



# VOLUSIA COUNTY EMS

## Service Level Update



February 5, 2019



# Key Discussion Points

- **Current Service**
- **Challenges and Solutions**
- **Comprehensive EMS Planning Initiative**
- **Recommendations**
- **Supplemental Initiatives**
- **Resulting Coverage**
- **Summary Budget Impacts**





# Current Service

## Volusia County EMS System includes

- Tier 1: Fire Response with ALS Staff and Equipment
- Tier 2: EMS ALS Transport

### Historical Call/Transport Count

**FY 17-18**

- **78,300 VCEMS Responses**
- **51,073 VCEMS Transports**
  - 5,223 VCEMS Interfacility Transfers (14/day)
- **VC Fire/Municipal Transports: 4,018 (11/day)**

	<u>Calls</u>	<u>Transports</u>
FY 2012-13:	70,172	46,459
FY 2013-14:	74,092	48,500
FY 2014-15:	77,946	51,329
FY 2015-16:	79,160	52,389
FY 2016-17:	76,850	50,930



# Current Service

## Challenges and Solutions

- **Staffing**
  - **Scheduled and Unscheduled Leave Slots**
    - ✓ Managing the schedule more effectively
    - ✓ Implemented continuous recruitment and hiring processes
    - ✓ Implementing new shift schedule April 1, 2019
- **Demand**
  - **Includes: 911 calls, Interfacility Transfers, Non-Transport calls, Skilled Nursing Home calls, Special Events**
    - ✓ Added 8 FTEs in FY 2018 to assist with BLS transports/transfers
    - ✓ Right Response, patient release and alternative transport program initiated in Holly Hill and Daytona Beach to reduce overall system demand
    - ✓ New EMD implemented November 2018 (reducing VCEMS demand)
    - ✓ Upstaff 1-3 extra units per day utilizing overtime

### **911 Service Impact: Offload Delays at Hospitals (Average 19/day)**

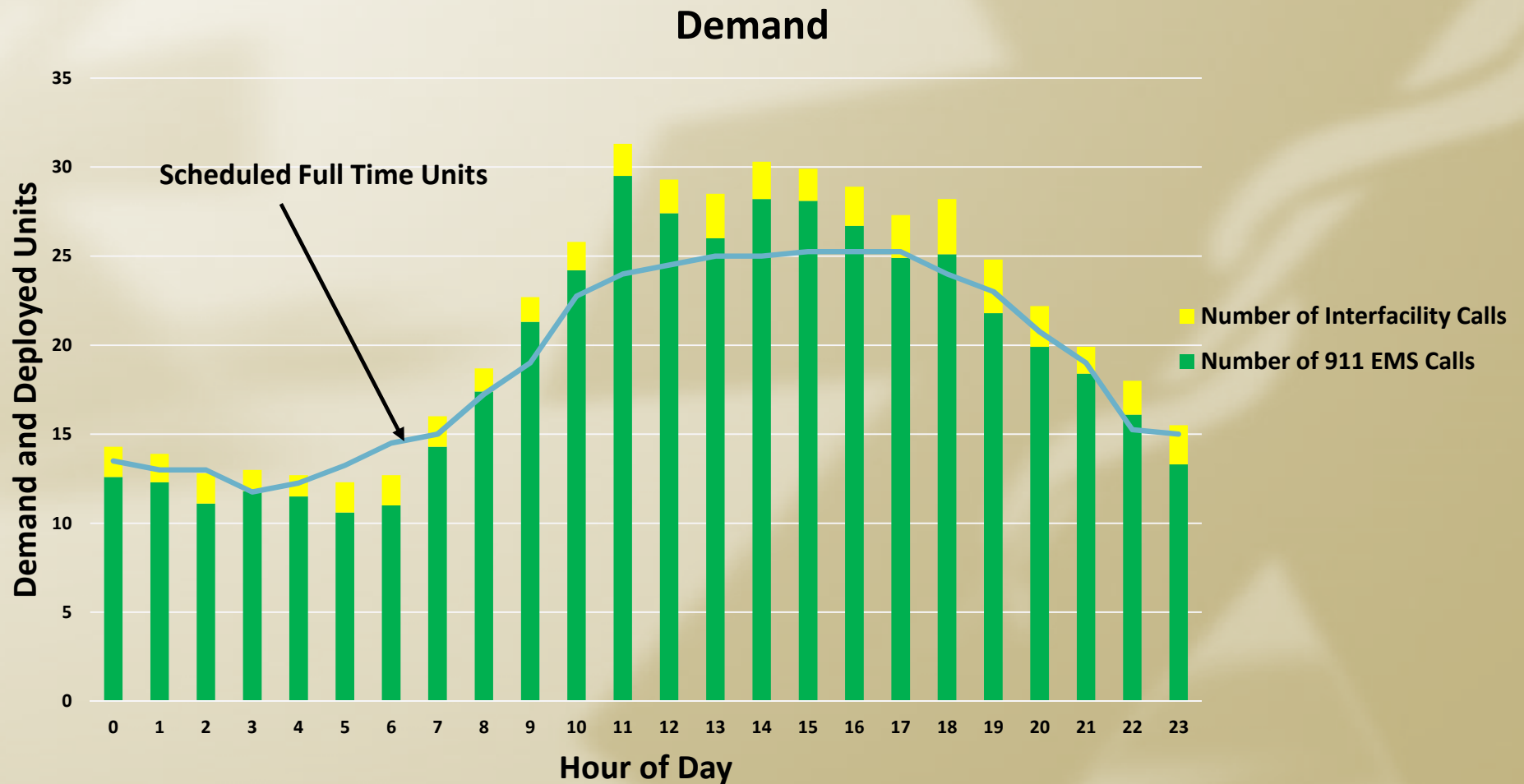
- ✓ Implemented procedures for more effective System Status Control
- ✓ Continuous dialogue with hospitals

### **911 Service Impact: Interfacility Transfers, Skilled Nursing Home Calls**

- ✓ Defer some interfacility transfers as agreed to with hospitals
- ✓ Utilize 1-3 extra units per day utilizing overtime



# Current Service Peak Load & Asset Allocation





## **FY 18-19 Budget Information Historical FTE Count**

**FY 18-19 EMS Operating Budget: \$23,576,288**

**FY 18-19 General Fund Contribution: \$5,897,416**

<b>Historical FTE Count</b>			
	<b>Full Time</b>	<b>Part Time</b>	<b>FTE Count</b>
<b>FY 11-12</b>	<b>179</b>	<b>20</b>	<b>182</b>
<b>FY 12-13</b>	<b>177</b>	<b>11</b>	<b>182</b>
<b>FY 13-14</b>	<b>177</b>	<b>11</b>	<b>182</b>
<b>FY 14-15</b>	<b>177</b>	<b>11</b>	<b>182</b>
<b>FY 15-16</b>	<b>186</b>	<b>11</b>	<b>191</b>
<b>FY 16-17</b>	<b>188</b>	<b>11</b>	<b>193</b>
<b>FY 17-18</b>	<b>189</b>	<b>10</b>	<b>194</b>
<b>FY 18-19</b>	<b>197</b>	<b>10</b>	<b>202</b>



# Current Service

## Response Times: FY 17-18

### Emergency (Two-Tiered System)

	<u>90<sup>th</sup> percentile</u>	<u>Average</u>	First VCEMS Transport on Scene
Urban	11:35	7:23	
Rural	21:57	14:36	
Countywide	11:48	7:30	

### Non-Emergency (Two-Tiered System)

	<u>90<sup>th</sup> percentile</u>	<u>Average</u>	First VCEMS Transport on Scene
Urban	17:36	10:59	
Rural	26:33	17:56	
Countywide	17:48	11:04	



# Current Service

**Response Times: 11/2/2018-1/16/2019**

**Improved with Revised Emergency Medical Dispatch**

## **Priority E – Time Life Critical Emergency (Two-Tiered System)**

	<u>90<sup>th</sup> percentile</u>	<u>Average</u>	
Urban	10:19	6:26	First VCEMS Transport on Scene
Rural	18:00	13:17	
Countywide	10:49	6:40	

## **Priority 1E – Emergency (Two-Tiered System)**

	<u>90<sup>th</sup> percentile</u>	<u>Average</u>	
Urban	11:28	7:17	First VCEMS Transport on Scene
Rural	22:25	13:42	
Countywide	11:51	7:26	





# Comprehensive EMS Planning

**Volusia Managers Association EMS Ad-Hoc Committee formed in the Summer of 2018 to review EMS system challenges and bring back solutions to Volusia County Managers.**

- Committee identified solutions for continuous system improvement

**Planning began October 4, 2018**

- Team met weekly until November 29, 2018
- Identified Solutions for Continuous Improvement
- Developed Recommendations

**Team Consisted of:**

- Public Protection Senior Leadership
- Emergency Medical Services Senior Leadership
- Emergency Medical Administration
- EMS Medical Directors
- EMS Union President
- Volusia County Fire Chief's Association Chairman
- Other specialists as necessary
  - VCSO Communications Management
  - Halifax Health
  - Advent Health



# Recommendations Going Forward

## Recommendation #1

### *Interfacility Transfers*

Revise the VCEMS business model and maintain Interfacility Transfers in VCEMS but as a separate VCEMS service unit

- Demand: Average 14/day  
Transfers Occur 24/7
- Time on Task: Average 2 hours/transport  
Out of County can last 4-8 hours/transport



# Recommendations Going Forward

## Recommendation #1

### *Interfacility Transfers*

- **To Meet Demand:** Staff and deploy VCEMS trucks with the primary responsibility of Interfacility Transfers.
- Recommend phasing out transports to Tampa, Gainesville, Jacksonville, Miami— **maintain transports to Orlando**
  - Would require review of Chapter 46, Volusia County Ordinances regarding frequency of external agencies performing this function
  - 1,553 out of County Interfacility Transfers in FY 17-18

### **Deployment Recommendation, based on current demand:**

- 1 truck East Side: 6:00 am-6:00 pm, 7 days/week (4 staff)
- 1 truck West Side: 6:00 am-6:00 pm, 7 days/week (4 staff)
- 1 truck East Side: 6:00 pm-6:00 am, 7 days/week (4 staff)
- 1 truck West Side: 6:00 pm-6:00 am, 7 days/week (4 staff)



# Recommendations Going Forward

## Recommendation #1

### *Cost to implement Interfacility Transfer Model*

Initial start-up cost:	
4 ALS Ambulances equipped (one time costs)	\$914,656
<hr/>	
Annualized salary/fringe cost to staff <u>four</u> ALS trucks	
Staffed 12/7 (12-hour shifts) (16 Total staff)	\$979,804
• 8 Paramedics (2 per truck)	
• 8 EMTs (2 per truck)	
<hr/>	
Yearly operating costs for four ambulances	\$236,000
<hr/>	
Yearly recurring costs	\$1,215,804





# Recommendations Going Forward

## Recommendation #2

### ***E-911 Redirect Nurse Triage (Pilot Program)***

- Nurse in the Emergency Communications Center that triages and implements alternate solutions for low acuity calls
- Includes stakeholder development to access alternate care pathways with local hospital systems
- Reserves emergency system for true emergencies
- Nationally recognized system of alternative EMS response solutions
  - Las Vegas; Reno; Washington DC



# Recommendations Going Forward

## Recommendation #2

### *Costs for E-911 Redirect Nurse Triage*

#### Initial Start-up Costs:

CAD Interface	\$10,000
Training Costs (Initial 280 hour training)	<u>\$108,786</u>
	\$118,786

Nurse Triage Call Line (recurring yearly cost)	
12 hours/day Monday-Friday, to start	
8 Registered Nurses-Per Diem Rate	\$239,264

**Will seek 2-year grant assistance from Halifax and Advent Hospitals**



# Recommendations Going Forward

## Recommendation #3

### *Establish Additional VCEMS Service Centers*

- More effective unit availability at shift change times
- Establishes a supply and crew center that is not centric to the two existing core posts at
  - EMS Headquarters (East Side Hub): Holly Hill
  - Post 2 (West Side Hub): Orange City
- Able to use existing infrastructure
  - DeLand Fire Station 82 (W. ISB & N. Woodland) *(In-Service)*
  - VC Fire Station 23 (Wallace & 44-NSB) *(In Progress)*
  - DeLand Fire Station 83 (Taylor Rd. & MLK) *(Near Future)*
  - VC Fire Station 12 (Tomoka Farms & Taylor) *(Near Future)*



- Existing VCEMS Hub
- Existing VCEMS Service Center
- Future VCEMS Service Center







# Recommendations Going Forward

## Recommendation #3

### *Cost for additional VCEMS Service Centers*

- **Volusia County Fire Station 23**
  - Utility Costs shared with VC Fire Services:
  - **\$7,500** annually will need to be added to VCEMS budget
  - **\$3,500** one-time set-up cost for furniture, fixtures and equipment
  - **Station 23 renovation currently underway-plans to include VCEMS**
- **DeLand Fire Station 83 (Existing):**
  - **VCEMS has existing agreement with City of DeLand**
  - **Links to Public Protection Logistics Center Implementation**
  - **\$3,500** one-time set-up cost for furniture, fixtures and equipment
- **Volusia County Fire Station 12 (Near Future):**
  - **Utility Costs shared with VC Fire Services**
  - **\$6,500** annually will need to be added to VCEMS budget when this occurs
  - **\$3,500** one-time set-up cost for furniture, fixtures and equipment
- **One Ambulance Service Technician (ASTs) (1-Total Staff)**
  - **\$47,359** salary and fringe costs annually



# Recommendations Going Forward

## Recommendation #4

### *Reduce extended response gaps*

- Introduce “Hybrid” Deployment strategy (Dynamic and Static Deployment Mix): Establish 12-hour peak time fixed based VCEMS presence in extended response areas:
  - **Fiscal Year 2020:**
    - North Peninsula: VC Fire Station 14
    - Osteen: VC Fire Station 36
  - **Areas potentially to be addressed in future FYs:**
    - Tomoka Farms Rd/Ranchette: VC Fire Station 12
    - South Beach: VC Fire Station 21
    - Northeast/Halifax: VC Fire Station 13 or 16



# Recommendations Going Forward

## Recommendation #4

### *Cost to reduce extended response gaps*

2 ALS Ambulances equipped	\$570,528
Furniture, fixtures and equipment at two fire stations	<u>\$7,000</u>
Initial Start-up Cost (one-time costs)	\$577,528
<hr/>	
Annual salary/fringe cost to staff <u>two</u> ALS ambulances	
12/7 using 12-hour shifts (FY 20) (8 total staff)	\$489,902
<ul style="list-style-type: none"><li>• 1 Paramedic per truck per shift (2 trucks, 4 total staff)</li><li>• 1 EMT per truck per shift (2 trucks, 4 total staff)</li></ul>	
Yearly operating costs for 2 ambulances	<u>\$118,000</u>
Yearly operating costs	\$607,902

Locations: VC Fire Station 14-North Peninsula and VC Fire Station 36-Osteen



# Recommendations Going Forward

## Recommendation #5

### *Current and future needs*

- Current FY: Maintain 1-3 additional 10 or 12 hour units each day utilizing overtime until other staffing and deployment recommendations are implemented to cover interfacility and nursing home demand
- FYs 21, 22, 23:
  - Add full time 12-hour peak time crew/ambulance (4 FTEs) per FY as needed
    - 12-hour unit cost: estimated at \$325,000 for personnel/equipment
  - **Trigger Points:**
    - Performance of system (911 and Interfacility), growth and demand
    - Ability to meet established response time performance
    - System needs (dynamic, fixed location, Basic Life Support)
    - Ability to fund
    - May require increasing EMS fleet





# Response Time Goals

## ***Recommended Countywide Response Time Objectives 90<sup>th</sup> percentile***

- Currently no national 'standard' for EMS agencies
- EMS accrediting organizations generally recommend local approval on response times
- NFPA 1710 (Career Fire Departments) recommends
  - 4 minute travel time, for the arrival with first responders with Automatic External Defibrillator (AED) or higher level capability
  - 8 minute travel time for the arrival of ALS unit where the service is provided by the FD, provided that a BLS unit arrived in 4 minutes with an AED
- *Response Times dependent on existing capabilities, funding, community expectations*



# Response Time Goals

## *Recommended Urban Response Time Objectives 90<sup>th</sup> percentile:*

### *EMERGENCY CALLS (Two-Tiered System)*

- **URBAN-First VCEMS Transport Unit on Scene**
  - **Priority E - 8:59**
    - **Life Threatening emergencies** (stroke, choking, cardiac arrest, major trauma, childbirth)
  - **Priority 1E - 10:59**

**Implementation to coincide with staffing recommendations**



# Response Time Goals

## *Recommended Rural Response Time Objectives 90<sup>th</sup> percentile:*

### *EMERGENCY CALLS (Two-Tiered System)*

- **RURAL-First VCEMS Unit on Scene**
  - **Priority E - 17:59**
    - **Life Threatening emergencies** (stroke, choking, cardiac arrest, major trauma, childbirth)
  - **Priority 1E - 20:59**

**Implementation to coincide with staffing recommendations**



# Response Time Goals

## *Countywide Response Time Objectives:*

### **NON-EMERGENCY CALLS**

#### **First VCEMS Unit on Scene**

- **Non-emergent Calls (P5): No more than 2% of calls responded to over **59:59** (98<sup>th</sup> percentile)**
  - **Primarily 'alternate care' cases**
  - **Ties into Nurse Triage Line**

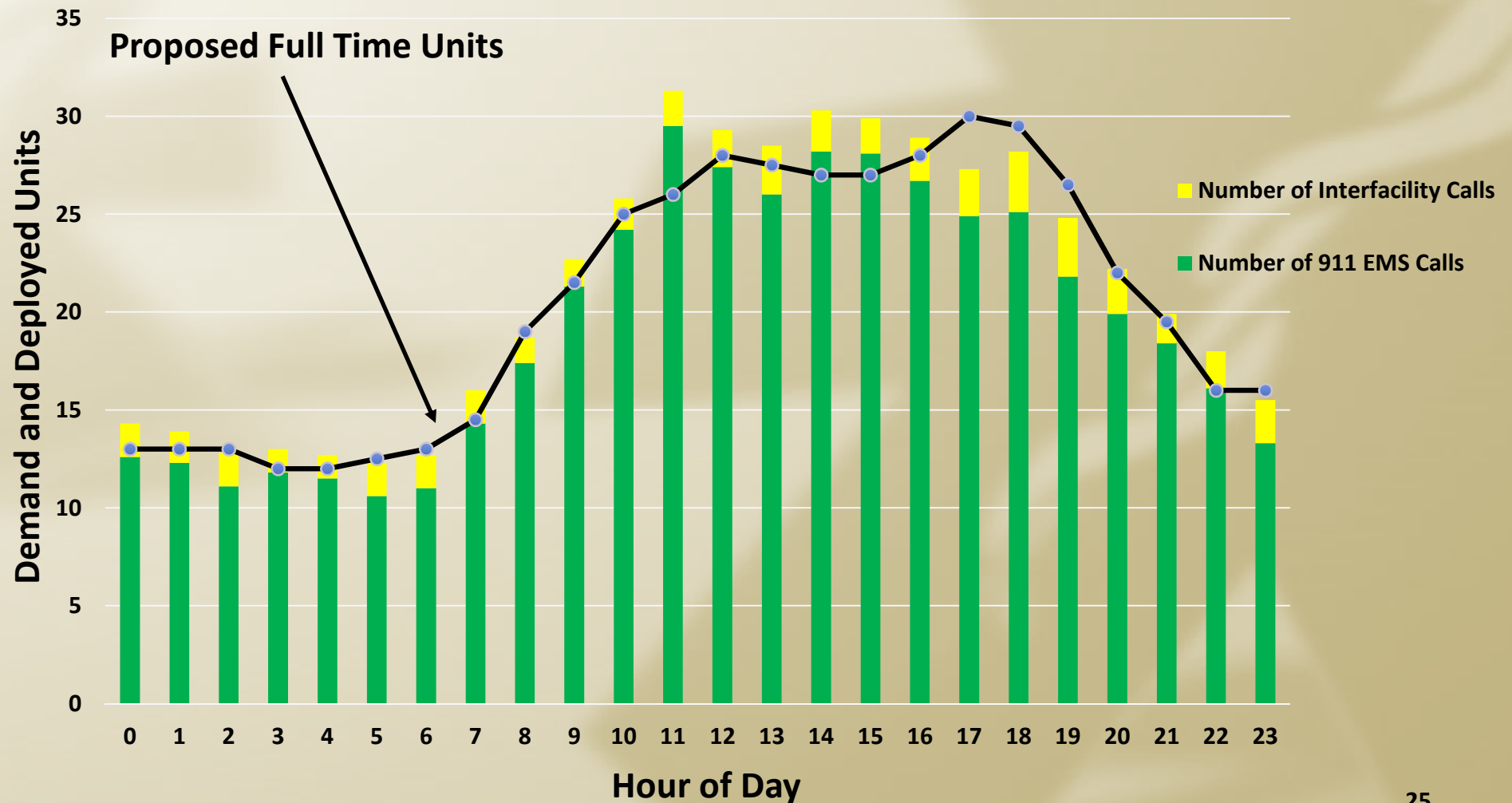
**Implementation to coincide with staffing recommendations**





# Resulting Coverage

## Demand with Proposed Full Time Transport Units





# Supplemental Initiatives

- Educate the public on appropriate use of EMS system
- Educate the public about the comprehensive two-tiered system response and what to expect when you call 911 for a medical emergency and are transported to a hospital
- Municipal Transport Agreement Implementation
- Work in coordination with local health care system and educate public on 911-Redirect Nurse Triage Line when implemented
- Community Paramedicine



# Summary of Budget Impacts

## Interfacility Transfers

### (4) 12-hour Interfacility Ambulances (yearly)

- 16 total staff, supply and maintenance costs
- 4 Fully Equipped Trucks

#### One-Time Cost

#### Recurring Costs

\$914,656

\$1,215,804

## E-911 Redirect Nurse Triage

- 8 registered nurses
- Initial Training/IT costs

\$118,786

\$239,264

## Establish Additional VCEMS Service Centers

- One-Time FF&E Costs
- 1 Ambulance Service Technician
- Facility Operational & Maintenance Costs

\$10,500

\$47,359

\$14,000

## Reduce Extended response Time Gaps

### (2) 12-hour Static Deployed Ambulances

- 8 total staff , supply and maintenance costs
- 2 Fully Equipped Trucks

\$577,528

\$607,902

## Fiscal Year 2021 and beyond — as needed based on trigger points

### (1) 12-hour Peak Time Deployed Ambulance

- 4 Total Staff , supply and maintenance costs (estimated cost)
- 1 Fully Equipped Truck (estimated cost)

\$325,000

\$290,000



# Summary of Budget Impacts

## One-Time Cost

## Recurring Costs

### **FY 18-19**

#### **(4) 12-hour Interfacility Ambulances (6 months)**

- 4 Fully Equipped Trucks
- 16 total staff, supply and maintenance costs

\$914,656

\$696,900

### **FY 19-20**

- **One-Time Costs**
  - Two fully equipped trucks for static deployed ambulances
  - Nurse Triage CAD Interface
  - Nurse Triage Training
  - Service Center Furniture, Fixtures and Equipment
- **Recurring Costs**
  - 16 total staff, supply and maintenance costs for Interfacility Transfers
  - 8 total staff, supply and maintenance costs for static deployed ambulances
  - 8 registered nurses for Nurse Triage program
  - 1 Ambulance Service Technician

\$706,814

\$2,124,329

### **FYs 20-21 and beyond**

- **One-Time Costs**
  - 1 fully equipped truck
- **Recurring Costs**
  - 4 Total Staff, supply and maintenance costs (estimated cost)

\$290,000

\$325,000

**Staff Analysis & Recommendations, Council Date 02/05/19**

**FUND: Emergency Medical Services - 002**

Prior year forecast presentation  
updated with recommendations

<b>Revenues:</b>	<b>FY2018-19 Adopted</b>	<b>FY2018-19 Revised</b>	<b>FY2019-20 Forecast</b>	<b>FY2020-21 Forecast</b>	<b>FY2021-22 Forecast</b>
Ambulance Fees <sup>1</sup>	16,547,483	16,912,495	17,419,870	17,942,466	18,480,740
Bad Debt Recovery	920,055	1,068,693	1,100,754	1,133,776	1,167,789
Miscellaneous Revenues	136,834	183,475	188,979	194,649	200,488
General Fund Contribution <sup>2</sup>	<b>5,897,416</b>	<b>5,897,416</b>	<b>8,426,714</b>	<b>9,295,548</b>	<b>9,559,899</b>
<b>PY Fund Balance One-Time <sup>3</sup></b>	<b>74,500</b>	<b>1,125,765</b>	<b>0</b>	<b>522,737</b>	<b>1,898,792</b>
<b>TOTAL FUND REVENUES</b>	<b>23,576,288</b>	<b>25,187,844</b>	<b>27,136,317</b>	<b>29,089,176</b>	<b>31,307,709</b>
<b><u>Patient Care Expenditures:</u></b>					
Personnel Services	16,033,113	16,033,113	16,403,912	17,166,753	17,701,184
Operating Expenditures	5,352,576	5,352,576	5,787,601	6,263,021	6,782,693
Capital Outlay	728,990	728,990	570,200	1,242,200	2,490,200
(One-time) Equipment Costs	0	914,656	706,814	290,000	0
Interfacility Transfer Model (On-going Costs)	0	696,900	1,215,804	1,264,436	1,315,014
E-911 Redirect Nurse Triage (On-going Costs)	0	0	239,264	248,835	258,788
Additional VCEMS Service Centers (On-going Costs)	0	0	61,359	63,813	66,366
N. Peninsula & Osteen Fire Stations (On-going Costs)	0	0	607,902	632,218	657,507
Additional Peak Time Deployed Ambulance (As Needed)	0	0	0	325,000	338,000
<b>Total Patient Care Expenditures</b>	<b>22,114,679</b>	<b>23,726,235</b>	<b>25,592,857</b>	<b>27,496,277</b>	<b>29,609,751</b>
<b><u>Billing Expenditures:</u></b>					
Personnel Services	1,038,226	1,038,226	1,079,755	1,122,945	1,167,863
Operating Expenditures	405,883	405,883	409,942	414,041	418,182
Capital Outlay	17,500	17,500	0	0	0
Service Demand - addition of billing coder	0	0	53,763	55,914	111,913
<b>Total Billing Expenditures</b>	<b>1,461,609</b>	<b>1,461,609</b>	<b>1,543,460</b>	<b>1,592,900</b>	<b>1,697,958</b>
<b>TOTAL FUND EXPENDITURES</b>	<b>23,576,288</b>	<b>25,187,844</b>	<b>27,136,317</b>	<b>29,089,177</b>	<b>31,307,709</b>
<b>REVENUES LESS EXPENDITURES</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Reserve for Revenue Stabilization</b>	<b>200,000</b>	<b>200,000</b>	<b>200,000</b>	<b>200,000</b>	<b>200,000</b>
<b>Reserve for Future Capital</b>	<b>3,044,401</b>	<b>3,068,289</b>	<b>3,068,289</b>	<b>2,545,552</b>	<b>646,760</b>
<b>Total Reserves</b>	<b>3,244,401</b>	<b>3,268,289</b>	<b>3,268,289</b>	<b>2,745,552</b>	<b>846,760</b>

<sup>1</sup> FY19 revised fees based upon 9/30/18 x 3% growth with future years forecasted at 3% growth

<sup>2</sup> FY20 General Fund Transfer increased \$2.1M equivalent to 0.05 mills or average residential annual impact \$5.25

<sup>3</sup> 9/30/18 increased carryforward due to \$600K increased revenues & \$400K of operating savings