount paid to the County would need to be decreased to subsidize the system enhancements.



This plan would require the hiring/training of at least 12 firefighter/paramedics and the investment in ALS medical equipment.

A pro-forma budget for this option can be found in Appendix B.

## **Option #2**

### **VFD - 3 ALS Engines & 3 ALS Rescues**

This option will take the most time, approximately 2-3 years and have significant start-up cost as well as changing the make-up of the Venice Fire Department.

The benefits of making this investment however are significant:

- Control of the EMS system with the ability to address the growth and aging of the population.
- Integration with the existing VFD staff with a single chain of command
- Achieving an increased level of service for the same investment
  - Currently three (3) SCFD ALS rescues (3 medics)
  - Proposed three (3) VFD ALS engine companies plus three (3) VFD ALS rescues (6 medics)
- Shorter more predictable response times

Based on the staffing and the platoon system the VFD uses, 24 hours on and 48 hours off, a three (3) platoon system, this is the **minimum** number of staff needed:

- Rescue 51 (3) paramedics (3) EMT(s)
- Rescue 52 (3) paramedics (3) EMT(s)
- Rescue 53 (3) paramedics (3) EMT(s)
- Engine 51 (3) paramedics replaces an existing EMT position
- Engine 52 (3) paramedics replaces an existing EMT position
- Engine 53 (3) paramedics replaces an existing EMT position

Additionally, an EMS Battalion Chief who should be a paramedic, and coverage for sick, vacation and Kelly day coverage will require the hiring of six (6) additional medics.

Total personnel needed:	24 medics	9 EMTs	1 BC	34
Total <b>new</b> positions:	15 medics	9 EMTs	1 BC	25

The VFD plan accounts for a three-year phase in of the deployment of this model accompanied by the simultaneous buy out of certain members of the department who are still enrolled in the older, more expensive pension plan.

This would accomplish the replacement of EMTs on the engines with paramedics at the incremental cost of the stipend contained in the union contract.

The base pay of these new firefighter/paramedic hires would be lower than those members bought out so an aggregate savings to the department/City will be realized while increasing VFD capabilities and EMS service levels to the community.

Excerpt from VFD internal draft plan: (edited slightly)

*The first priority will be to send up to 10 qualified Firefighter/EMT's to either Manatee Technical College or Sarasota Technical College to complete Paramedic School. Both schools offer different schedules from shift based (longer completion) to traditional daily attendance (faster completion).*

*The shift-based class has many advantages. The student only goes to school when they are on duty, so from 0900 to 1600 they attend class, after 1600 hours they return back to the station and finish their shift and on their two days off, they can study at home. This type of class takes longer to complete however it is most effective for success of the student. The more traditional schedule of going to school Monday through Friday has a much shorter completion time, but it is fast paced and can easily burn a student out.*

*Paramedic school takes between 11 to 14 months to complete depending on the school and class schedule. Within the first month after completing paramedic school they will need to take the State of Florida Exam for State Certification. The tuition of both schools is similar, approximately \$6,500.00 per student.*

**Consultants note:** Work with the City Attorney to draft an agreement between any members put through school by the Department that requires a minimum commitment of service to the department or repayment of the tuition. You would not want to incur the tuition and overtime expense to train a paramedic and have them immediately resign and accept employment elsewhere.

*The initial exam fee is \$75.00 and once they receive their initial certification they will need to renew their license every two years at a cost of \$45.00.*

*By sending up to 10 personnel to class there will be a need to staff the department with overtime during the hours that they are in school. This amount is a significant one-time cost, not a recurring expense.*

*The number of paramedics needed to staff ALS engines year-round is twelve (12). Since we are sending only ten (10) firefighters to paramedic school, it is our recommendation that when we hire future employees, we advertise and hire firefighter/paramedics until we meet our bench mark.*

*This will continue to be the new standard of hire before and after assuming the transport role as well.*

## **Capital investment**

### **Option one or stage one of full EMS operational control All ALS engine companies**

The capital investment would be five (5) cardiac monitors each costing approximately \$45,000 each. Since three are deployed 24/7/365, the remaining two are for back-up and to have gear in the EMS Battalion Chief's vehicle.

We would suggest leasing the Lifepak 15 monitors on a 5-year program including preventative maintenance. This will provide for a natural replacement schedule and keep the initial investment low.

Typically, the municipal lease rate and/or State bid contract leasing, has had a built in 3% interest rate. You will need to confirm current availability and rates.

Also, should the City wish to terminate the program and return to the County system, the commitment is only 5 years.

Additional ALS equipment, medications and supplies will cost approximately \$5,500 per engine company with two spare sets. \$27,500



### **Stage two of full EMS operational control:**

We recommend phasing in the transport capability over two additional years. Start by putting Rescue 52 in service as soon as possible. This allows you to begin transport responsibility slowly and it also starts generating billing revenue to subsidize the program.

Then six to twelve months later add Rescue 51 and as staffing and data dictate, six to twelve months later, Rescue 53.

If call volume increases, or SCFD rescue availability statistics dictate, some acceleration of this schedule may be needed.

As each Rescue unit enters service you should retain a portion of the ad valorem taxes...\$834,000 (33% of 2019 tax estimate) retained per Rescue placed in service.

At full staffing and system responsibility, the full amount of the taxes, \$2,500,000 would be reallocated to VFD EMS operations, and the estimated \$1,549,000 in billing revenue (Appendix A) would also be generated by the EMS division.

### Pre-planning

As you get ready to begin the transport phase you will need to commit to the lease or purchase of Rescue ambulances at least 6 months in advance to allow time for the units to be built.

The capital investment/lease will require two (2) rescue ambulances on the first day of operations. The primary unit in service (Rescue 52) and a second/reserve unit in case of a mechanical failure, accident or other event.

We would strongly recommend that the initial order be for three (3) units. This gives you the option of quickly ramping up operations of Rescue 51 if the need arises, and still provides you a spare. Also, since they are being built together, perhaps some economies can be negotiated.

When you are fully staffed and responsible for the EMS system you will need a **minimum** of four (4) Rescue units, our budget is built on leasing of five (5).

Typically, the municipal lease rate and/or State bid contract leasing, has had a built in 3% interest rate. You will need to confirm current availability and rates.

Also, should the City wish to terminate the program and return to the County system, the commitment is only 5 years. This plan also has the built-in advantage of constant fleet modernization.

Currently SCFD's capital plan calls for their Rescues to be replaced after seven (7) years of service. Under this plan the VFD Rescues would be replaced at the end of each lease cycle – every 5 years. This should also help contain maintenance costs.

There are two types of rescue ambulances that would work in the City of Venice. Because the majority of your transports will be to the local hospitals, that involve shorter transport distances, and your primary response area is only 17 square miles, a slightly different unit than what SCFD uses may be appropriate.

These are the two types we suggest you consider:



Sarasota Rescue 51  
Freightliner chassis  
Horton ambulance conversion  
Cost +/- \$270,000 each



Type one  
Ford 5500HD  
Horton ambulance conversion  
Cost +/- \$225,000 each

Here are the specifications of two different Type-1 configurations direct from Horton, the manufacturer of the SCFD units. These are the most typical choices by Fire Departments.

As you can see, the only significant difference is the overall length, the Ford chassis unit is 6" shorter. The patient compartments are the same.

Source: <https://www.hortonambulance.com/type-1-ambulance-trucks>

SPECS						
Chevrolet	Chassis	Model	Length	Width	Headroom	Wheelbase
	4500HD	603	167	96	72	189
Dodge	4500HD	623	173	96	72	189
	5500HD	603	167	96	72	189
Ford	5500HD	623	173	96	72	189
	6500HD	623	173	96	72	189
Freightliner	4500HD	603	167	96	72	189
	5500HD	623	173	96	72	189
International	4500HD	603	167	96	72	189
	5500HD	623	173	96	72	189

Additional capital /lease will be four (4) additional Lifepak 15 monitors on a 5-year program including preventative maintenance. This will provide for a natural replacement schedule and keep the initial investment low.

At full capacity you will have six (6) monitors in service 24/7/365 and two (2) spares in addition the unit in the EMS Chief's vehicle.

Typically, the municipal lease rate and/or State bid contract leasing, has had a built in 3% interest rate. You will need to confirm current availability and rates.

Also, should the City wish to terminate the program and return to the County system, the commitment is only 5 years.

Additional ALS equipment, medications and supplies will cost approximately \$5,500 per engine company with two spare sets.

## **Additional Expenses**

Regardless of which option is chosen, there are some other costs that will be incurred:

### **Medical Director**

All ALS services are required to have a Medical Director who is responsible for developing patient care protocols, approving medics as they are hired and helping to address and quality, training or patient care issues. Both SCFD and North Port Fire utilize Dr. Newman in this role. He is in the process of choosing another MD to work with him and eventually take his place. This is a contracted position.

### **Quality Assurance/Quality Improvement (QA/QI) Program**

The Medical Director will require a QA program that reviews all or an agreed upon percentage of calls for compliance with protocols, thoroughness of documentation and overall patient care. This can be provided with in-house personnel however, in our experience, it is often best provided by an external provider. We endorse Girard & Associates.

Contact: Paul Girard [www.GirardAssoc.com](http://www.GirardAssoc.com)

### **Electronic Medical Records Software**

Documentation of all medical care provided must be documented. In the EMS industry an electronic Patient Care Report (e-pcr), protected by HIPAA, is produced for all calls. There are several good programs on the market. SCFD uses a program called ImageTrends. There also three others that we are familiar with emsCharts, ESO and Zoll.

It will be important to review any potential choices with the County Dispatch Center to ensure that data can be sent electronically to populate the computers that will be located in the engines and ambulances.

### **Tablets/Computers**

Each EMS unit, engine and ambulance, will need to have a tablet or laptop on board that will be used to complete the e-pcrs discussed above. These need to be WIFI enabled and must be able to be detached from the unit to go with the paramedic to the patient's side.

The units should also have wireless connectivity through hotspots that can be added in to each ALS unit.



If the full EMS system control option is chosen

### **Billing Service**

There is currently no billing available for ALS engine response. This may change in the future with the expansion of Community Paramedicine programs and the potential for treat, no-transport payments.

If you assume responsibility for the entire EMS system you will need to engage an EMS billing company to process the field e-pcrs and submit them to insurance companies using the correct codes.

Most of these firms charge a fee equal to 6-8% of the revenue collected with all postage, paper and other costs included in that fee.

SCFD uses Intermedix as their billing service. You may wish to engage them as they are familiar with the region and many of your facilities. You may also wish to engage a separate firm with no ties to SCFD.

We would recommend:

#### **Quick Med Claims**

Contact: Gary Harvat

<https://www.quickmedclaims.com/>

Full disclosure: QMC is the company that bought our EMS medical billing division in 2017.

#### **Cornerstone AdminiSystems**

Contact: Nicole Rhoads

<http://www.cornerstoneadminisystems.com/>

### **The real questions that the City and VFD need to answer are:**

Do you wish to separate yourself from the County run EMS system?

Are you willing to engage in the potentially contentious discussion over reducing the ad valorem tax payments to the County over the three-year period?

Are you willing to make the commitment necessary to create a state-of-the-art, high performance, ALS based EMS system?

## **Conclusions**

The EMS system in Venice is good but it could be better. Strong relationships exist between the VFD and the SCFD. 'Competent' and 'professional' are words used by each to describe the other.

The City population's median age is 69 with a slight increase in both age and numbers of residents expected annually.

Call volume is very high given the population of only 21,700 because of the number of seniors, skilled nursing and assisted living facilities.

Excerpt from VFD internal draft plan: (edited slightly)

*Response time is crucial in our line of business and there are years of research and data on how response times affect outcomes on both fire and medical incidents. When a patient's heart stops beating, and the patient stops breathing, the cells of the brain begin to die within 4 to 6 minutes without oxygen, after 6 minutes the cells of the brain are severely damaged and cannot be replaced or regenerated.*

*Patients with blockages within their coronary or cerebral arteries, experiencing myocardial infarction or stroke; benefit significantly from rapid ALS response. The ability to assess the patient for Cardiac/ Stroke Alert criteria, alert the receiving facility and start Advanced Life Support (ALS) treatment, all contribute to shortening the on-scene time of the Rescue and facilitate rapid transport to the appropriate hospital.*

*The sooner a hospital can administer clot busting medications and/or place stents, the greater the possibility of reversal of permanent effects from myocardial infarctions or strokes. In short, a strong EMS system improves patient outcomes and quality of life after the event.*

*Pre-hospital cardiac arrest from ventricular fibrillation has a higher chance of resuscitation compared to the other types of cardiac arrest if; 9-1-1 is immediately called, immediate bystander CPR and rapid defibrillation with and AED is administered.*

*It has been proven through decades of research that delay in defibrillation in a patient who is in ventricular fibrillation reduces the chances of resuscitation (converting V-fib to a rhythm with pulses) by 10% every minute. At 10 minutes the chances of resuscitation drops to 0%.*

**Consultants Note:** In addition to enhancing the capabilities of the VFD and increasing the number of available paramedics dedicated to the City, a review of citizen CPR training and available AEDs within public buildings can increase the potential survival of residents.

Other EMS events where rapid ALS intervention is critical:

*Severe anaphylactic shock from an allergic reaction can close the patient's airway within a matter of a few minutes. Severe facial trauma with massive swelling of the upper/lower airway will occur rapidly after the insult and result in respiratory arrest and eventually death. Placement of endotracheal tube and the administration of certain medications within the first few minutes after arriving on scene can mean the difference between life and death.*

*Hypovolemic, cardiogenic and the other types of shock results in inadequate tissue perfusion at the cellular level, which leads to irreversible shock and death of the patient. The quicker Intravenous lines are established to begin volume replacement, the better chance of preventing a patient from going into irreversible shock and dying.*

*Years of data show that VFD engines arrive on scene first on average of three (3) minutes before the arrival of the ambulance, and in that time period a lot of Advanced Life Support interventions (Endotracheal intubation, IV, medications) can be initiated that would have an immediate positive impact on the patients outcome and the on-scene time of the rescue which would allow for a quicker transport time to the closest hospital.*

The only question that I can't answer is the true level of desire within City leadership to have direct ownership and control of the EMS system within the City.

I stand ready to discuss each of the options with you, answer any questions and then once you have made the high-level decision about direction we can take steps to move forward and discuss the implementation issues specific to that option.

It has been a pleasure to craft this analysis of the EMS system in the City of Venice and I look forward to the next steps.

Respectfully submitted,



Bob Holdsworth, President  
The Holdsworth Group, Inc.

[Bob@holdsworth.com](mailto:Bob@holdsworth.com)

860.200.0059

## **Appendix A**

### **Revenue Pro-forma**

**Assuming VFD has control of the  
entire EMS system**

#### **Assumptions:**

- 4,200 transports
- 60% ALS usage and billing (70% currently)
- 5 billable miles per trip
- Current payer mix
- 20% bad debt and contractual allowances deducted

**For Illustration only  
2018 Rates Revised**

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## **Appendix B**

### **Pro-forma budget**

#### **SCFD rescues with VFD ALS engines**

ALS Engines Only						Budget Projection	
ALS Engine Companies Only						Existing volume	
	Hours	# staff	# days	base +stipend	Annual		
<b>Direct Labor</b>							<b>Staff needed</b>
Rescue 51 Medic	0	0	7	\$ 43,442.00	\$ -	Apprentice stipend	0
Rescue 51 EMT	0	0	7	\$ 37,262.00	\$ -		0
Rescue 52 Medic	0	0	7	\$ 43,442.00	\$ -	Apprentice stipend	0
Rescue 52 EMT	0	0	7	\$ 37,262.00	\$ -		0
Rescue 53 Medic	0	0	7	\$ 43,442.00	\$ -	Apprentice stipend	0
Rescue 53 EMT	0	0	7	\$ 37,262.00	\$ -		0
Engine 51 Medic	24	3	7	\$ 43,442.00	\$ 130,326.00	Apprentice stipend	3
Engine 52 Medic	24	3	7	\$ 43,442.00	\$ 130,326.00	Apprentice stipend	3
Engine 53 Medic	24	3	7	\$ 43,442.00	\$ 130,326.00	Apprentice stipend	3
Additional staff medics	0	3	7	\$ 43,442.00	\$ 130,326.00	Apprentice stipend	3
EMS Battalion Chief	12	1	5	\$ 100,000.00	\$ 100,000.00		1
Overtime/call backs @ 5%	0	0	0		\$ 19,548.90		
Additional stipend increase		0		\$ 1,545.00	\$ -	year two	
Total direct labor					\$ 640,852.90		13 staff members
							12 FF medics
<b>Non-labor costs</b>							0 FF EMTs
Admin Expense							1 EMS BC
Advertising & promotion							
Bad debt provision							
Books & training					\$ 10,000.00		
Capital lease - Rescues					\$ -	0	0
Computer tablets for e-pcr use					\$ 12,000.00	Purchase 6	\$2000 each
Consulting services							
Depreciation/Amort. Expense							
Dispatch fees							
Dues & Subscriptions							
e-pcr program fees					\$ 24,000.00		\$2,000/month
Fuel / Oil					\$ 10,000.00	Est	
Insurance - Workers Comp					\$ 47,840.00		\$3,680 x 13 staff
Insurance General & Vehicle					\$ 20,500.00		Per City Finance
Insurance - Health					\$ 191,321.00		\$14,717 x 13 staff
Meals & entertainment							
Medical supplies					\$ 27,500.00	Est	
Medical control /QA services					\$ 25,000.00	Outside QA	Medical Director
Office and other supplies					\$ 1,500.00		
Payroll taxes					\$ 61,100.00		\$4,700 x 13 staff
Postage							
Printing							
ProfessionalFees (AC/Leg/Billing)					\$ -		Billing svc.
Rent expense/Building Maint.							
Rental/leased - ALS gear					\$ 45,000.00	\$ 225,000.00	5 monitors / 60 mos
Rental/leased - ALS gear					\$ -	\$ 180,000.00	4 monitors / 60 mos
Retirement plan					\$ 195,000.00		\$15,000 x 13 staff
Telephone / Utilities / Cellular					\$ 5,000.00		cellular / hotspots
Uniforms					\$ 13,000.00		1,000 per FF/medic
Vehicle Maintenance Cost					\$ 25,000.00	Est.	
Total Non-Labor					\$ 713,761.00		
Total operations expense					\$ 1,354,613.90		
Reallocated tax revenue		\$ 834,000					Estimated for 2019
Estimated billing revenue		\$0			\$ (520,614)		

## **Appendix C**

### **Pro-forma Budget**

#### **VFD - 3 ALS Engines & 3 ALS Rescues**

Full EMS System						Budget Projection	
ALS Engine Companies Only						Existing volume	
	Hours	# staff	# days	base +stipend	Annual		
Direct Labor							Staff needed
Rescue 51 Medic	24	3	7	\$ 43,442.00	\$ 130,326.00	Apprentice stipend	3
Rescue 51 EMT	24	3	7	\$ 37,262.00	\$ 111,786.00		3
Rescue 52 Medic	24	3	7	\$ 43,442.00	\$ 130,326.00	Apprentice stipend	3
Rescue 52 EMT	24	3	7	\$ 37,262.00	\$ 111,786.00		3
Rescue 53 Medic	24	3	7	\$ 43,442.00	\$ 130,326.00	Apprentice stipend	3
Rescue 53 EMT	24	3	7	\$ 37,262.00	\$ 111,786.00		3
Engine 51 Medic	24	3	7	\$ 43,442.00	\$ 130,326.00	Apprentice stipend	3
Engine 52 Medic	24	3	7	\$ 43,442.00	\$ 130,326.00	Apprentice stipend	3
Engine 53 Medic	24	3	7	\$ 43,442.00	\$ 130,326.00	Apprentice stipend	3
Additional staff medics	24	6	7	\$ 43,442.00	\$ 260,652.00	Apprentice stipend	6
EMS Battalion Chief	12	1	5	\$ 100,000.00	\$ 100,000.00		1
Overtime/call backs @ 5%	0	0	0		\$ 55,865.70		
Additional stipend increase		0		\$ 1,545.00	\$ -	year two	
Total direct labor					\$ 1,533,831.70		34 staff members
							24 FF medics
Non-labor costs							9 FF EMTs
Admin Expense							1 EMS BC
Advertising & promotion							
Bad debt provision							
Books & training					\$ 10,000.00		
Capital lease - Rescues					\$ 299,400.00	lease 5 units	\$4,990/mo each
Computer tablets for e-pcr use					\$ 18,000.00	Purchase 8	\$2000 each
Consulting services							
Depreciation/Amort. Expense							
Dispatch fees							
Dues & Subscriptions							
e-pcr program fees					\$ 24,000.00		\$2,000/month
Fuel / Oil					\$ 20,000.00	Est	
Insurance - Workers Comp					\$ 92,000.00		Per City Finance
Insurance General & Vehicle					\$ 20,500.00		Per City Finance
Insurance - Health					\$ 367,925.00		Per City Finance
Meals & entertainment							
Medical supplies					\$ 75,000.00	Est	
Medical control /QA services					\$ 30,000.00	Outside QA	Medical Director
Office and other supplies					\$ 1,500.00		
Payroll taxes					\$ 117,500.00		Per City Finance
Postage							
Printing							
Professional Fees (AC/Leg/Billing)					\$ 123,956.96		Billing svc. 8%
Rent expense/Building Maint.							
Rental/leased - ALS gear					\$ 45,000.00	\$ 225,000.00	5 monitors / 60 mos
Rental/leased - ALS gear					\$ 36,000.00	\$ 180,000.00	4 monitors / 60 mos
Retirement plan					\$ 375,000.00		Per City Finance
Telephone / Utilities / Cellular					\$ 9,000.00		cellular / hotspots
Uniforms					\$ 31,000.00		1,000 per FF/medic
Vehicle Maintenance Cost					\$ 75,000.00	Est.	
Total Non-Labor					\$ 1,770,781.96		
Total operations expense					\$ 3,304,613.66		
Reallocated tax revenue		\$ 2,500,000					Estimated for 2019
Estimated billing revenue		\$1,549,462			\$ 744,848		