

HIGHLANDS COUNTY BOARD OF COUNTY COMMISSIONERS
Tuesday, May 31, 2022
9:00 AM
600 S. Commerce Ave. Sebring, FL 33870
AGENDA

(Please turn off pagers and cell phones)

1 MEETING CALLED TO ORDER

2 INVOCATION:

3 PLEDGE OF ALLEGIANCE

4 PUBLIC COMMENTS

5 WORKSHOP: Workshop to discuss the Evergreen Salary Study

5.A *Compensation Study Presentation by Evergreen Solutions, LLC*

Tanya Cannady, CPA, CDM

Business Services Director

Fiscal impact for fiscal year 22/23 will vary, depending on the cost options presented by Evergreen Solutions.

[Highlands - Project Summary Presentation v1.4 \(003\).pptx](#)

6 WORKSHOP: Workshop to discuss the Fire Assessment

6.A *Highlands County Fire Rescue Fire Assessment Workshop*

Chief Laney Stearns, Public Safety Director

To be determined if a future public hearing is scheduled.

[Highlands County Fire Study 8-14-17_Final.pdf](#)

[FITCH Study-Highlands County FL_Final Combined Report.pdf](#)

7 ADJOURN

Any person who decides to appeal any decision made by this Board of County Commissioners of Highlands County, Florida, in public hearing or meeting is hereby advised that he or she will need a record of the proceedings, and that, for such purpose, he or she may need to ensure that a verbatim record of the proceedings is made, which record will include the testimony and evidence upon which such appeal is to be based.

The Board of County Commissioners of Highlands County, Florida, does not discriminate upon the basis of any individual's disability status. This non-discrimination policy involves every aspect of the Board's functions, including one's access to, participation, employment or treatment in its programs or activities. "Anyone requiring reasonable accommodation as provided for in the Americans With Disabilities Act or Section 286.26 Florida Statutes should contact Human Resources, ADA Coordinator at: 863-402-6509 (voice), or via Florida Relay Service 711, or by

e-mail: hrmanager@highlandsfl.gov.” Requests for CART or interpreter services should be made as soon as possible but no later than 48 hours in advance to permit coordination of the service.

Please note our new website address: www.highlandsfl.gov/

Any invocation that may be offered before the official start of the Commission meeting shall be the voluntary offering of a private citizen, to and for the benefit of the Commission. The views or beliefs expressed by the invocation speaker have not been previously reviewed or approved by the Commission, and the Commission is not allowed by law to endorse the religious beliefs or views of this, or any other speaker.

**HIGHLANDS COUNTY
COUNTY COMMISSION AGENDA ITEM**

DATE OF ACTION REQUEST: 5/31/2022

PRESENTER: Tanya Cannady, CPA, CDM
Business Services Director

SUBJECT/TITLE: Compensation Study Presentation by Evergreen Solutions, LLC

STATEMENT OF ISSUE

Effective September 30, 2021, the Florida minimum wage law was \$10 per hour and will increase by \$1 per year until the minimum wage reaches \$15 per hour on September 30, 2026. Evergreen Solutions was hired to review our current compensation system, update the pay scale and perform an internal alignment analysis.

RECOMMENDED ACTION

None

FISCAL IMPACT

Fiscal impact for fiscal year 22/23 will vary, depending on the cost options presented by Evergreen Solutions.

Attachments: [Highlands - Project Summary Presentation v1.4 \(003\).pptx](#)

Compensation Study Project Summary Presentation Highlands County, FL



Presented by:
Mark Holcombe



May 31st, 2022

Overview

- Evergreen Qualifications
- Study Goals
- Project Phases
- Current System Review
- Compensation Survey
- Next Steps



Who We Are

- National Public Sector Consulting Experience
 - Work in 46 States
 - Extensive Experience with Institutions of Higher Education
 - Over 800 Compensation and/or Classification Studies
 - Full-service Human Resources Consulting Practice
- Human Resources Clients
 - Local Governments
 - School Districts
 - Colleges and Universities
 - Quasi-Governmental Organizations
 - Non-Profits

Study Goals

- Review compensation system to ensure internal equity
- Survey peer organizations to ensure external equity
- Produce recommendations to provide the organization with a compensation system that is equitable, both internally and externally



Project Phases

Phase 1: Data Collection

Submittal of
data from
County

Data Collection

Phase 2: Compensation

Comp Survey
(Market
Positioning)

Internal
Alignment
Analysis

Phase 3: Solution

Implementation
Options

Reporting



Current System Review

Strength:

- The County has maintained consistent range spreads which are within industry averages.
- Due to the recent, regular COLAs and Merit pay, the majority of employees are paid more than their expected salary, based on a 30-year progression assumption.
- The County has a strong and positive relationship between tenure and pay grade penetration.

Weakness:

- Forty percent of employees are paid within the first quartile of their pay range. This may indicate high turnover or many recent hires.



Comp Survey

- All responses are adjusted for cost of living differentials.
- Salary ranges and average actuals were collected from the respondents.
- A total of 53 jobs were benchmarked representing all participating parties.

Respondent Organizations
Alachua County
Columbia County
DeSoto County
Glades County
Hardee County
Lake County
Marion County
Okeechobee County
Orange County
Osceola County
Putnam County
Seminole County
Sumter County
South Florida State College



Comp Survey Results

Market Comparison Results

Unadjusted Results			Adjusted Results (outliers removed)		
Minimum	Midpoint	Maximum	Minimum	Midpoint	Maximum
-10.1%	-9.8%	-9.6%	-9.5%	-9.5%	-9.4%

On average, the County falls approximately 10% of the market average when comparing the established peer groups.



Key Recommendations

1. Adopt an adjusted pay plan. The newly recommended pay plan has consistent range spreads and progression between the grades.
2. Reassign pay grades to positions based on internal equity and the market results. Some positions will see larger adjustments than others due to the market response.
3. Place employees within their newly recommended pay grades. Select an implementation methodology that aligns with the compensation philosophy and financial means of the County.



Current Pay Scale

GRADE	MIN	MID	MAX	Range Spread	Midpoint Progression
101	\$ 19,642.74	\$ 25,044.49	\$ 30,446.24	55.0%	-
102	\$ 21,017.73	\$ 26,797.60	\$ 32,577.48	55.0%	7.0%
103	\$ 22,488.97	\$ 28,673.43	\$ 34,857.90	55.0%	7.0%
104	\$ 24,063.20	\$ 30,680.57	\$ 37,297.95	55.0%	7.0%
105	\$ 25,747.62	\$ 32,828.21	\$ 39,908.81	55.0%	7.0%
106	\$ 27,549.95	\$ 35,126.19	\$ 42,702.43	55.0%	7.0%
107	\$ 29,478.45	\$ 37,585.02	\$ 45,691.60	55.0%	7.0%
108	\$ 31,541.94	\$ 40,215.97	\$ 48,890.01	55.0%	7.0%
109	\$ 33,749.88	\$ 43,031.09	\$ 52,312.31	55.0%	7.0%
110	\$ 36,112.37	\$ 46,043.27	\$ 55,974.17	55.0%	7.0%
111	\$ 38,640.23	\$ 49,266.30	\$ 59,892.36	55.0%	7.0%
112	\$ 41,345.05	\$ 52,714.94	\$ 64,084.83	55.0%	7.0%
113	\$ 44,239.20	\$ 56,404.99	\$ 68,570.77	55.0%	7.0%
114	\$ 47,335.95	\$ 60,353.33	\$ 73,370.72	55.0%	7.0%
115	\$ 50,649.46	\$ 64,578.07	\$ 78,506.67	55.0%	7.0%
116	\$ 54,194.93	\$ 69,098.53	\$ 84,002.14	55.0%	7.0%
117	\$ 57,988.57	\$ 73,935.43	\$ 89,882.29	55.0%	7.0%
119	\$ 66,391.12	\$ 84,648.67	\$ 102,906.23	55.0%	14.5%
120	\$ 71,038.49	\$ 90,574.08	\$ 110,109.67	55.0%	7.0%
121	\$ 76,011.19	\$ 96,914.27	\$ 117,817.34	55.0%	7.0%
123	\$ 87,025.21	\$ 110,957.14	\$ 134,889.08	55.0%	14.5%
150	-	-	-	-	-



Recommended Pay Scale

Grade	Minimum	Midpoint	Maximum	Range Spread	Midpoint Progression
101	\$ 24,960.00	\$ 31,200.00	\$ 37,440.00	50.0%	-
102	\$ 26,457.60	\$ 33,072.00	\$ 39,686.40	50.0%	6.0%
103	\$ 28,045.06	\$ 35,056.32	\$ 42,067.58	50.0%	6.0%
104	\$ 29,727.76	\$ 37,159.70	\$ 44,591.64	50.0%	6.0%
105	\$ 31,511.42	\$ 39,389.28	\$ 47,267.14	50.0%	6.0%
106	\$ 33,402.11	\$ 41,752.64	\$ 50,103.17	50.0%	6.0%
107	\$ 35,406.24	\$ 44,257.80	\$ 53,109.36	50.0%	6.0%
108	\$ 37,530.61	\$ 46,913.26	\$ 56,295.92	50.0%	6.0%
109	\$ 39,782.45	\$ 49,728.06	\$ 59,673.67	50.0%	6.0%
110	\$ 42,169.39	\$ 52,711.74	\$ 63,254.09	50.0%	6.0%
111	\$ 44,699.56	\$ 55,874.45	\$ 67,049.34	50.0%	6.0%
112	\$ 47,381.53	\$ 59,226.92	\$ 71,072.30	50.0%	6.0%
113	\$ 50,224.42	\$ 62,780.53	\$ 75,336.64	50.0%	6.0%
114	\$ 53,237.89	\$ 66,547.36	\$ 79,856.83	50.0%	6.0%
115	\$ 56,432.16	\$ 70,540.20	\$ 84,648.24	50.0%	6.0%
116	\$ 59,818.09	\$ 74,772.62	\$ 89,727.14	50.0%	6.0%
117	\$ 63,407.18	\$ 79,258.97	\$ 95,110.77	50.0%	6.0%
118	\$ 67,211.61	\$ 84,014.51	\$ 100,817.41	50.0%	6.0%
119	\$ 71,244.31	\$ 89,055.38	\$ 106,866.46	50.0%	6.0%
120	\$ 75,518.96	\$ 94,398.70	\$ 113,278.45	50.0%	6.0%
121	\$ 80,050.10	\$ 100,062.63	\$ 120,075.15	50.0%	6.0%
122	\$ 84,853.11	\$ 106,066.38	\$ 127,279.66	50.0%	6.0%
123	\$ 89,944.29	\$ 112,430.37	\$ 134,916.44	50.0%	6.0%
UNG	-	-	-	-	-



Option Costs

Type	Cost	Employees	Average	% of Payroll
Bring to Min	\$ 109,110.83	57	\$ 1,914.23	1.1%
30-Year Class Parity	\$ 181,057.22	82	\$ 2,208.01	1.8%
30-Year Hybrid Parity	\$ 269,562.11	111	\$ 2,428.49	2.6%
30-Year Tenure Parity	\$ 507,813.32	140	\$ 3,627.24	4.9%
Compa Ratio	\$ 904,491.59	235	\$ 3,848.90	8.8%

- **Bring to Minimum** – places employees in the newly recommended ranges and makes no further adjustment.
- **Parity Options** – gives a “projected salary” based on a time metric. If an employee falls below the projected salary, they receive an adjustment. Class gives credit for current position only, Tenure gives credit for all time with the County, and Hybrid blends the two.
- **Compa Ratio** – sets an employee’s salary in the recommended range so that their compa ratio is unchanged. Compa ratio is a ratio between an employee’s salary and their range midpoint.



Next Steps

- Finalize implementation plan
 - Select option
 - Communicate option
 - Address concerns
 - Submit written report



**HIGHLANDS COUNTY
COUNTY COMMISSION AGENDA ITEM**

DATE OF ACTION REQUEST: 5/31/2022

PRESENTER: Chief Laney Stearns, Public Safety Director

SUBJECT/TITLE: Highlands County Fire Rescue Fire Assessment Workshop

STATEMENT OF ISSUE

The purpose of this Workshop is to review the Fitch Study and Government Services Group (GSG) assessment report, review fire call data, provide assessment revenue data for the current and the last 3 years and provide a projection of assessment revenue for fiscal 22/23 with recommendation.

The GSG report was submitted to the Commissioners in August 2017 but not implemented until next fiscal year (2018/2019). The final resolution was adopted on July 10, 2018 (#17-18-112) with discounted assessment rates.

RECOMMENDED ACTION

None

FISCAL IMPACT

To be determined if a future public hearing is scheduled.

Attachments: [Highlands County Fire Study 8-14-17_Final.pdf](#)
[FITCH Study-Highlands County FL_Final Combined Report.pdf](#)

Highlands County, Florida

Fire Assessment Memorandum

AUGUST 2017

Presented by:

Government Services Group, Inc.
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Table of Contents

ASSESSMENT MEMORANDUM..... 1

SERVICE DESCRIPTION 3

ASSESSABLE COSTS CALCULATIONS..... 6

DETERMINATION OF FIRE SERVICES DEMAND 9

COMPUTATION OF FIRE ASSESSMENTS 11

OUTSTANDING ISSUES 17

IMPLEMENTATION..... 19

List of Tables

Table 1 — Highlands County Fire Stations.....	3
Table 2 — Apparatus Inventory and Fire Flow	3
Table 3 — Fiscal Year 2017-18 Assessable Budget.....	7
Table 4 — Fire Calls by Category (Calendar Year 2016).....	9
Table 5 — Fiscal Year 2017-18 Cost Apportionment.....	11
Table 6 — Parcel Apportionment within Property Use Categories.....	12
Table 7 — Parcel Apportionment - Residential Property Use Category	13
Table 8 — Parcel Apportionment - Non-Residential Property Use Categories	13
Table 9 — Parcel Apportionment - Land Property Use Category.....	14
Table 10 — Fiscal Year 2017-18 Fire Assessment Rates (100% Funding).....	14
Table 11 — Fiscal Year 2017-18 Estimated Impact of Exemptions (100% Funding).....	16
Table 12 — Preliminary Implementation Schedule.....	20

Appendices

Appendix A — Department of Revenue Property Use Codes & Descriptions
Appendix B — Highlands County Property Appraiser Building Improvement Codes and Use Descriptions

Assessment Memorandum

INTRODUCTION

Government Services Group, Inc. (GSG) specializes in government finance and taxation issues by working with cities, counties, special districts and state agencies to develop unique funding and service delivery solutions for critical infrastructure and service needs. GSG has developed extensive experience in structuring and implementing alternative revenue sources in Florida.

Highlands County (County) has entered into a professional services agreement with GSG to provide specialized services in the development of a non-ad valorem assessment program to fund fire services within the unincorporated area of the County and the City of Lake Placid (Fire Assessment Project).

The objective of the Fire Assessment Project was to develop an annual assessment program to fund the provision of fire services within the unincorporated area of the County and the City of Lake Placid (Fire Assessment). The annual fire assessment will, subject to County Commission approval, be collected using the tax bill collection method beginning in November 2017. This document is the Fire Assessment Memorandum (Assessment Memorandum), which is one of the project deliverables specified in the scope of services.

The work effort, documented by this Assessment Memorandum, focused on the calculation of assessment rates and classifications required to fully fund the identified assessable costs to provide fire services within the unincorporated area of the County and the City of Lake Placid for Fiscal Year 2017-18. The County has the choice of funding all or only a portion of the assessable costs based on policy direction. In addition, the work effort recorded in this Assessment Memorandum required the identification of the full costs of assessable fire services (minus all revenues) and the allocation of those costs to properties that specially benefit from the provision of such fire services.

OBJECTIVES

The County retained GSG to develop an annual recurring special assessment program so that it is capable of funding all, or a portion of, the assessable costs associated with providing fire services within the unincorporated area of the County and the City of Lake Placid. Commencing with Fiscal Year 2017-18, subject to County Commission approval, the fire assessment will be collected using the property tax bill collection process provided in section 197.3632, Florida Statutes (Uniform Method). Because the fire assessment will be collected using the Uniform Method, the data available on the ad valorem tax roll has been used to develop the Fiscal Year 2017-18 assessment program.

Accordingly, the challenge for the County is to develop a non-ad valorem assessment program which uses property information that is or will be on the ad valorem tax roll. To this end, GSG has been charged to fully cost the services to be provided by the County, develop a fair and reasonable apportionment methodology for such assessable costs, and determine assessment rates and parcel classifications that are accurate, fair and reasonable.

The fire non-ad valorem assessments must meet the Florida case law requirements for a valid special assessment. These requirements are:

1. The service provided must confer a special benefit to the property being assessed; and
2. The costs assessed must be fairly and reasonably apportioned among the properties that receive the special benefit.

The work effort of this project required the evaluation of data obtained from the County, Property Appraiser, Tax Collector and the CAD fire call dispatch data to develop a fire assessment program that focuses upon the proposed Fiscal Years 2017-18 assessable cost calculations. The objectives of this initial effort were to:

- Determine the full costs of providing fire services within the unincorporated area of the County and the City of Lake Placid.
- Review such final cost determination with the County to determine which elements provide the requisite special benefit to the assessed properties.
- Determine the relative benefit anticipated to be derived by each property use category within the unincorporated area of the County and the City of Lake Placid from the delivery of fire services.
- Recommend the fair and reasonable apportionment of assessable costs among benefited parcels within each property use category.
- Calculate assessment rates and parcel classifications for Fiscal Year 2017-18 based on the projected Fiscal Year 2017-18 assessable cost calculations.
- Ensure that the recommended assessment rates and parcel classifications conform to the statutory requirements of the Uniform Method.

APPORTIONMENT METHODOLOGY

The calculation of assessment rates for fire services depends on three separate, but interconnected, pieces of data. The first data element is the identification of the full cost of providing fire services through the development and determination of the assessable costs of providing such services. The second data element is the analysis of service delivery data, segregated to property use categories (i.e., fire call data). The third and final data component is a comprehensive analysis of all property use categories within the unincorporated County and the City of Lake Placid to determine which parcels receive a special benefit from the provision of fire services and to identify a fair and reasonable method of apportioning the assessable costs among all benefited parcels within each property use category.

The recommended fire services apportionment methodology allocates assessable costs based on the anticipated demand for fire services by categories of real property use as identified on the real property assessment roll prepared for the levy of ad valorem taxes. The assessable fire costs are allocated among real property use categories based upon the historical demand for these services. This demand is identified by examining the fire incident data as logged by the County in the CAD fire call dispatch data.

Service Description

Fire services are provided to the unincorporated area of the County and the City of Lake Placid primarily through the fire stations located throughout the County. These fire stations provide standard fire suppression and first responder services. Table 1 below provides a list of the stations.

Table 1
Highlands County Fire Stations

Station
DeSoto City Volunteer Fire Department
Highlands Lakes Volunteer Fire Department
Highlands Park Volunteer Fire Department
Lake Placid Volunteer Fire Department
Leisure Lakes Volunteer Fire Department
Lorida Volunteer Fire Department
Placid Lakes Volunteer Fire Department
Sun N Lakes Volunteer Fire Department
Venus Volunteer Fire Department
West Sebring Volunteer Fire Department

Source: Highlands County (2017).

Table 2 lists the location and the fire flow/pumping capacity of the fire apparatus. This information is used to determine the square footage cap for non-residential properties.

Table 2
Apparatus Inventory and Fire Flow

Station(s)	Apparatus	Fire Flow (GPM)
DeSoto City	Brush 18	250
	Brush 19	250
	Engine 18	1,250
	Tanker 18	750
	Engine 19	1,250
Highlands Lakes	Engine 1	1,250
	Tanker 1	1,250
	Tanker 2	1,250
	Brush 1	180
	Brush 2	180
Highlands Park	Engine 33	1,250
	Tanker 33	1,250
	Brush 33	125
	Brush 34	125
	Brush 35	125
Lake Placid	Engine 36	1,250
	Brush 36	250
	Brush 37	250

Station(s)	Apparatus	Fire Flow (GPM)
	Tanker 37	250
	Ladder 36	1,500
Leisure Lakes	Engine 117	1,250
	Engine 135	1,250
	Engine 95	750
	Brush 59	180
	Brush 131	250
	Brush 132	250
	Engine 161	1,250
Lorida	Engine 23	1,250
	Engine 24	1,250
	Tanker 23	500
	Brush 23	125
	Brush 24	125
	Brush 25	125
Placid Lakes	Pumper 39	1,000
	Brush 39	250
	Engine 39	1,250
	Tanker 40	1,250
	Brush 40	125
Sun N Lake	Tanker 41	750
	Engine 41	1,250
	Brush 41	125
	Brush 42	125
Venus	Engine 45	1,250
	Tanker 45	500
	Brush 45	180
	Brush 47	200
West Sebring	Pumper 9	1,250
	Brush 10	125
	Engine 10	1,250
	Brush 9	125
	Engine 9	1,250
	Brush 11	125
	Engine 7	1,000
	Quint 7	1,250
	Brush 7	125
	Brush 12	125
Total Fire Flow (GPM)		37,670

Source: Highlands County (2017).

The current pumping capacity is defined as the combined amount of water that all apparatus in the Fire Department can pump to a first alarm, non-residential fire. As outlined by Table 2, the pumping capacity of the Fire Department is 37,670 gallons per minute. Accordingly, based on National Fire Protection

Association fire fighting standards for fire-flow, the Fire Department currently has sufficient fire-flow capacity to provide service coverage in the event of a structure fire involving unlimited square footage.¹

¹ Source: National Fire Protection Association, "NFPA 1 Fire Code, 2015, Chapter 18"

Assessable Costs Calculations

The cost calculations, apportionment methodology and assessable rates developed apply to the fire services provided within the unincorporated area of the County and the City of Lake Placid.

Because of the Florida Supreme Court's opinion in City of North Lauderdale v. SMM Properties that emergency medical services (above the level of first response) do not provide a special benefit to property, in consolidated fire and rescue departments, line item assessable cost calculations must be allocated between fire protection and emergency medical services.

Currently, in Highlands County, emergency medical services are provided separately, therefore, all fire protection expenditures and revenues reflected in the budget provided by the County are directly allocable to fire protection. However, in the event the County were to integrate fire and emergency medical services administratively and functionally, the County's budget would need to be allocated between fire and EMS to comply with the City of North Lauderdale vs. SMM Properties decision.

ASSESSABLE COST CALCULATIONS

The fire assessable cost calculations for Fiscal Years 2017-18 are based on the following assumptions for the purpose of this Fire Assessment Memorandum.

- Pursuant to section 197.3632, Florida Statutes, the tax collector and property appraiser may each enter into an agreement with the local government for reimbursement of necessary administrative costs incurred from the collection of the non-ad valorem assessment. Accordingly, if any such fee(s) is charged, the fee may be recouped as an add-on to the total assessable costs for the year.

The line item "Collection Costs @ 2% (Tax Collector)" under "Additional Costs" reflects reimbursement for the collection costs associated with the non-ad valorem assessment incurred by the Tax Collector. Pursuant to section 197.3632, Florida Statutes, a municipal or county government shall only compensate the tax collector for the actual costs of collecting the non-ad valorem assessment. Accordingly, the Tax Collector's collection costs are estimated to be 2% of the total assessable costs. The applied collection charge is estimated to be adequate to cover the Tax Collector's actual collection costs.

- The line item "Statutory Discount @ 5% (4% early payment/1% non-collection)" under "Additional Costs" reflects a 95% collection of the Fire Assessment to cover the 4% statutory discount allowed by the Uniform Method and 1% reserve for under collection. Accordingly, the statutory discount is budgeted at 5% of the total assessable costs.
- The line item "Study Costs" under "Additional Costs" is the reimbursement to the County for the costs of conducting the assessment study. These costs are reimbursable through the assessment program.
- The line item "Notice Costs" under "Additional Costs" is the reimbursement to the County for the costs of producing and mailing the statutorily required first class notices to all affected property owners. These costs are reimbursable through the assessment program.

Table 3 provides a calculation of the assessable costs for Fiscal Year 2017-18 based on the above assumptions and the projected Fiscal Year 2017-18 budget as provided by the County. The calculation yields an assessable cost of \$6,478,943 for Fiscal Year 2017-18.

Table 3
Fiscal Year 2017-18 Assessable Budget

	Fiscal Year 17 - 18 Assessable Budget
Personnel	
REGULAR SALARIES & WAGES	\$553,826
OTHER SALARIES & WAGES	\$24,000
OVERTIME	\$3,500
SEPCIAL PAY - INCENTIVE	\$2,640
FICA TAXES	\$44,697
RETIREMENT CONTRIBUTIONS	\$126,958
LIFE & HEALTH INSURANCE	\$101,033
WORKERS COMPENSATION	\$37,751
Total Personnel	\$894,405
Operating	
PROFESSIONAL SERVICES	\$20,000
CONTRACTUAL SERVICES	\$149,939
TRAVEL & PER DIEM	\$6,929
COMMUNICATIONS & FREIGHT	\$32,688
UTILITY SERVICES	\$55,006
RENTALS & LEASES	\$14,495
INSURANCE	\$60,595
REPAIR & MAINTENANCE	\$276,352
PRINTING & BINDING	\$862
OTHER CHARGES/OBLIGATIONS	\$2,800
ADMIN EXP	\$169,804
OFFICE SUPPLIES	\$1,327
OPERATING SUPPLIES	\$391,469
GAS & OIL	\$62,235
BOOKS	\$18,500
SUBSCRIPTIONS	\$3,450
EDUCATION & TRAINING	\$101,776
DUES & MEMBERSHIPS	\$6,039
PRINCIPAL PAYMENTS	\$110,249
INTEREST PAYMENTS	\$9,072
OTHER USES	\$931
RESERVE FOR CONTINGENCY	\$31,719
MUTUAL AID FUNDS	\$70,000
Total Operating	\$1,596,237
Capital	
IMPROVEMENTS OTHER THAN	\$20,000
MACHINERY & EQUIPMENT	\$476,799
APPARATUS	\$100,000
STATIONS	\$225,000
Total Capital	\$821,799
SERVICE ENHANCEMENTS	
PERSONNEL	\$2,160,000
TRAINING	\$144,000
GEAR	\$126,000
STATIONS	\$115,000
Total SERVICE ENHANCEMENTS	\$2,545,000

Additional Costs	
COLLECTION COSTS @ 2% (TAX COLLECTOR)	\$129,579
STATUTORY DISCOUNT @ 5% (4% EARLY PAYMENT / 1% NON-COLLECTION)	\$323,948
STUDY COSTS	\$128,250
NOTICE COSTS	\$54,725
Total Additional Costs	\$636,502
Total Assessable Costs	\$6,478,943

Determination of Fire Services Demand

INCIDENT DATA

GSG obtained information from the County's CAD dispatch system in an electronic format, identifying the number and type of fire rescue incident responses within the unincorporated County and the City of Lake Placid for a one-year period (Calendar Year 2016).

The County's CAD dispatch data was geo-coded in order to tie each call to the parcel that it was dispatched to. Each call was then assigned to a property use category based upon the parcel's use as determined by the DOR Code as shown in Appendix A.

GSG analyzed one year of fire rescue incident data from the CAD dispatch system files to evaluate trends and determine if aberrations were present. The CAD dispatch system recorded a total of 1,052 fire incidents within the unincorporated County and the City of Lake Placid during Calendar Year 2016.

There are certain fire incidents that could not be assigned to a specific property or parcel. These calls represent either non-specific type incidents, which are incidents that could not be correlated to a specific parcel or calls that involved auto accidents and other types of incidents along roads and highways.

Of the 1,052 fire incidents, 1,011 were calls to specific property uses. The remaining 41 incidents were considered non-specific type incidents. Because of the inability to correlate these non-specific type incidents to specific property categories, the call analysis does not include these 41 incidents. Additionally, the level of services required to meet anticipated demand for fire protection services and the corresponding annual fire protection budget required to fund fire protection services provided to non-specific property uses would be required notwithstanding the occurrence of any incidents from such non-specific property uses.

The 1,011 fire type incidents corresponding to specific properties were assigned to the following property use categories: residential, commercial, industrial/warehouse, institutional and land.

Table 4 outlines the property use category assignment of fire type incidents based on the analysis conducted.

Table 4
Fire Calls by Category (Calendar Year 2016)

Category	Number of Calls
Residential	529
Commercial	117
Industrial/Warehouse	32
Institutional	99
Land	234
Total	1,011

Source: Highlands County (2017).

PROPERTY DATA

GSG obtained information from the ad valorem tax roll from the Highlands County Property Appraiser's office to develop the assessment roll.

Each property use within the assessable area on the ad valorem tax roll was assigned to one or more of the property use categories based on their assignment of use by the Highlands County Property Appraiser or verification of use obtained through field research. The Property Appraiser assigns a building improvement code based on a building's assigned use on a parcel of property. GSG conducted an analysis regarding building improvement types based on the assignment of use by the Highlands County Property Appraiser or verification obtained through field research. A list of building improvement codes used by the Highlands County Property Appraiser as well as the assigned assessment rate category is provided as Appendix B.

Further analysis was conducted of the parcels based on the Florida Department of Revenue (DOR) four-digit property use codes reflected in the Rule 12D-8.008, Florida Administrative Code. A listing of DOR codes and associated property description is provided as Appendix A.

For parcels assigned to the Residential Property Use Category, GSG utilized the total number of dwelling units as determined from the building files on the ad valorem tax roll or through the use of field research.

For parcels within the Non-Residential Property Use Category, GSG utilized the amount of square footage of the non-residential structures as determined from the building files on the ad valorem tax roll or through the use of field research.

For parcels within the undeveloped land category, GSG utilized the total number of unimproved parcels within the County as determined from the Property Appraiser's land files or through the use of field research. Submerged land and rights-of-way parcels were removed from the data where they could be identified.

Computation of Fire Assessments

SPECIAL BENEFIT ASSUMPTIONS

The following assumptions support a finding that the fire services, facilities, and programs provided by the County provide a special benefit to the assessed parcels.

- Fire services, facilities, and programs possess a logical relationship to the use and enjoyment of property by: (i) protecting the value and integrity of improvements and structures through the availability and provision of comprehensive fire services; (ii) protecting the life and safety of intended occupants in the use and enjoyment of property; and (iii) lowering the cost of fire insurance by the presence of a professional and comprehensive fire program.
- The availability and provision of comprehensive fire services enhance and strengthen the relationship of such services to the use and enjoyment of the parcels of property, the market perception of the area and, ultimately, the property values within the assessment area.

APPORTIONMENT METHODOLOGY

The following section describes the assessment apportionment methodology for fire services based on: (i) the fire assessable cost calculations; (ii) the ad valorem tax roll maintained by the property appraiser; and (iii) the CAD dispatch system data.

COST APPORTIONMENT

The Fiscal Year 2017-18 assessable costs were apportioned among property use categories based upon the historical demand for fire services as shown in Table 4 above. This apportionment is illustrated in Table 5.

Table 5
Fiscal Year 2017-18 Cost Apportionment

Property Category	Number of Calls	Percentage of Calls	Portion of Fiscal Year 2017-18 Assessable Budget
Residential	529	52.32%	\$3,390,070
Commercial	117	11.57%	\$749,789
Industrial/Warehouse	32	3.17%	\$205,070
Institutional	99	9.79%	\$634,437
Land	234	23.15%	\$1,499,577
Total	1,011	100.00%	\$6,478,943

PARCEL APPORTIONMENT

The share of the assessable costs apportioned to each property use category was further apportioned among the individual buildings of property within each property use category in the manner described in Table 6.

Table 6
Parcel Apportionment within Property Use Categories

Category	Parcel Apportionment
Residential	Dwelling Unit
Non-Residential	
-Commercial	Square Footage
-Industrial/Warehouse	
-Institutional	
Land	Per Parcel

Applying the foregoing parcel apportionment methodology, fire assessment rates were computed for each property use category. The specific methodology, underlying special benefit and fair apportionment assumptions are included below and generally described.

RESIDENTIAL PARCEL APPORTIONMENT ASSUMPTIONS

The following assumptions support findings that the parcel apportionment applied in the Residential Property Use Classification is fair and reasonable.

- The size or the value of the residential parcel does not determine the scope of the required fire response. The potential demand for fire services is driven by the existence of a dwelling unit and the anticipated average occupant population.
- Apportioning the assessed costs for fire services attributable to the residential property use category on a per dwelling unit basis is required to avoid cost inefficiency and unnecessary administration, and is a fair and reasonable method of parcel apportionment based upon historical call data.
- The historical demand for fire protection service availability for multi-family and single family residential property is substantially similar and any difference in the percentage of documented fire protection calls to such specific property uses is statistically insignificant.

RESIDENTIAL PARCEL APPORTIONMENT CALCULATION

Based upon the historical demand for fire services, the percentages of the County's total fire assessable costs attributable to residential properties were calculated. The amount of the assessable costs allocable to property in this residential property use category was divided by the number of dwelling units in the residential category to compute the fire assessment to be imposed against each dwelling unit. The Residential Category includes single-family dwelling units, mobile homes, multi-family dwelling units consisting of duplexes and multi-family buildings with three or more dwelling units, condominiums and townhouses. For each residential parcel, the actual number of dwelling units located on the parcel will be multiplied by the dwelling unit charge per category to compute the residential fire assessment for the parcel.

Table 7 illustrates the assignment of dwelling units under this apportionment methodology to the Residential Property Use Category.

Table 7
Parcel Apportionment - Residential Property Use Category

Residential Property Use Category	Number of Dwelling Units
Residential Dwelling Units	37,380

Source: Highlands County (2017).

NON-RESIDENTIAL PARCEL APPORTIONMENT ASSUMPTIONS

The capacity to handle fires and other emergencies in Non-Residential Property Use Classification is governed by the following:

- The current pumping capacity is defined as, the combined amount of water that all apparatus in the can pump to a first alarm non-residential fire. As shown in Table 3, a maximum of 37,670 gallons per minute is available within the County and the City of Lake Placid. Accordingly, based on National Fire Protection Association firefighting standards for fire-flow, there is sufficient fire-flow capacity to provide service coverage in the event of a structure fire involving unlimited square footage.

The following assumption supports findings that the parcel apportionment applied in the Non-Residential Property Use Classification is fair and reasonable.

- The separation of the non-residential buildings by actual square footage is fair and reasonable for the purpose of parcel apportionment because the demand for fire services is determined and measured by the actual square footage of structures and improvements within benefited parcels.
- Recreational vehicle park property will be treated as commercial property for non-ad valorem special assessments levied by the District, like the fire assessment. It is fair and reasonable to treat each space within recreational vehicle park property as a building of commercial property and assign the square footage of 191 square feet, the average size of a recreational vehicle, according to the Florida Association of RV Parks and Campgrounds.

NON-RESIDENTIAL PARCEL APPORTIONMENT CALCULATION

Based upon the historical demand for fire services, property in the Non-Residential Property Use Classification will be responsible for funding a percentage of assessable costs. The amount of the assessable costs allocable to each non-residential parcel will be based upon the aggregate of all non-residential building square footage situated on the parcel.

The non-residential assessment rate was determined by multiplying the percent of total fire calls attributable to non-residential property by the total assessable costs. This calculated amount of assessable costs was then divided by the number of non-residential square feet to obtain an assessment per square foot.

Table 8
Parcel Apportionment - Non-Residential Property Use Categories

Non-Residential Property Use Categories	Total Square Feet
Commercial	5,121,349
Industrial/Warehouse	4,259,815
Institutional	3,623,112

Source: Highlands County (2017).

LAND APPORTIONMENT ASSUMPTIONS

The following assumptions support findings that the parcel apportionment applied in the Land Property Use Category is fair and reasonable.

- Fires on vacant land and agricultural parcels place a recognized and measurable demand on the fire protection services of the County. Accordingly, it is fair and reasonable to apportion the assessable costs for fire protection services attributable to the Land Property Use Category based on such property's demand percentage.
- Apportioning the assessed costs for fire protection services attributable to the Land Property Use Category on a per parcel basis is a fair and reasonable method for parcel apportionment. However, due to the limited apparatus and resources available in the County for combating brush fires, the County has determined that a brush fire greater than one acre in size is not capable of being suppressed by the County fire department and the County's fire control activities under such circumstances are directed to avoiding the spread of the fire until additional personnel, apparatus and equipment arrive on the scene. Accordingly, it is fair and reasonable to assess on a per parcel basis for Tax Parcels within the Land Property Use Category.

LAND APPORTIONMENT CALCULATION

Based upon the historical demand for fire rescue services, the percentage of assessable costs attributable to vacant and agricultural land was calculated. For parcels within the Land Property Use Category, the number of parcels was obtained from the Property Appraiser's land files.

The total costs attributable to vacant land are then divided by the sum of the number of parcels in the Land Property Use Category. This per parcel amount is then applied to each parcel to compute the assessment amount for the parcel.

Table 9 illustrates the assignment of parcels under this apportionment methodology for the Land Property Use category.

Table 9
Parcel Apportionment Land Property Use Category

Land Property Use Category	Number of Parcels
Land	64,967

Source: Highlands County Property Appraiser (2017).

COMPUTATION OF FIRE ASSESSMENT RATES

Applying the parcel apportionment methodology, fire assessment rates were computed for each specified property use category. Based on the assessable costs of providing fire services, the number of fire calls apportioned to specific property categories and the number of billing units within the specified property categories, Table 10 illustrates the assessment rates after application of the assessment methodology based on 100 percent funding of the total assessable costs for Fiscal Year 2017-18.

Table 10
Fiscal Year 2017-18 Fire Assessment Rates (100% Funding)

Residential Property Use Category	Rate Per Dwelling Unit
Residential	\$91.00
Non-Residential Property Use Categories	Rate Per Square Foot
Commercial	\$0.15

Non-Residential Property Use Categories	Total Square Feet
Industrial/Warehouse	\$0.05
Institutional	\$0.18
Land Property Use Category	Rate Per Parcel
Land	\$24.00

Estimated Gross Revenue: \$6,478,943; Estimated Exempt Buy-down: \$; Estimated Net Revenue: \$5,707,384; Estimated Net Revenue at 95%: \$4,851,277.

EXEMPTIONS AND IMPACT OF EXEMPTIONS

Because the fire assessment is being developed to meet the case law standards for a valid special assessment, any proposed exemptions require special scrutiny. The crafting of an exemption must be founded upon a legitimate public purpose, and not tramp on state or federal constitutional concepts of equal protection and constitutional prohibitions against establishment of religion or the use of the public treasury directly or indirectly to aid religious institutions. Furthermore, to ensure public acceptance, any exemption must make common sense and be fundamentally fair. Finally, the impact of any proposed exemption should be evaluated in terms of its magnitude and fiscal consequences on the County's general funds.

Whenever crafting an exemption, it is important to understand that the fair apportionment element required by Florida case law prohibits the shifting of the fiscal costs of any special assessment from exempt landowners to other non-exempt landowners. In other words, the funding for an exemption from a special assessment must come from a legally available external revenue source, such as the County's general fund. Funding for fire assessment exemptions cannot come from the proceeds derived directly from the imposition of special assessments for fire services and facilities. Because any exemption must be funded by an external funding source, the grant of any exemption will not have any impact upon the fire assessment to be imposed upon any other non-exempt parcels.

Whether the County decides to fund exemptions for fire assessments on property owned by non-governmental entities would be based upon a determination that such exemptions constituted a valid public purpose. The importance of special assessments on non-governmental, tax-exempt parcels has been addressed by the Florida Supreme Court in Sarasota County v. Sarasota Church of Christ, 667 So.2d 180 (Fla. 1995) (In reciting the facts of the case on appeal, the Court stated that the party challenging the assessment consisted of religious organizations or entities owning developed real property in Sarasota County [the Churches] that are exempt from ad valorem taxes but not from special assessments.) The funding of exemptions for non-governmentally owned institutional property wholly exempt from ad valorem taxes could be based on a finding that such properties provide facilities and uses to their ownership, occupants or membership, as well as the public in general, that otherwise might be required to be provided by the County. Such a finding would be the basis for a determination that such properties served a legitimate public purpose or provided a public benefit that merited the County's funding of an exemption from the fire assessment.

In identifying an appropriate exemption plan, the County should be cautious not to confuse the ownership of a parcel with the parcel's use. For example, a determination to exempt properties used for institutional purposes would have to be extended to similar institutional property owned by entities created for profit, as well as institutional property owned by non-profit or governmental entities. However, if the County wanted to make the policy decision to narrow the exemption to only institutional property owned by not-for-profit entities, it might consider adding a second test to the exemption which afforded exemptions to institutional properties which were wholly exempt from ad valorem taxes. Adding the tax-exempt criteria further narrows the exemption on a well-tested tax-exempt premise.

Whether the County decides to charge governmental entities or fund exemptions on governmentally-owned property requires somewhat different considerations. First, a forced sale of government property is not available as an enforcement mechanism. The charge to governmentally-owned parcels would be more akin to a service fee for each government parcel's proportionate benefit from the availability and provision of fire services by the County. The billing would be direct, received by government buildings and facilities. Enforcement would be by judicial proceedings to require payment. As to each level of government, differing concepts of immunity and other statutory provisions or case law decisions may prevent collection or frustrate special assessment imposition.

State and federal laws contain a patchwork of provisions exempting certain governmental property owners from the payment of special assessments. For example, section 423.02, Florida Statutes, exempts certain housing projects from the payment of special assessments. This general law does provide that a housing authority may agree with a local government to make payments in lieu of taxes, but experience is that such an agreement, if in existence at all, under-funds the impact of such properties on a County's fire assessable cost calculations.

Accordingly, if the County chooses to exempt governmentally-owned property from the fire assessment and fund such costs from inter-local agreement with the affected government or from the County's general fund, it is important that the County take steps to set up a reasonable contingency within its general budget to fund the cost incurred in providing fire services to government owned properties.

Additionally, per F.S. 125.01(1)(r) vacant unimproved agricultural land, non-residential agricultural buildings with a just value under \$10,000 and agricultural pole barns are exempt from the fire assessment. It is important that the County take steps to set up a reasonable contingency within its general budget to fund the cost incurred in providing fire services to these agricultural exempt properties.

Table 11 summarizes the estimated impact for Fiscal Year 2017-18 of exempting institutional tax-exempt, governmental tax-exempt and agricultural exempt property.

Table 11
Fiscal Year 2017-18 Estimated Impact of Exemptions (100% Funding)

Financial Classification	Amount
Estimated Assessable Costs	\$6,478,943
Estimated Buy-down for Institutional Tax-Exempt	\$238,564
Estimated Buy-down for Governmental Tax-Exempt	\$453,411
Estimated Buy-down for Agricultural Exempt Property	\$79,584
Estimated Revenue Generated	\$5,707,384
Estimated Revenue Generated at 95%	\$4,851,277

Outstanding Issues

Issue 1: Exemption of Institutional, Tax-Exempt Parcels (Non-Governmental)

The aggregate cost for the fire services that are available to institutional, wholly tax-exempt properties was estimated as part of the Institutional Property Use Category based on an analysis of each parcel's use. The fair apportionment concepts in the methodology provided within this Assessment Memorandum require an identification of the calls for service to these properties and, therefore, their respective costs. If a policy decision is made to exempt institutional, tax-exempt property, the proportional assessed costs allocated to such exemptions must be funded from other legally available sources because the financial burden of such exemption cannot be apportioned to non-exempt parcels. With any exemption, care should be taken to craft and ensure a non-discriminatory exemption class based upon valid public purpose concepts.

Issue 2: Exemption of Governmental Parcels

In addition to the institutional, wholly tax-exempt properties, the aggregate cost for fire services provided to schools and governmental properties (municipalities, county, state, federal and any sovereign state or nation) was also estimated as part of the Institutional Property Use Category based on an analysis of each parcel's use. The fair apportionment concepts in the methodology provided within this Assessment Memorandum require an identification of the calls for service to these properties and, therefore, their respective costs. If a policy decision is made to exempt governmental property, the proportional assessed costs allocated to such exemptions must be funded from other legally available sources because the financial burden of such exemption cannot be apportioned to non-exempt parcels.

Issue 3: Collection of Assessments from Governmental Property

A special assessment can be imposed against governmental property to pay for the benefits that such property receives. However, as to each level of government, differing concepts of immunity and other statutory provisions or case law may prevent collection or frustrate special assessment imposition. In addition, Florida case law is clear that the payment of such assessments cannot be enforced by a lien against the public property. Rather, the enforcement remedy would be a judicial action to compel payment. A collateral issue in enforcing payment is the legislative authorization of the public agency to pay the charge or special assessment imposed. Thus, the law establishing the expenditure authority of the specific governmental or public agency or its appropriation discretion must be examined to determine whether the governmental unit has the authority to pay a charge or assessment for fire services provided by the County. From a collection standpoint, each governmental unit should be sent a separate bill and no attempt should be made to collect the special assessment using the Uniform Method.

Issue 4: Apportionment Methodology

The apportionment methodology is based on the level of services and resources currently being provided or projected to be provided by the County. Any changes in the level of services or resources within the unincorporated County and the City of Lake Placid could affect the apportionment methodology and should be analyzed prior to imposition of future fire assessments.

Issue 5: Non-Specific Calls

In the fire call analysis, certain fire related calls were classified as non-property specific, because of the location of occurrence in the incident report. These calls represent non-

specific incidents that either could not be correlated to a specific parcel or involved auto accidents or other types of incidents along roads and highways. These calls are excluded from the analysis that determines the percentage of calls for service to respective property types and therefore, are not considered in the determination of the extent of budget required to fund the department. Because the budget is established based on the ability of the department to adequately protect structures, no adjustment has been made to the budget due to non-property specific calls. Further, even if such calls did affect the cost of the department's operations, there are sufficient non-assessment revenues available to offset any impact upon the budget.

Issue 6: Verification of Real Property Assessment Roll Data

Data utilized to assign property use categories and the number of billing units per category is based upon information maintained on the real property assessment roll maintained by the Highlands County Property Appraiser for the levy of ad valorem taxes. A successful assessment program collected under the Uniform Method must use the information maintained by the property appraiser on the ad valorem tax roll. However, property appraisers are charged only with the responsibility of determining the value of all property within each County and maintaining certain records contained therewith, specifically the preparation of the ad valorem tax roll. The ad valorem tax roll is designed solely to provide the data required by property appraisers to fulfill their charge of assessing the value of property. In contrast, assessment programs focus on property use, size of improvements and other characteristics. Much of the information used for the development of the assessment rates was provided in the ad valorem tax roll. However, further verification of the data for some parcels of property was conducted.

Issue 7: Hardship Assistance Program

The County has the option of creating a Hardship Assistance Program to assist residential property owners with homesteaded property, who meet the eligibility criteria, with the financial burden created by the imposition of the Fire Assessment. The eligibility criteria are typically based upon Federal Government Poverty Level Guidelines established by the United States Department of Health and Human Services, as adjusted for family size, but may also be based upon criteria from an existing hardship assistance program. Eligibility for hardship assistance would be determined by County staff.

Issue 8: Mobile Home and Recreational Vehicle (RV) Park Vacancy Credit

Because of the transient use and potential extraordinary vacancies within mobile home and RV parks as compared to other residential property and the lack of demand for fire services for unoccupied spaces, it is fair and reasonable to provide for an extraordinary vacancy adjustment procedure for mobile home and RV properties. Vacant mobile home and RV spaces within a mobile home or RV park will be charged; however, these properties will be eligible for an extraordinary vacancy adjustment for vacant mobile home and RV spaces.

Implementation

TAX BILL FISCAL YEAR 2017-18

The following section describes the steps required to implement and collect the Fire Assessment on the ad valorem tax bill for Fiscal Year 2017-18 and thereafter. Following this section is a critical events schedule identifying specific dates for all significant remaining events for the County to comply with those prescribed by the County's home rule ordinance authorizing the imposition of the annual Fire Assessments.

To use the tax bill collection process, a local government must follow the strict procedures provided in section 197.3632, Florida Statutes (Uniform Method). A local government must initiate the process almost a year before it intends to begin using the Uniform Method to collect the assessments. The process begins with the passage of a resolution of intent prior to January 1 or, if the property appraiser, tax collector, and local government agree, March 1. The adoption of a resolution of intent does not obligate the local government to use the method or to impose a special assessment, but it is a prerequisite to using the Uniform Method. The County adopted the resolution of intent prior to January 1, 2017.

Under section 197.3632, Florida Statutes, property appraisers must annually provide certain information to local governments by June 1 to assist the local government in the preparation of special assessment rolls to be collected under the Uniform Method.

Assuming the County decides to proceed with implementing a fire assessment, a draft home rule ordinance must be adopted that will outline the procedural steps and notifications required to impose a recurring annual fire assessment using the tax bill collection method.

Pursuant to the Home Rule Ordinance, the County will be required to adopt an initial assessment resolution. Such initial assessment resolution should, among other things, briefly describe the Fire Assessment Program, the method of apportionment, set a public hearing date for final consideration, and direct and authorize the mailed and published notifications to those property owners included on an initial assessment roll.

Upon adoption of the initial assessment resolution, the County will have made the tentative decision to move forward with the imposition of special assessments to fund all or a portion of the fire assessable costs. After adopting the necessary implementing documentation, the local government must develop a computerized, non-ad valorem assessment roll that contains the basis and rate of the assessment and electronically applies it to each building subject to the assessment. The non-ad valorem assessment roll must utilize the parcel identification number and property use code classifications maintained by the property appraiser and be compatible with the ad valorem tax roll.

Statutory requirements to use the tax bill collection method provide that a service assessment roll must be adopted at a public hearing between January 1 and September 15 so the tax collector can merge it with the ad valorem tax roll and mail a single bill for the combined collection of assessments and ad valorem taxes. At least 20 days prior to the public hearing, a local government must publish notice of the hearing in a newspaper of general circulation within the government's boundaries and by individual first class United States mail to the owners of property subject to the assessment. The mailed notice can either be a separate notice or the County may have the option to use the Truth-In-Millage (TRIM) notice to notify property owners of their respective fire assessment amount. The use of TRIM is dependent upon the agreement of the property appraiser and whether the TRIM notice meets the necessary statutory requirements.

At the public hearing, the County will adopt a final assessment resolution, which, among other things, will confirm the initial assessment resolution, articulate the final rate of assessments, approve the assessment roll, and direct and authorize the method of collection.

Once the final assessment resolution is adopted and the roll certified by September 15th to the Highlands County Tax Collector to be collected along with ad valorem taxes, any minor modifications, corrections or errors must be made in accordance with the procedure applicable to the correction of errors on the tax roll, upon written direction from the County to the Highlands County Tax Collector.

Collection of the special assessments and ad valorem taxes begins in November. Failure to pay the assessments and taxes results in the issuance of a tax certificate and may result in the sale of a tax deed.

PRELIMINARY IMPLEMENTATION SCHEDULE

Outlined in Table 12 is a preliminary implementation schedule identifying specific dates for significant remaining events necessary for the County to implement the fire assessment program and collect the assessments using a tax bill collection method for Fiscal Year 2017-18.

Table 12
Preliminary Implementation Schedule

County adopts Service Assessment Ordinance (Public Hearing)	August 15, 2017
County adopts Initial Assessment Resolution	August 15, 2017
County advertises Public Hearing to adopt Final Assessment Resolution	By August 24, 2017
Notices mailed to Affected Property Owners	By August 24, 2017
Public Hearing to adopt Final Assessment Resolution (Special Meeting)	September 14, 2017
Certify Fire Assessment Roll to Tax Collector	By September 15, 2017
Tax Bills Mailed by County Tax Collector	By November 1, 2017

Appendix A

DEPARTMENT OF REVENUE PROPERTY USE CODES & DESCRIPTIONS

DOR Code and Description	Category
00 - VACANT	Land
01 - SINGLE FAMILY	Residential
03 - MULTI-FAM 10+ UNITS	Residential
05 - COOPERATIVES	Residential
06 - RETIREMENT HOMES	Institutional
07 - MISCELLANEOUS	Residential
07 - MISCELLANEOUS	Land
08 - MULTI-FAM <10 UNITS	Residential
10 - VACANT COMMERCIAL	Land
11 - STORES, 1 STORY	Commercial
12 - MIXED USE	Commercial
15 - REG SHOPPING CENTERS	Commercial
16 - COMMUNITY SHOPPING	Commercial
17 - OFF BLDG 1 STORY	Commercial
18 - OFF BLDG MULTI-STORY	Commercial
19 - PROFESSIONAL BLDG	Commercial
20 - AIRPORT/BUS TERMS	Commercial
21 - RESTAURANTS/CAFE	Commercial
23 - FINANCIAL INST	Commercial
24 - INS COMPANY OFF	Commercial
27 - VEHICLE SL/SERV/RENT	Commercial
28 - PARK LOTS, M/H PARKS	Residential
33 - NIGHTCLUBS/BARS	Commercial
34 - BWL AL/SKT RNK/PL HL	Commercial
36 - CAMPS	Commercial
38 - GOLF COURSES	Commercial
39 - HOTELS AND MOTELS	Commercial
40 - VACANT INDUSTRIAL	Land
41 - LIGHT MANUFACTURE	Industrial/Warehouse
43 - LUMBER YARDS	Industrial/Warehouse
48 - WAREHOUSE STOR/DIST	Industrial/Warehouse
49 - OPEN STORAGE	Industrial/Warehouse
58 - TIMBERLAND 50-59	Land
63 - GRAZING SOIL CAP 4	Land
66 - GROVES/ORCHARDS	Land
69 - ORNAMENTALS/MISC	Land
70 - VAC INSTITUTIONAL	Land
71 - CHURCHES	Institutional
72 - PRIVATE SCHOOLS	Institutional
73 - PRIVATE HOSPITALS	Institutional
75 - NON-PROFIT SERVICE	Institutional
76 - MORTUARY/CEMETERY	Institutional
78 - REST HOMES	Institutional
79 - CULTURAL GROUPS	Institutional
82 - FOREST, PARKS REC	Land
83 - PUBLIC SCHOOLS	Institutional
84 - COLLEGES	Institutional
86 - COUNTY	Institutional

DOR Code and Description	Category
87 - STATE	Institutional
89 - MUNICIPAL	Institutional
90 - LEASEHOLD INTEREST	Industrial/Warehouse
91 - UTILITIES	Industrial/Warehouse
94 - RIGHTS-OF-WAY	Non-Specific
9802 - CENTRALLY ASSESSED	Non-Specific
99 - NON-AG ACREAGE	Land
N. - NOTE RECORD	Non-Specific

Appendix B

HIGHLANDS COUNTY PROPERTY APPRAISER BUILDING IMPROVEMENT CODES AND USE DESCRIPTIONS

Building Use Code	Description	Category Assigned
00	VACANT	NOT USED
01	SINGLE FAMILY RESIDENTIAL	RESIDENTIAL
02	SFR MODULAR	RESIDENTIAL
03	CONVERTED SFR	COMMERCIAL
05	RESIDENTIAL DETACHED GARAGE	NOT USED
06	RENTAL UNIT	RESIDENTIAL
07	DAY CARE CENTER	COMMERCIAL
08	MOBILE HOME	RESIDENTIAL
09	EXCEPTIONAL RESIDENTIAL	RESIDENTIAL
10	CONDOMINIUM - LOW RISE	RESIDENTIAL
11	CONDOMINIUM - HIGH RISE	RESIDENTIAL
12	CONDOMINIUM - TOWN/ROW HOUSE	RESIDENTIAL
13	CONDOMINIUM - VILLA	RESIDENTIAL
14	SFR - LOW RISE	RESIDENTIAL
15	SFR - HIGH RISE	RESIDENTIAL
16	SFR-TOWN/ROW HOUSE	RESIDENTIAL
17	DORMITORY	INSTITUTIONAL
18	INTERVAL OWNERSHIP - LOW RISE	RESIDENTIAL
19	INTERVAL OWNERSHIP - HIGH RISE	RESIDENTIAL
20	INTERVAL OWNERSHIP - TOWNHOUSE	RESIDENTIAL
22	MULTI-FAMILY - LOW RISE	RESIDENTIAL
23	MULTI-FAMILY - HIGH RISE	RESIDENTIAL
24	MULTI-FAMILY - TOWN HOUSE	RESIDENTIAL
25	MULTI-FAMILY - OLDER APARTMENT	RESIDENTIAL
26	DUPLEX/ONE HALF	RESIDENTIAL
27	DUPLEX	RESIDENTIAL
28	TRIPLEX/QUADRAPLEX	RESIDENTIAL
29	DOME/A FRAME	RESIDENTIAL
35	STORES - INDIVIDUAL	COMMERCIAL
36	DISCOUNT STORE	COMMERCIAL
37	DEPARTMENT STORE	COMMERCIAL
38	STRIP STORES	COMMERCIAL
39	SHOPPING CENTER - COMMUNITY	COMMERCIAL
40	SHOPPING CENTER - REGIONAL	COMMERCIAL
42	SUPERMARKET	COMMERCIAL
43	CONVENIENCE STORE	COMMERCIAL
44	HOTEL	COMMERCIAL
45	HOTEL/MOTEL - OFFICE COMP	COMMERCIAL
46	MOTEL - LOW COST	COMMERCIAL
47	MOTEL - MODERN	COMMERCIAL
48	PACKAGE/LOUNGE	COMMERCIAL
49	OFFICES - LOW COST	COMMERCIAL
50	OFFICES - STANDARD	COMMERCIAL

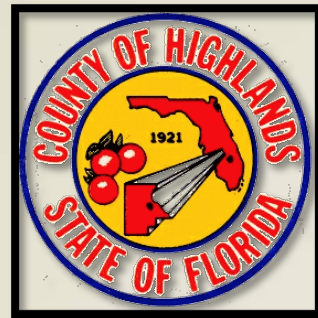
Building Use Code	Description	Category Assigned
52	MEDICAL OFFICE	COMMERCIAL
53	HOSPITAL	INSTITUTIONAL
54	CONVALESCENCE HOME	INSTITUTIONAL
55	RESTAURANT/LOW COST	COMMERCIAL
56	RESTAURANT/LOUNGE	COMMERCIAL
57	RESTAURANT - FAST FOOD	COMMERCIAL
58	BOWLING ALLEY/ROLLER RINK	COMMERCIAL
59	ARENA/GYM	COMMERCIAL
60	AUDITORIUM	COMMERCIAL
61	CINEMA	COMMERCIAL
62	BANK	COMMERCIAL
63	BRANCH BANK	COMMERCIAL
64	SERVICE STATION	COMMERCIAL
65	GARAGE	COMMERCIAL
66	VEHICLE SALES/REPAIR	COMMERCIAL
67	SERVICE SHOP	COMMERCIAL
68	MORTUARY	INSTITUTIONAL
69	CLUB HOUSE	INSTITUTIONAL
69c	COMMERCIAL CLUBHOUSE	COMMERCIAL
72	CAR WASH	COMMERCIAL
73	SWITCHING STATION	NOT USED
74	MEDICAL CLINIC	INSTITUTIONAL
74c	Commercial Medical Clinic	COMMERCIAL
75	NURSING HOME	NURSING HOMES
77	EXCEPTIONAL OFFICE	COMMERCIAL
78	EXCEPTIONAL STORE	COMMERCIAL
79	EXCEPTIONAL COMMERCIAL	COMMERCIAL
80	MANUFACTURING - LIGHT	INDUSTRIAL/WAREHOUSE
81	MANUFACTURING - HEAVY	INDUSTRIAL/WAREHOUSE
82	WAREHOUSE - DISTRIBUTION	INDUSTRIAL/WAREHOUSE
83	WAREHOUSE - MINI	INDUSTRIAL/WAREHOUSE
84	WAREHOUSE - STORAGE	INDUSTRIAL/WAREHOUSE
85	EQUIPMENT STORAGE	INDUSTRIAL/WAREHOUSE
86	BARNS	NOT USED
87	PRE-FABRICATED METAL BUILDING	INDUSTRIAL/WAREHOUSE
88	MILKING BARN	NOT USED
89	EXCEPTIONAL INDUSTRIAL	INDUSTRIAL/WAREHOUSE
90	SCHOOL	INSTITUTIONAL
91	CHURCH	INSTITUTIONAL
92	EDUCATIONAL/RELIGIOUS	INSTITUTIONAL
93	GOVERNMENTAL BUILDING	INSTITUTIONAL
DUP	DUP BLDG (NON-RESIDENTIAL)	NOT USED
LAND	LAND ACREAGE RECORD	LAND

Building Use Code	Description	Category Assigned
MHPK	MOBILE HOME PARK	RESIDENTIAL
RVPK	RV PARK	COMMERCIAL
SOH	SAVE OUR HOMES DUP BLDG	NOT USED

March 2016

Fire and EMS Needs Assessment

Executive Summary Report



Highlands County, Florida

Prepared by:



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CONSULTANT REPORT

HIGHLANDS COUNTY FIRE & EMS NEEDS ASSESSMENT

EXECUTIVE SUMMARY

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
REPORT STRUCTURE	1
GENERAL OBSERVATIONS - EMS	1
<i>EMS Priority 1 Recommendations</i>	2
<i>EMS Priority 2 Recommendations</i>	7
GENERAL OBSERVATIONS – FIRE SERVICES	8
<i>Fire Services Priority 1 Recommendations</i>	10
<i>Fire Services Priority 2 Recommendations</i>	14
ALTERNATIVES FOR FUTURE CONSIDERATION	15
<i>Alternative 1: Creation Of A Countywide Consolidated Volunteer Fire Service</i>	16
<i>Alternative 2: Partial Consolidation Of EMS And Fire Services While Maintaining the Existing Volunteer Fire Service Delivery Model</i>	17
<i>Alternative 3: Full Consolidation Of EMS And Fire Services in Highlands County</i>	18

Executive Summary

Report Structure

Highlands County, FL initiated a sealed-bid procurement process for a consultant to conduct a needs assessment for both the fire and EMS services within the unincorporated County, where 78% of the population resides. This study did not include the cities of Sebring and Avon Park. This process resulted in the selection of Fitch & Associates, LLC to conduct the study and a contract was signed February 13, 2015.

A combination of multiple onsite visits, structured interviews, direct observations, document reviews, budget analyses, and quantitative, temporal, and geospatial analyses were utilized to drive recommendations.

This report is structured into three sections; executive summary, presentation slide deck, and a data and geospatial report. The data and geospatial report provides greater depth and breadth of the information analyzed. The presentation slide deck reproduces pertinent data aligned with the observation or recommendation for greater clarity.

Finally, the presentation provides independent analyses of EMS and Fire Services, as applicable, and also provides alternatives with greater coordination between these services. Recommendations are provided with a brief explanation and are sorted by the relative priority of the recommendations to assist the County in prioritizing chosen alternatives.

General Observations - EMS

The Highlands County EMS Department is providing quality services to the community and is operating efficiently and effectively within the unique community profile that exists within Highlands County. The EMS department is funded through transport revenues and the County's general fund. The EMS Department's leadership has a deep understanding of providing EMS services and has the structures and systems in place to appropriately support the field operations.

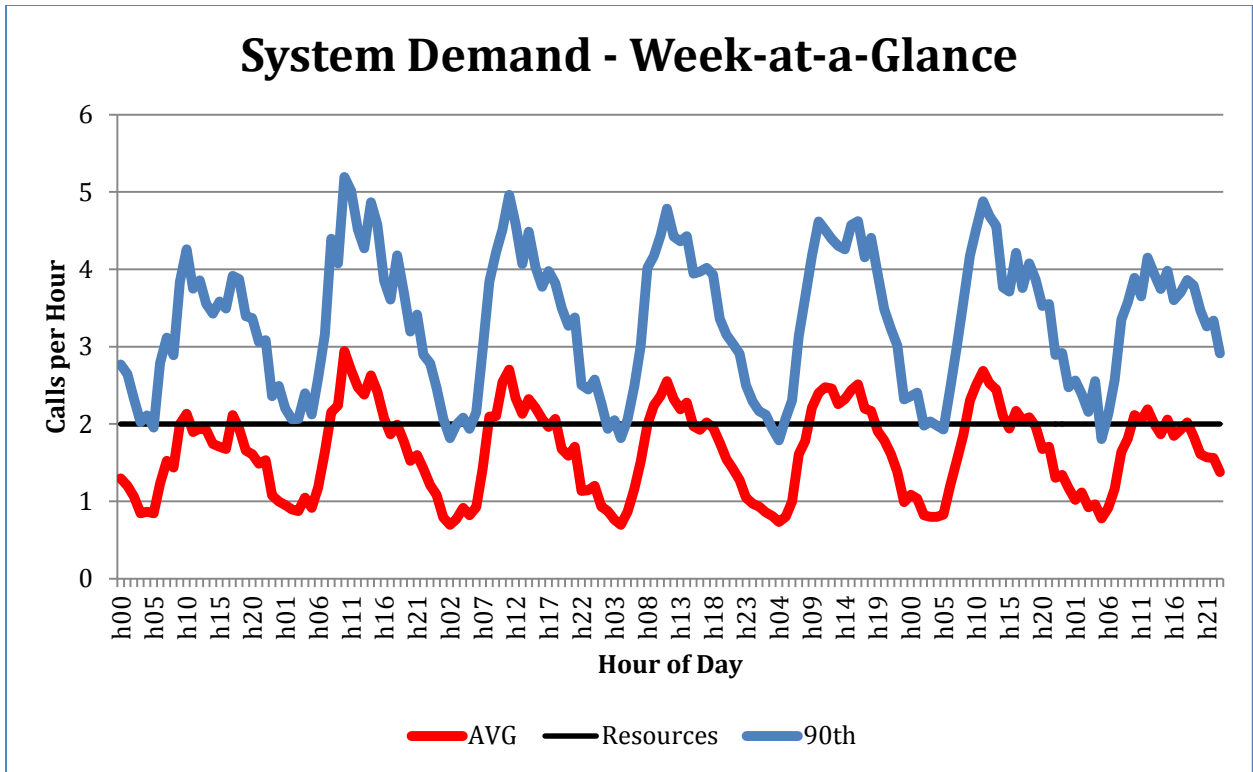
Currently, the EMS department operates eight (8) ambulances 24 hours a day 7 days a week out of seven (7) fixed facilities. In 2014, the EMS department was dispatched to over 14,000 requests for service and had nearly 17,000 unit responses with a total response time of 12.5 minutes or less 90 percent of the time.

EMS Priority 1 Recommendations

Considering the current system design with the designated EMS zones, service delivery is stressed to continue to have units available to cover both the geographic responsibilities of the county and the demand for services. For example, GIS analyses indicates that the current travel time performance, the time from when the units are enroute to an incident until they arrive on scene, is 10 minutes or less 90% of the time and can be maintained with six (6) fixed facilities. However, in order to maintain reasonable availability to cover the geographic areas, three additional units are needed to cover the demand for services. This would indicate that a total of nine (9) ambulances are necessary to maintain a 10-minute travel time and cover the demand for services.

The figure below illustrates that the system is unable to meet both the geographic requirements and the demand for services for the peak period of the day from 8 am until approximately 8 pm for five of the seven days per week. The solid black line indicates the number of units currently deployed for system demand at two (2), the 7th and 8th units in the system. Each time the “red” line is above the solid “black” line the average system demand is exceeding existing resources.

Placing a 12-hour ambulance in service rather than a full 24-hour truck is an efficient solution.



In addition, national best practice for EMS incidents is to perform at 60 seconds (1 minute) or less 90% of the time for turnout time. Turnout time is measured from the time the crews are notified of a call until they are enroute to the call. Currently, the overall performance of the EMS Department is 2.1 minutes at the 90th percentile.

Therefore, through specific performance management, the turnout time could be reasonably reduced by 1 minute translating to a correlated improvement in total response time with no associated system costs for the improvement.

Recommendation #1:

Place an additional ambulance in-service to optimally cover the demand for services. This 9th unit could be operated as a 12-hour peak-load unit, if desired.

Recommendation #2:

Improve turnout time to reflect best practice and national recommendations from the National Fire Protection Association and the Commission on Fire Accreditation International.

The dispatch (emergency communication center) center is a vital resource for the efficient and effective deployment of field resources. The dispatch center identifies the nature of the problem, captures the incident addresses, and dispatches the appropriate field units. The dispatch center's Computer Aided Dispatch (CAD) program and the processes and procedures utilized within the dispatch center are essential to the user group's capability to manage a highly efficient and performance based service. Data analyses found several key data points that were not currently being utilized within the system that would be highly beneficial to the County and EMS Department.

First, the dispatch center does not capture the individual unit responses past the first arriving unit. For example, when multiple units are sent to an incident, only the first arriving unit has the elements of time associated with the record in the CAD system. This limitation does not allow the system to evaluate the individual performance for the 2nd unit and beyond such as response time and time on task.

Second, the dispatch center places the ambulances "available" upon arrival at the hospital. System inefficiencies may be present as the units are potentially subject to another call where they may be delayed responding and the EMS management has no manner to monitor the impact of emergency receiving facility delays on the EMS system. Hospital delays can inadvertently cause the County to fund additional units to overcome the inefficiencies introduced into the system but the current system does not afford EMS management the capability of evaluating the impact through the CAD records. Similarly, the individual unit performance cannot be monitored, potentially introducing inefficiencies into the system.

Third, the dispatch center does not create a call disposition data element in the CAD for EMS calls that would indicate whether the call resulted in a patient transportation to the hospital. In other words, the CAD system does not identify if the EMS call resulted in a patient transport, accepted a refusal on scene, or was cancelled. The combined effect of placing the unit available upon arrival at the hospital and lack of identification of patient transport limits the capability to fully understand the time on task and workload of the system.

While the limitations of the current CAD system have been identified, it is important to clarify that the dispatch center is capturing these call elements at the individual incident level as the dispatcher types them into a text or narrative area for call note taking. Therefore, the information is available if there is an inquiry into a specific

incident such as a fatality or customer complaint, but it is not readily available for aggregate data analyses. For example, to complete this report, a manual report would have to be generated by searching thousands of calls incident-by-incident. While the current process has served the system well over the years, an opportunity exists to have the requisite data and processes available to support the fire and EMS services as they continue to improve.

Finally, it would be beneficial to the system to fully implement Automatic Vehicle Locator (AVL) technologies in the EMS system to better ensure that the closest and most appropriate apparatus is assigned to each request for service.

Recommendation #3:

Update the dispatch process to allow for the tracking of individual unit responses in a similar manner as the first due units.

Recommendation #4:

Update the dispatch process to capture the “at-hospital” time and the “available” time as unique data elements to allow the EMS agency to monitor delays at the emergency receiving facility as well as manage a highly efficient field operation.

Recommendation #5:

Update the dispatch process to create a CAD data element indicating if the EMS call resulted in a patient transportation.

Recommendation #6:

Update the dispatch process to create a CAD data element indicating if the EMS call was cancelled enroute.

Recommendation #7:

Fully operationalize the utilization of the Automatic Vehicle Locator (AVL) system to allow the EMS department to ensure closest unit dispatching for optimal system performance.

The *FITCH* team directly observed and inspected each of the fixed facility EMS stations currently in operation. Overall, the condition and design of the facilities were not commensurate with the national experience. While the general cleanliness

maintained by the individual crews was commendable, the conditions of the facilities were not desirable or at a level that mirrored the professionalism of the Department.

The County indicated that newer facilities would include a larger footprint that may accommodate multiple apparatus and personnel. It is highly recommended that this practice be continued as it is anticipated that future demands for service will increase over the useful life of the facilities.

Recommendation #8:

Prioritize capital improvement planning for maintaining, refurbishing, and replacing fixed facilities.

Recommendation #9:

As facilities are replaced or refurbished, larger facilities should be considered that could accommodate multiple units and personnel, and provide protection and security of apparatus.

Recommendation #10:

The County is encouraged to expand the practice of collocating facilities with the fire service operations where applicable.

Revenues from EMS patient transportation services account for the majority (54%) of the revenues that fund the EMS Department. The billing operations are outsourced with satisfactory results. However, comparisons with the Medicare/Medicaid allowable costs for services indicates that the County rate structure is lower than allowable costs for emergency ALS and BLS transportation services as well as the mileage. Typically, agencies follow a rule of thumb of charging 150% of the Medicare allowable costs.

In addition, the County is encouraged to evaluate the rate structure for interfacility transports. The rates are lower than the allowable costs and may introduce compliance inquiries.

Recommendation #11:

Update patient transportation and mileage rates to reflect, at a minimum, the allowable costs for Medicare.

Recommendation #12:

Evaluate the interfacility rates established to ensure compliance with Medicare.

EMS Priority 2 Recommendations

The future of emergency medical services may very well include a robust non-emergency capability to treat chronically ill patients at home, treat and release lower acuity medical and trauma related calls at the home or onscene without transport, and patient destination alternatives other than emergency receiving facilities.

Highlands County's socioeconomic profile may benefit from increased access to care and other alternative programs such as mobile integrated health care or community paramedicine. It is recommended that the County EMS Department begin to evaluate the efficacy of beginning such programs within the County by reaching out to external stakeholders of the Department such as the hospitals, accountable care organizations (ACO), and health services.

The traditional revenue models that have historically supported EMS are changing and moving from a fee-for-service model to reimbursement based on quality of services that includes differentiated care. One essential element is the ability to differentiate or triage patients at the dispatch center so that care can be directed to the appropriate resource. The appropriate resource may not be the EMS department as it could be a nurse hotline or mental health services.

Alternatives notwithstanding, implementing a priority dispatch system will allow the EMS department to function more efficiently within its current operations. Examples may include the ability to respond non-emergency to minor incidents reducing risk to both the citizenry and the EMS personnel.

Recommendation #13:

Consider adopting and implementing a call triage or priority dispatch process for the dispatch center to align resource allocation to call severity.

Recommendation #14:

Consider exploring opportunities to provide alternative care models such as mobile integrated healthcare or community paramedicine.

The Department is encouraged to expand the parameters for determining the need for apparatus replacement schedules. A combination of years of service, mileage, and repair history may provide a more robust method of determining replacement schedules.

Recommendation #15:

Consider utilizing a combination of years of service, mileage, and repair costs to determine replacement schedules.

Finally, the EMS Department may have some opportunity to realign the organizational structure. Some redundancy in supervisory capacity may exist within the current structure. A new organizational design is offered for the County and Department's consideration that would upgrade one of the shift supervisors to the rank of Battalion Chief that would be commensurate with other emergency service agencies. The recommended organizational structure would eliminate the other shift supervisory position and create a 40-hour Medical Quality Supervisor. The net effect may serve to streamline organizational structure and communication, provide additional emphasis on quality assurance and quality improvement, and have the opportunity to reallocate FTEs towards the implementation of the additional ambulance.

Recommendation #16:

Consider limited reorganization of the EMS Department to reflect an upgrade of three supervisors to Battalion Chiefs, establishing one 40 hour Medical Quality Supervisor, and the elimination of three shift Medical Supervisor positions. Positions and personnel could be utilized to offset costs of implementing an additional unit and attrition over time.

General Observations – Fire Services

Fire services are provided through 10 fire special benefit districts for the unincorporated areas of Highlands County serving nearly 80% of the county's population. The cities of Sebring and Avon Park provide their own municipal services

independent of the County. The 10 fire districts are funded through non-ad valorem parcel assessments, collecting approximately \$1.6 million in revenue, and are overseen by the Board of County Commissioners and supported by the Highlands County Fire Services' office. The Fire Services Director and staff provide direction, budgeting, finance, training, fire prevention, and other support services for the Districts.

The 10 fire departments currently operate out of 17 fixed facility fire stations distributed throughout the county. In 2015, there were reported to be 186 active volunteers with 153 qualified to operate in "exclusionary or hot zones". In total, the 10 fire departments responded to 1,725 requests for service where 880 of the incidents were responded to with the EMS department and 845 were handled by the fire department. The 10 fire departments combined responded to 90% of the incidents in 18.8 minutes or less. Individual department performance ranged from 16.7 minutes to 31.8 minutes at the 90th percentiles.

Overall, the volunteer firefighting forces are community members dedicated to providing emergency services to the communities they serve and are providing quality services while facing many of the challenges inherent in providing volunteer services today.

However, onsite observations and structured interviews provided a general overtone of a lack of trust, communication, and coordination between all aspects of the emergency response system. In part, this is likely the long-term result of a fragmented delivery system that includes variability and disparity in funding strategies, resource allocation, and capacity.

In addition, the Fire Service Director's office is challenged to achieve the requisite accountability and support for 17 fire stations, 10 fire departments, and 185 firefighters, apparatus and equipment. Contributing to the challenge of the general effectiveness in oversight is the "blurring" of the lines of authority between the County and Fire Districts.

An obvious example is the plan to build an EMS station across the street or adjacent to an existing fire station that the County maintains as an asset and insures. The parties could not agree to allow the EMS department to occupy during the demolition and construction of the new facility let alone collocate. Currently, county

“fire” employees work at the facility 40-hours per week, however, the decision model concerning county “EMS” employees was not viewed through the same lens.

The majority of the recommendations offered are associated with realigning the County’s capability to provide quality, reliable, accountable, and sustainable services.

Fire Services Priority 1 Recommendations

The Board of County Commission (BOCC) is the ultimate authority for the provision of fire services in the unincorporated areas of the county where nearly 80% of the population resides. As designed, the fire districts may have advisory boards to advise the BOCC, but the County approves assessments, approves budget expenditures, maintains capital items as assets, and insures human and fiscal resources. In addition, the County pays for employee physicals, background checks, drug testing, motor vehicle checks, blood borne pathogen disposal, and some training materials and instructor certifications.

The County also funds up to eight (8) firefighters that are designed to work at four (4) of the fire districts, however, only two of the departments have hired and expended the funds. While these personnel are county employees, there is some ambiguity as to whom they report: to the Fire Services Director or the local Fire Chief.

Similarly, the County funds and approves expenditures for capital items such as the fire stations, fire apparatus, and equipment in addition to maintaining ownership and insuring these assets. However, differing views exist between the Fire Districts and the County on this issue. The net result of the system ambiguity is that many of the fire stations were in ill repair and routine care and cleanliness has been grossly neglected.

Therefore, it is recommended that a collaborative and systematic process is undertaken to establish clear lines of authority on all aspects of the fire service delivery model and have the results codified in some manner for sustainability and succession planning.

Finally, it is highly recommended that a Volunteer Battalion Chief position is created that reports directly to the Operations Chief and serves as a representative from the Volunteer Chiefs Association to participate in staff and management decisions adding credibility and improving both communications and trust in system decisions.

Recommendation #17:

Systematically evaluate the fire services system to define lines of authority, accountability, and responsibility for management, training and certification, facilities, apparatus, and equipment between the County and the Fire Districts.

Recommendation #18:

Identify management processes for and prioritize capital improvement planning for maintaining, refurbishing, and replacing fixed facilities.

Recommendation #19:

When rebuilding or replacing fire stations, the County is encouraged to consider designing fire stations with capabilities to house multiple personnel for 24-hours at a time. This will provide all options for future changes in service demands as well as accommodate personnel for longer duration events such as hurricanes.

Recommendation #20:

Create a Volunteer Battalion Chief position that reports directly to the Operations Chief to ensure that the Volunteer Chiefs have appropriate representation and participation in the staff and management decisions related to fire services.

Due to the challenges of a somewhat fragmented fire service delivery model, the County is challenged to maintain accountability of services and cost controls from a system perspective. For example, the collective system has accumulated excess capital for the demands of the system. In total, there are 16 fire engines, 12 tankers, 26 brush trucks, and 2 aerial trucks. The individualized approach to purchasing and budgeting by each fire district has reproduced the excess capital in other equipment as well, such as SCBAs.

The incremental approach to purchasing that is primarily driven by the individual fire districts has created a variable and disparate approach to resource allocation as well. For example, one fire district may be replacing a 10-year-old piece of apparatus while another fire district is still using apparatus that is 20 or more years old. Following this example, the long-term effects have resulted in 46% of the fleet of apparatus in the County being out of compliance for front line service according to National Fire Protection Associations (NFPA) recommendations and 14% should be taken out of service immediately. This process outcome is replicated with SCBAs as 3% should be

taken out of service immediately and nearly 42% of the SCBA are 14 years old or older approaching their useful life. Best practice is to replace SCBA every 10 years.

In conjunction with other initiatives, it is imperative that a comprehensive management system is designed and implemented to capture the requisite elements to ensure compliance of apparatus and personal protective equipment.

Recommendation #21:

Improve the internal processes and oversight to provide the Board of County Commissioners greater capacity to control system costs and resource allocation.

Recommendation #22:

Ensure that firefighter apparatus such as fire engines and ladder trucks are compliant with national recommendations and best practices for safety.

Recommendation #23:

Ensure that personal safety equipment such as SCBA and PPE is compliant with national recommendations and best practices for safety.

Recommendation #24:

Implement a standardized procurement process to ensure standardization of apparatus, SCBA, and PPE utilized.

Recommendation #25:

Develop and implement a management system to ensure compliance of apparatus, SCBAs, and PPE assets held by the County.

The current fire services delivery system provides variable performance. While some variability in performance is driven by the geographic coverage areas within each district and the reasonableness to provide urban services in low-density rural areas, the response time varies from 16.7 minutes to 31.8 minutes across the districts.

One of the primary drivers to the variability of response time is the variability in individual district performance in assembling crews to respond. The turnout time, the time from when the station is alerted to a call until the time they are responding, varies from 7.1 minutes to 17.4 minutes at the 90th percentile.

It is recommended that reasonable performance measures such as the expected turnout time, total response time, number of personnel responding, and the percentage of no-response incidents is established. The process should include agreed upon methods for measuring and ensuring accountability and the process for corrective support.

Recommendation #26:

Implement reasonable performance measures across the fire districts in an effort to limit service variability across the districts.

Fire service training is primarily delivered from the Fire Service Director's Supervisor of Training. The County staff is the primary provider of minimum standards (Firefighter 1 Level), first responder, and in-service training for the districts for topics such as pump operator, driver training, extrication, and communications. Additional in-service and ISO required training is facilitated by each independent district.

The current training staff is challenged to support the total of system needs, especially with the addition of the Firefighter Credentialing program. The county only tracks minimum training requirements and the training delivered is not uniform across the agencies. For example, some districts may request multiple training opportunities from the County staff and other districts may not request any. The limited training staff has led the training program to become largely user driven rather than curriculum driven or needs based.

It is recommended that the training division receive an additional FTE training officer to support the countywide needs and to develop a cohesive, standardized, accountable, competency-based training program. In addition, a comprehensive management system must be developed to account for all trainings and certifications received regardless of the provider.

Finally, the Florida Bureau of Fire Standards and Training has developed curricula and codified certifications for many of the critical elements in the fire services. Many of these tracts will seamlessly support the Firefighter Credentialing process recently adopted. These certifications require continuing education credits for periodic renewal. In addition, courses delivered internally may serve to channel towards state certifications, but the courses must be pre-approved and registered with the state prior to delivery. This would provide a quality benefit to the volunteer membership so

that they do not have to have redundant educational and training efforts. Therefore, it is recommended that the County staff apply for approval of all applicable training programs delivered within the County.

Recommendation #27:

Develop and implement a management system to account for all training provided throughout the county, including certification, credentialing, curriculum, personnel in attendance, and internal ISO training hours.

Recommendation #28:

Develop and implement a cohesive and standardized competency-based training program throughout the county ensuring that all firefighters have commensurate training and service capabilities.

Recommendation #29:

Consider the addition of one Training Officer assigned to the Fire Service Director's office to assist in countywide competency-based training program management.

Recommendation #30:

Consider registering all available training provided with the Florida Bureau of Standards and Training.

Fire Services Priority 2 Recommendations

The fire prevention office is well performing and efficient. The Fire Prevention Supervisor is tasked with completing plans review, public education, and fire inspections. The program is currently staffed with one supervisor and one fire inspector.

In 2014, the prevention staff reviewed 94 plans within 10 days 90% of the time or less and reach greater than 90% of school aged children between ages 4 and 12. Additionally, the staff delivered 35 programs reaching 3,800 residents with the assistance and cooperation of volunteers and EOC staff.

While the public education program is performing well, the staff may benefit from developing a process for identifying at risk or target populations in order to prioritize efforts. Efforts to evaluate call frequency, occupancy type, fire losses, and fire-

related injuries against target populations and current prevention efforts may serve the community well.

Currently, there is no specifically established target or performance objective for cyclical fire code inspections. The County reported 2,314 inspectable properties with 354 inspections performed in 2014 approximating a 6.5 year cycle, or greater for inspections for properties that do not require annual inspections.

The County may be served well to establish a specific desired cycle for fire code inspections. With the current workload in public education, plans review, and annual inspections, it may be reasonable to add one fire inspector position to assist in meeting a more timely inspection cycle.

Recommendation #31:

Consider the adoption by either policy or ordinance defining the required inspection cycles for inspectable properties.

Recommendation #32:

Develop and implement processes and procedures to improve the capability of the Fire Supervisor's office to evaluate system outcomes such as property fire loss and fire-related injuries in an effort to identify at-risk or target populations as well as measure the effectiveness of current prevention efforts.

Recommendation #33:

Consider the addition of one Fire Inspector assigned to the Fire Service Director's fire prevention office to assist in accomplishing a more timely inspection cycle for inspectable properties.

Alternatives for Future Consideration

Understanding some of the challenges of the current system design for fire services three alternatives were developed for future consideration that may serve the BOCC well. The first is to create a consolidated countywide volunteer fire service; the second is to create a partially consolidated fire and EMS service; and the third is to create a fully consolidated fire and EMS service.

Alternative 1: Creation Of A Countywide Consolidated Volunteer Fire Service

One effective method to mitigate many of the unique challenges inherent in the current system design for volunteer fire services is to formalize the organization into the Highlands County Fire Service while preserving the volunteer status of the system.

This system design may provide a more effective method for uniform service delivery, providing more system accountability, and ensuring greater cost containment. Previous recommendations have discussed and offered solutions to improving service delivery, instituting accountability measures, and ensuring some cost controls.

However, one element that was not previously discussed is the surplus of fund balances across the fire districts. The aggregated fund balances are estimated to be \$2.5 million at year end 9/30/2016. Each fire district has its own fund balance. The cumulative effect is that the aggregate fund balances from all of the district's exceed the County's practice of three (3) months, or 25%, of operating costs (\$2.9m)¹ by \$1,775,000. Assuming total system costs would remain the same, and potentially reduce, the required fund balance would be \$725,000.

The fund balances are a widely accepted and a necessary fund for the individual fire districts as they can be relied upon, when available, to purchase large capital items such as fire apparatus and other equipment. As a special benefit district, the district's revenues are generally required to be expended within the district. Therefore, fund balances are instituted by design to place rollover funds when revenues exceeded expenditures. The salient point is that the fragmented approach to individual fund balances may exceed the aggregated necessity from a system perspective.

Finally, since funds are generally required to be expended within the district of origin, the fund balances may be utilized for capital improvements or operating expenses during the transition.

It would be reasonable to set an implementation timeline of 2 to 3 years to afford sufficient time to operationalize changes and allow personnel to prepare for any specific personal impacts.

¹ Includes Fire Districts, Fire Coordinator and Mutual Aid expenditure budgets.

Alternative #1:

Improve accountability, coordination, and system performance for county fire services through the formation of a countywide consolidated volunteer fire service funded through the countywide ordinance that is currently available to the Board of County Commissioners.

Alternative 2: Partial Consolidation Of EMS And Fire Services While Maintaining the Existing Volunteer Fire Service Delivery Model

This alternative would leverage the existing County personnel, both firefighters and EMS personnel, in a partial consolidation of EMS and fire services. In addition to the benefits previously described of greater system oversight and accountability, this system design would significantly improve both fire and EMS services at a marginal cost to the system.

Geospatial, quantitative, and temporal analyses demonstrated that the County could provide EMS and fire services with a 12.5-minutes or less total response time 90% of the time. This maintains EMS's current performance and improves fire service delivery by 6 minutes and nearly 100% reliability that a unit will be staffed and able to immediately respond to requests for service.

This system design will require six (6) fixed facility stations and a total of 10 ambulances; one more than is currently recommended. The EMS personnel would be cross-trained as firefighters (Firefighter II Level) and cross-staff fire apparatus for the lower frequency fire events. In 2014, non-EMS and MVC calls accounted for 877 requests for service and requiring the new system to cover a total of approximately 2,200 hours. The one additional unit, the 10th ambulance, provides sufficient capacity to cover the additional workload and enhances EMS's capacity while providing improvement in overall response time performance and surge capacity.

This system design would provide for 20 full-time firefighters working 24 hours a day and 7 days a week, more than sufficient to handle a typical residential structure fire. The County would maintain the current volunteer services in its current design. The volunteer services could provide essential assistance for longer duration and labor intensive operations so that the ambulance services could maintain their readiness. In

addition, the volunteer services could continue to staff the most remote areas of the county.

The total cost for this alternative is estimated at approximately \$1.1 million in annual personnel costs if the volunteer fire services are not consolidated and remain precisely as they are currently.

It would be reasonable to provide a three (3) year implementation period to provide sufficient time to allow EMS personnel to acquire the necessary training, allow volunteer firefighters to acquire medical and fire training to apply for the necessary additional resources, and make capital adjustments as necessary.

Alternative #2:

Improve accountability, coordination, and system performance for both Fire and EMS services through a partial consolidation of the EMS and Fire services with the option of consolidating the volunteer fire services as well from Alternative 1.

Alternative 3: Full Consolidation Of EMS And Fire Services in Highlands County

This alternative is an incremental option from both Alternatives 1 and 2. In this alternative, the County would create a fully consolidated Highlands County EMS and Fire Service. All elements of Alternative 2 would remain with the exception that the volunteer fire services would be consolidated under the new umbrella as in Alternative 1.

The main differences are that the demand for volunteer services could be appropriately allocated for supplemental support, as the fire services would be correctly identified as a combination department; part paid and part volunteer. The need for volunteers would be significantly less as 90% of all calls for both fire and EMS services would receive service in 12.5 minutes or less. Again volunteers could be used to supplement on-duty crews at any time, but most importantly for long-duration and labor intensive events.

In total, the county operates 22 fixed facilities with the combination of 17 fire stations and 5 independent EMS stations and could reduce the capital footprint to six (6) to 10 facilities; six career and up to four volunteer stations. Similarly the need for apparatus could be reduced to 6 to 10 fire engines, down from 17 in fire engines alone.

Finally, this alternative would allow the BOCC to leverage the countywide district ordinance to partially fund the new system and cover the vast majority of new system costs. For example, the current assessment revenue budgets from all of the dependent fire districts are \$1.6 million. If the BOCC chose to mirror the current revenue generated from the non-ad valorem assessments with the new ordinance, then there would be a surplus of approximately \$500,000 to be utilized to address policy related decisions such as the appropriate number of volunteer positions and new positions recommended to support the larger organization. Overall, it is anticipated that this model will be near cost-neutral in annual operating costs, reduce capital expenditures and future liabilities, improve fiscal responsibility in the utilization of fund balances, and provide significant improvement in both fire and EMS service delivery.

It would be reasonable to provide a three (3) year implementation period to provide sufficient time to allow EMS personnel to acquire the necessary training, allow volunteer firefighters to acquire medical and fire training to apply for the necessary additional resources, and make capital adjustments as necessary.

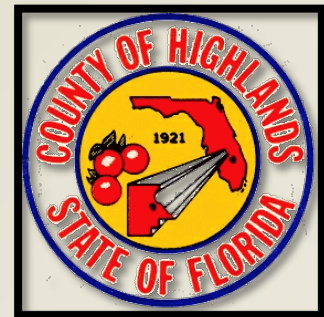
Alternative #3:

Improve accountability, coordination, and system performance for both Fire and EMS services through a full consolidation of the EMS and Fire services.

March 2016

Fire and EMS Needs Assessment

Consultant Final Presentation



Highlands County, Florida

Prepared by:



FITCH & ASSOCIATES, LLC

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CONSULTANT PRESENTATION

Highlands County FL Fire & EMS Needs Assessments

FINAL REPORT PRESENTATION
MARCH 2016

FITCH & ASSOCIATES, LLC



Project Purpose/Scope

- Review operational and financial aspects of countywide EMS Department and Fire Districts
- Identify ways to —
 - Maintain service levels at current costs
 - Maintain service levels and reduce costs
 - Enhance service levels at current costs
- Provide options for long term sustainability

Methodology

- Quantitative analyses of operations utilized County CAD information
- Temporal and geospatial analyses utilizing existing station locations and optimized station locations
- Qualitative analyses utilizing direct observations, structured interviews, and documentation
- Financial analysis utilized –
 - County 15/16 Adopted Budget Binder
 - County Capital Financial Strategy FY15/16 to FY24/25
 - County Comprehensive Annual Financial Reports
 - Detailed revenue and expenditure information

Stakeholder Issues

- The current model is fragmented and limits the County's ability to control costs
- The current fire management structure is challenged to achieve the requisite accountability for 17 fire stations, 10 fire departments, and 185 firefighters, apparatus and equipment
- Variability and disparity in funding strategies across the 10 special benefit districts

Stakeholder Issues

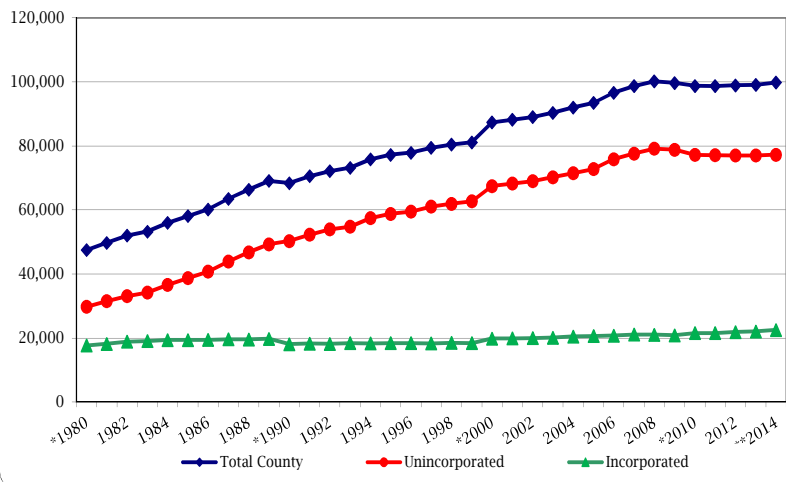
- Effective communications, trust, and cooperation is limited between all aspects of the emergency response system
- County is not absolved of liability for firefighting operations, safety, and training
 - Considerable variability across departments
- Variability in fire response performance
- Majority of fire and EMS stations are in need of significant capital investment

Overview

Highlands County Area Description

- 1016 sq. miles land area and 2014 resident population of 98,236; density of 96 persons/square mile
- Three incorporated cities: Sebring, Avon Park and Lake Placid
- Majority (78%) of population lives in unincorporated areas
- Top private sector employers are healthcare, a call center and a major retailer
- Citrus, cattle & dairy operations are primary economic activity
- Sebring endurance auto race is a significant national event
- 13% Population growth 2000 to 2010; flat growth between 2010 and 2014 census estimates

HIGHLANDS COUNTY POPULATION GROWTH



Source: Highlands County 2015-2016 Adopted Budget Book

EMS & Fire Services Overview

- **Countywide EMS Department**
 - ALS/paramedic service level handling patient transports
 - Funded through general fund and ambulance transport fees
- **10 Fire Special Benefits Districts & 2 City Departments**
 - First responders: some part-time paid, mostly volunteers
 - Funded through non-ad valorem parcel assessments
 - Approximately 80% of county population served by Fire Districts
 - Avon Park and Sebring fund Fire Departments separately
 - Fire Coordinator provides oversight and support
- **Common Governance**
 - Board of County Commissioners oversees EMS and Districts
 - Budgeting, finance and primary administrative functions handled by County on behalf of Fire Districts

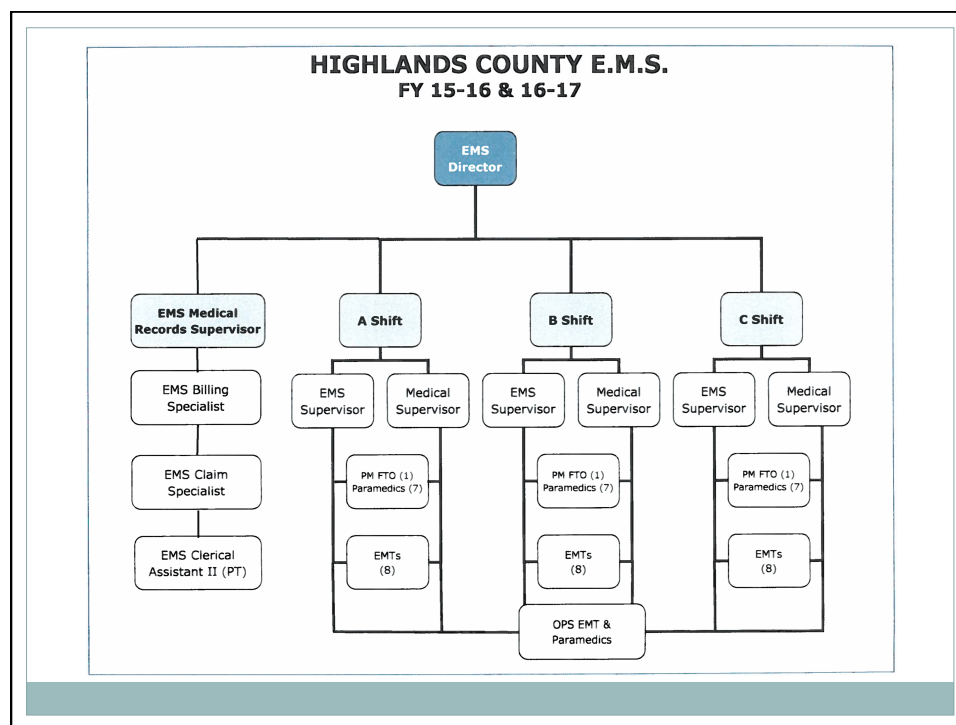
EMS & Fire Budgeted FTE's for 15/16

Agency	FY14/15 Adopted	FY15/16 Adopted
Emergency Medical Services	59.0	62.0
County Fire Coordinator	6.0	6.0
Desoto City Fire District	2.0	2.0
Highlands Lakes Fire District	2.0	2.0
Lake Placid Special Benefit District	2.0	2.0
West Sebring Special Benefit Fire District	2.0	2.0

Of the 10 Fire Districts, only the four listed above are authorized full-time equivalent positions. Of the four, only Desoto City and Highlands Lakes show actual salary expenditures for the past several years.

EMS Overview

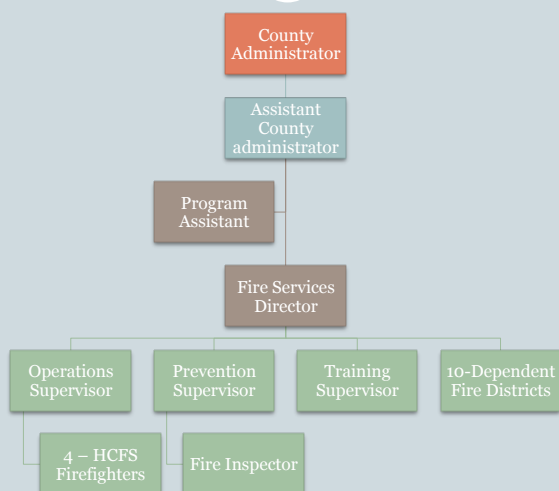
- Unified, countywide emergency response system
- 24/7 coverage using paid personnel
- Single point for medical direction and planning
- ALS/paramedic service level and transport
- Some fire districts respond on limited EMS calls
- Funding, governance and policy decisions through Board of County Commissioners



Fire Services Overview

- **BOCC is governing body for all non-municipal fire services**
 - Highlands County Fire Services (HCFS)
 - 10 Special Benefit Fire Districts
- **Highlands County Fire Services**
 - Overseen by Fire Services Director
 - Funded through general fund
 - Budgeting, finance, and primary administrative functions for special districts
 - 10 FTEs provide the following:
 - ✦ Fire Services Direction
 - ✦ Operations
 - ✦ Prevention
 - ✦ Training

Fire Services Overview



Fire Services Overview

- **10 Special Benefit Fire Districts**
 - Funded through non-ad valorem parcel assessments
 - Operate out of 17 individual stations
 - Fire response services are primarily volunteer
 - ✦ Highlands Lakes and Desoto City each staff 2 firefighters M-F, 8-4
 - Firefighters are directly employed by County through HCFS
 - 186 active volunteers as of November 2015
 - ✦ 153 firefighters qualified to operate in “exclusionary or hot zone”
 - Responded to 1,725 calls for service in 2014.

Operations Data Analyses

EMS AND FIRE SERVICES

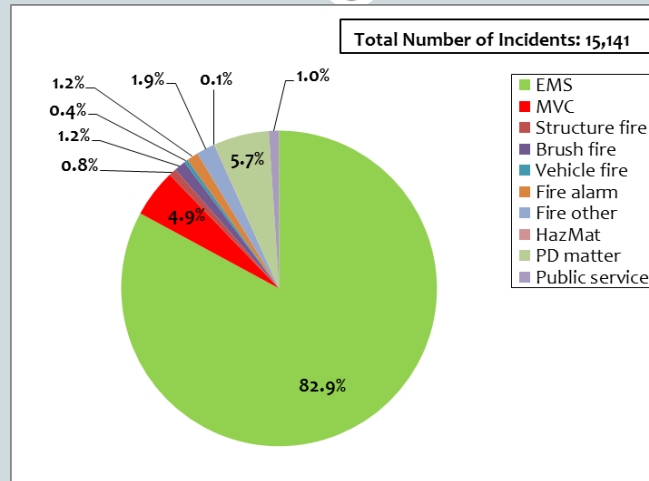
Community Response History

EMS AND FIRE SERVICES

Total Incidents by Dispatched Category-2014

Call Category	Number of Calls	Calls per Day	Call Percentage
EMS	12,551	34.4	82.9
MVC	743	2.0	4.9
Structure fire	119	0.3	0.8
Brush fire	178	0.5	1.2
Vehicle fire	59	0.2	0.4
Fire alarm	178	0.5	1.2
Fire other	288	0.8	1.9
HazMat	9	0.0	0.1
PD matter	859	2.4	5.7
Public service	157	0.4	1.0
Total	15,141	41.5	100.0

Percentage of Total Incidents by Call Type



Number of Incidents Dispatched by Agency Type

Call Category	EMS and Volunteer Fire Dept.		Volunteer Fire Department		Total
	EMS	Volunteer Fire Dept.	EMS	Volunteer Fire Dept.	
EMS	472	12,011	68		12,551
MVC	277	435	31		743
Structure fire	63	38	18		119
Brush fire	0	3	175		178
Vehicle fire	4	4	51		59
Fire alarm	2	15	161		178
Fire other	27	28	233		288
HazMat	1	1	7		9
PD matter	26	793	40		859
Public service	8	88	61		157
Total	880	13,416	845		15,141

Dispatched Incidents by Agency

Staffing	Agency Name	Dispatched
Full Time	Highlands County EMS	14,845
Volunteer Fire Departments	Desoto City Fire Department	447
	Highlands Lakes Fire Department	398
	Highlands Park Fire Department	102
	Leisure Lakes Fire Department	161
	Lorida Fire Department	227
	Lake Placid Fire Department	337
	Placid Lakes Fire Department	132
	Sun N Lakes Fire Department	153
	Venus Fire Department	33
	West Sebring Fire Department	910

Total Busy Time by Call Category

Program	Number of Calls	Number of Responses	Average Responses per Call	Total Busy Hours	Average Busy Minutes per Response
EMS	12,551	14,205	1.1	6,664	28.1
MVC	743	2,296	3.1	1,143	29.9
Structure fire	119	471	4.0	689	87.8
Brush fire	178	468	2.6	527	67.5
Vehicle fire	59	117	2.0	153	78.3
Fire alarm	178	456	2.6	189	24.8
Fire other	288	604	2.1	507	50.4
HazMat	9	17	1.9	17	60.1
PD matter	859	1,023	1.2	455	26.7
Public service	157	211	1.3	208	59.2
Total	15,141	19,868	1.3	10,551	31.9

Total Busy Time by Agency

Call Category	County EMS			10 Volunteer Fire Departments		
	Number of Calls	Number of Responses	Total Busy Hours	Number of Calls	Number of Responses	Total Busy Hours
EMS	12,483	13,597	6,438	540	608	226
MVC	712	1,796	740	308	500	402
Structure fire	101	110	81	81	361	608
Brush fire	3	5	4	175	463	523
Vehicle fire	8	11	7	55	106	145
Fire alarm	17	18	8	163	438	181
Fire other	55	63	41	260	541	466
HazMat	2	3	4	8	14	13
PD matter	819	933	397	66	90	58
Public service	96	112	56	69	99	152
Total	14,296	16,648	7,777	1,725	3,220	2,774

Note: A total of 880 incidents have both EMS and volunteer units responding.

System Performance

EMS AND FIRE SERVICES

Response Time Continuum – 90th

Program	Dispatch Time	Turnout Time	Travel Time	Response Time	Sample Size
EMS	1.9	2.1	9.9	12.4	12,538
MVC	1.8	2.0	8.2	11.0	738
Structure fire	1.8	4.5	8.7	13.0	116
Brush fire	2.1	9.6	15.7	23.9	178
Vehicle fire	2.0	9.6	12.1	20.0	59
Fire alarm	2.5	8.3	11.1	16.7	177
Fire other	2.4	9.1	11.7	19.4	285
HazMat	8.0	7.7	9.5	22.3	9
PD matter	1.8	2.3	11.5	14.3	856
Public service	2.1	6.8	12.8	19.3	154
Total	1.9	2.3	10.0	13.1	15,110

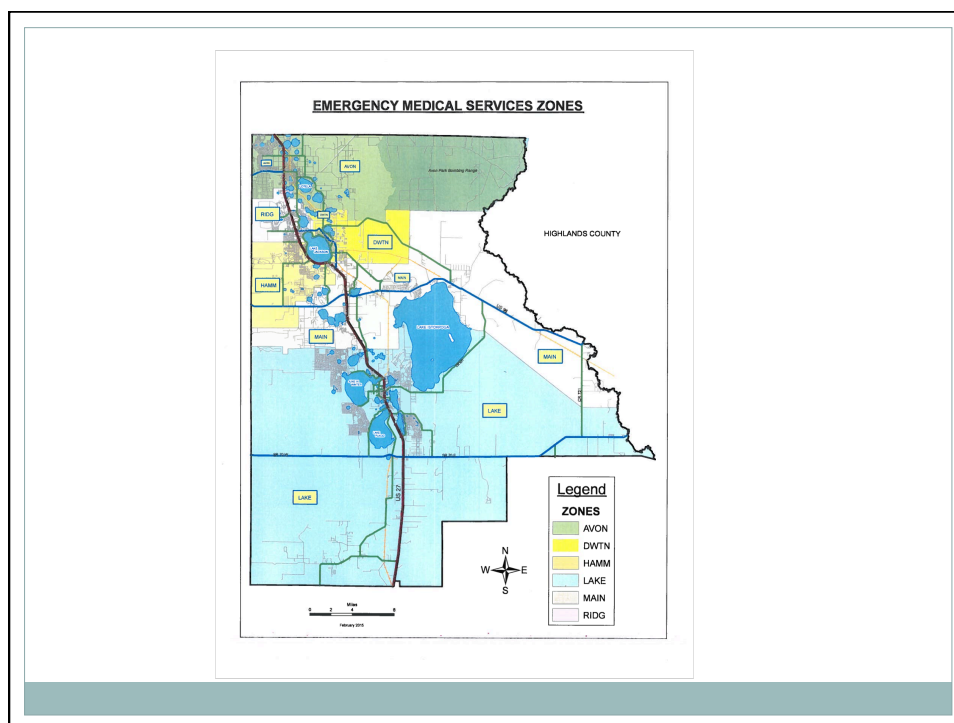
Response Time Continuum by Agency – 90th

Agency	Dispatch Time	Turnout Time	Travel Time	Response Time	Sample Size
Highlands County EMS	1.9	2.1	10.0	12.5	14,086
10 Volunteer FDs Combined	2.2	8.8	11.4	18.8	1,024
Desoto City Fire Department	2.3	7.9	11.6	17.5	135
Highlands Lakes Fire Department	2.0	7.4	10.5	17.1	164
Highlands Park Fire Department	2.2	17.4	20.9	23.0	16
Leisure Lakes Fire Department	2.1	8.8	10.0	16.8	64
Lorida Fire Department	1.7	12.0	25.2	31.8	98
Lake Placid Fire Department	2.4	10.0	9.6	17.6	100
Placid Lakes Fire Department	2.1	10.4	10.2	17.4	49
Sun N Lakes Fire Department	2.3	7.1	9.9	16.7	83
Venus Fire Department	2.6	13.2	15.3	28.7	8
West Sebring Fire Department	2.4	7.6	10.7	18.8	307

EMS

Total Busy Time by EMS Zone

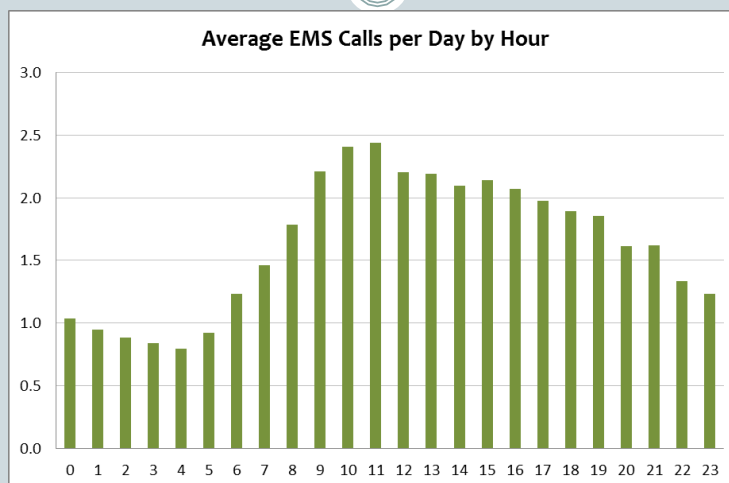
EMS Zone	Number of Calls	Calls per Day	Number of Responses	Average Responses per Call	Total Busy Hours	Average Busy Minutes per Response
Avon Park	2,659	7.3	3,103	1.2	1,430	27.6
Hammock	1,672	4.6	1,982	1.2	927	28.0
Lake Placid	3,014	8.3	3,482	1.2	1,725	29.7
Main	1,988	5.4	2,393	1.2	1,175	29.5
Ridge	2,251	6.2	2,626	1.2	1,195	27.3
Sebring	2,622	7.2	2,958	1.1	1,272	25.8
Other	90	0.2	104	1.2	53	30.7
Total	14,296	39.2	16,648	1.2	7,777	28.0



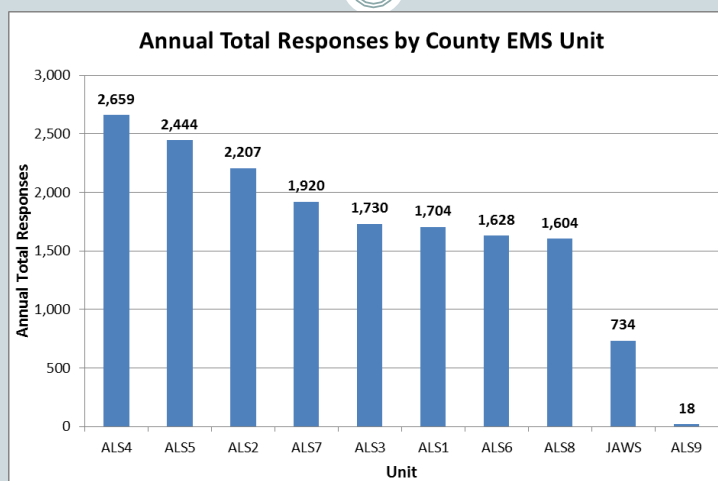
EMS Calls by EMS Zone and Call Type

Call Category	Avon Park	Hammock	Lake Placid	Main	Ridge	Sebring	Other	Total
EMS	2,277	1,457	2,669	1,712	1,992	2,309	67	12,483
MVC	159	109	141	102	116	77	8	712
Structure fire	21	11	19	19	12	16	3	101
Brush fire	0	0	0	2	1	0	0	3
Vehicle fire	0	0	4	2	2	0	0	8
Fire alarm	2	5	3	3	2	2	0	17
Fire other	14	7	5	7	12	10	0	55
HazMat	0	0	1	1	0	0	0	2
PD matter	170	69	158	118	104	190	10	819
Public service	16	14	14	22	10	18	2	96
Total	2,659	1,672	3,014	1,988	2,251	2,622	90	14,296
Calls per Day	7.3	4.6	8.3	5.4	6.2	7.2	0.2	39.2
Total	18.6%	11.7%	21.1%	13.9%	15.7%	18.3%	0.6%	100.0%

Average Demand by Hour of Day



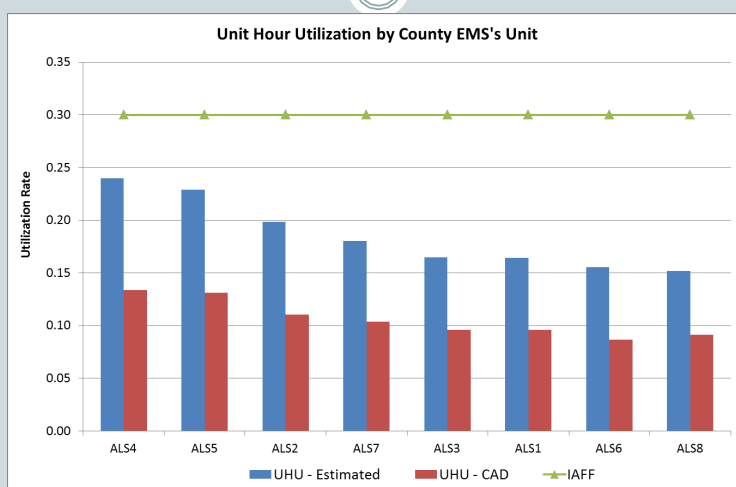
Annual Responses by Unit



EMS Workload by Unit

Agency	Station	Unit	Avg. Busy Minutes per Response	Annual Busy Hours	Annual Total Responses	Responses per day	Estimated Busy Hours
County EMS	HCEMS 1	ALS3	29.1	840	1,730	4.7	1,446
		ALS6	28.0	759	1,628	4.5	1,329
	HCEMS 2	ALS2	26.3	967	2,207	6.0	1,739
	HCEMS 3	ALS4	26.4	1,171	2,659	7.3	2,102
	HCEMS 4	ALS7	28.4	907	1,920	5.3	1,579
	HCEMS 5	ALS5	28.2	1,149	2,444	6.7	2,004
	HCEMS 6	ALS8	29.9	799	1,604	4.4	1,360
	HCEMS 7	ALS1	29.7	843	1,704	4.7	1,439
	JAWS	ALS9	19.7	6	18	NA	12
		JAWS	27.4	335	734	2.0	592
Total			28.0	7,777	16,648	45.6	13,604

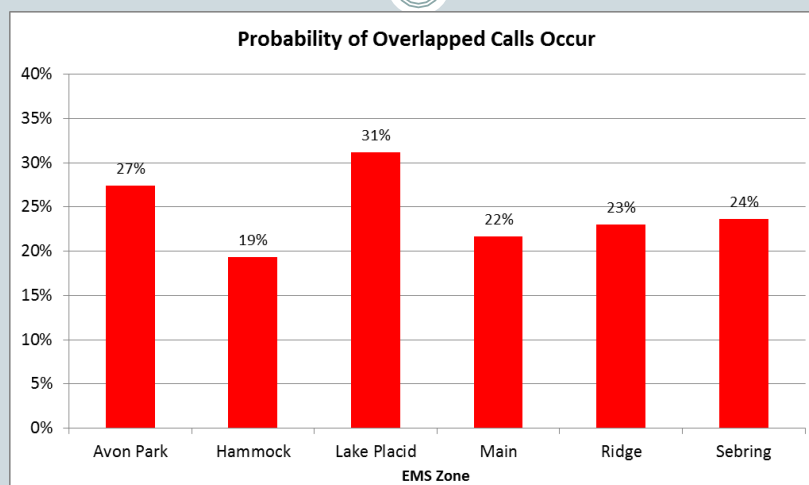
Unit Hour Utilization



EMS Performance by EMS Zone – 90th

EMS Zone	Dispatch Time	Turnout Time	Travel Time	Turnout and Travel Time	Response Time	Sample Size
Avon Park	1.9	1.9	8.9	10.2	11.4	2,609
Hammock	1.8	2.2	8.7	10.3	11.4	1,645
Lake Placid	1.7	2.1	12.2	13.5	14.6	2,972
Main	1.9	2.2	12.8	14.3	15.5	1,932
Ridge	1.9	2.1	7.8	9.4	10.7	2,220
Sebring	2.0	2.0	8.2	9.5	10.8	2,618
Total	1.9	2.1	9.9	11.3	12.5	13,996

Probability of Overlapping Calls

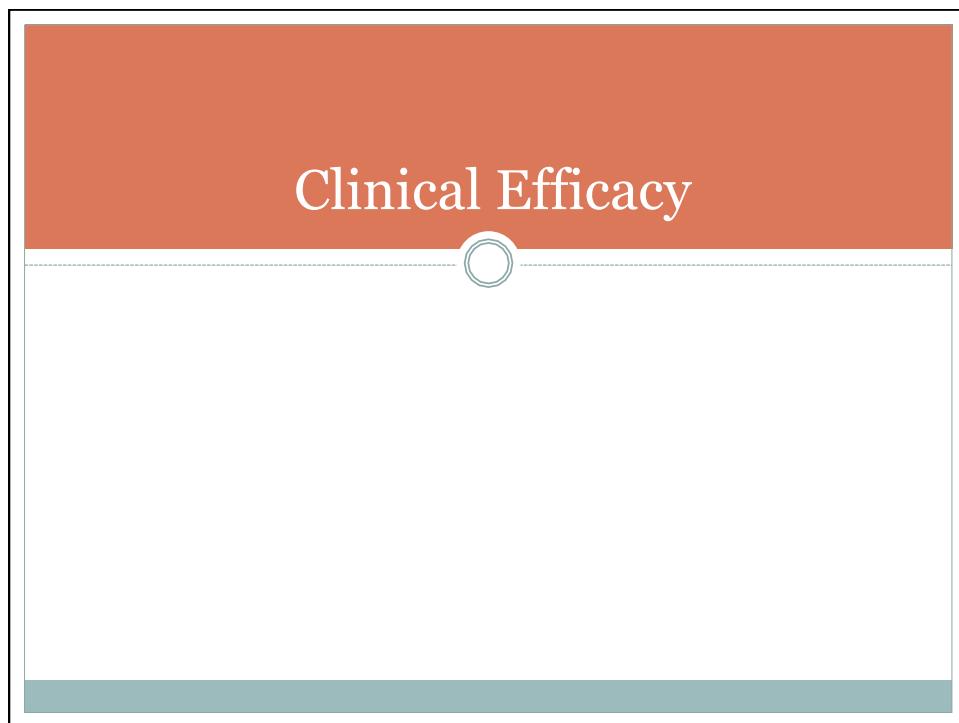
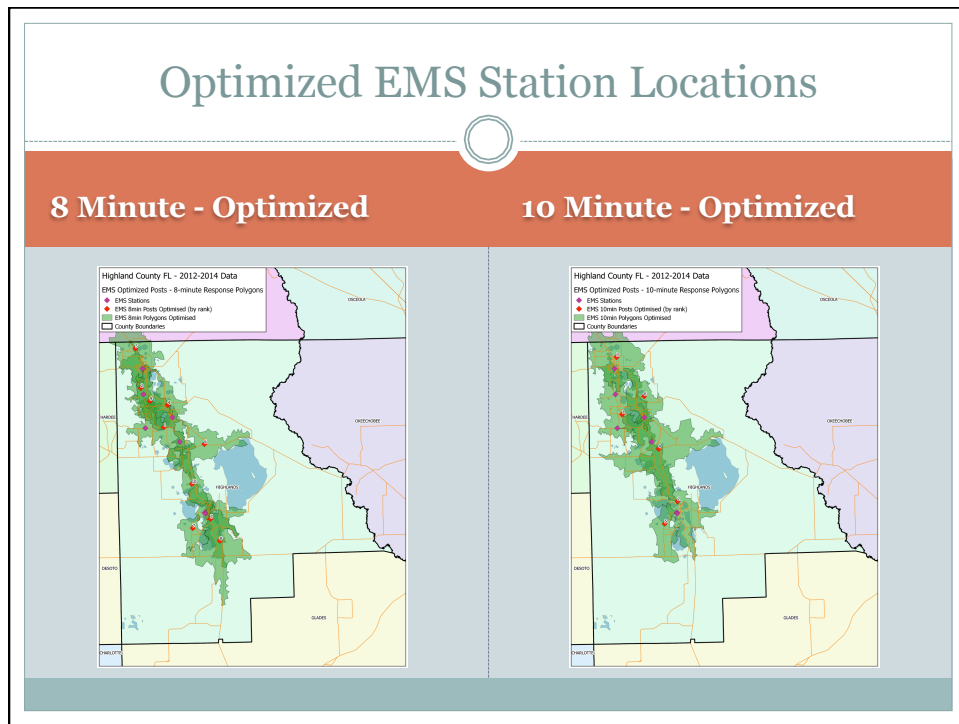


EMS Benchmarking

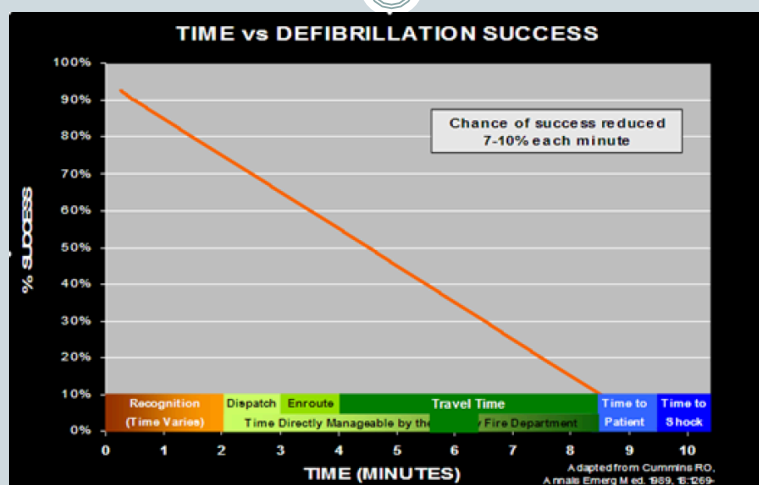
Measure	90 th Percentile Current Performance	NFPA 1710	CFAI
Dispatch Time	1.9	1.0	1.0
Turnout Time	2.1	1:00 EMS 1:20 Fire	1:00 EMS and Fire
Travel Time	10.0	4:00 Fire and BLS 8:00 ALS	4:00 Fire and EMS 10:00 Fire and EMS (Rural)
Total Response Time	12.5	6:00 BLS 6:20 Fire 10:00 ALS	6:00 EMS 6:20 Fire 12:00 EMS (Rural)

Response Time Policy

	Current Deployment	6 Minutes	8 Minutes	10 Minutes
Stations	7	20	10	6 (Optimized)
Units	8	23	13	9
Approximate Costs	\$5.2 m	\$15.0 m	\$8.5 m	\$5.9 m

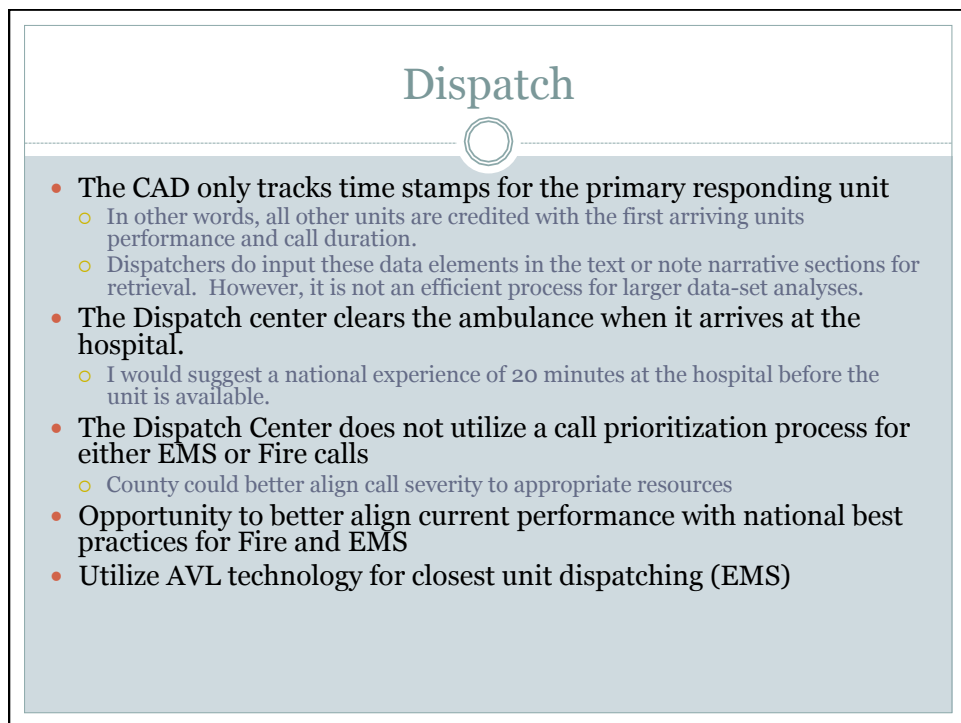


Witnessed Cardiac Arrest Survival Rates



Clinical Efficacy

- Overall, EMS system provides quality care of the sick and injured
- Current response time performance and capability is reasonable for the community profile and is currently meeting expectations for service
- Sudden cardiac arrests typically account for 1% of the annual demand
- Agency has effective quality assurance and quality improvement processes



Apparatus and Facilities

EMS Fleet and Infrastructure

- Condition of fleet is sufficient for the mission
- Condition of fixed facilities (Stations) is not commensurate with our national experience
 - However, the cleanliness as provided by the crews is excellent given the conditions of the facilities
- Utilize a combination of years of service, mileage, and repair costs to determine replacement
 - 5 to 7 years
 - 200,000 miles

EMS Capital Expenditures

- **Fleet Replacement —**
 - EMS is funded for a yearly replacement for one new Type 1 (truck chassis) ambulance
 - Anticipate this purchase through FY18/19
 - After 18/19, less expensive re-chassis options will be considered
- **Capital Projects – Infrastructure Surtax Funds**
 - Adopted 15/16 Capital Strategy Budget includes \$1,194,000 Monitor Defibrillator \$26,450
 - ✦ Funded from other County Funding

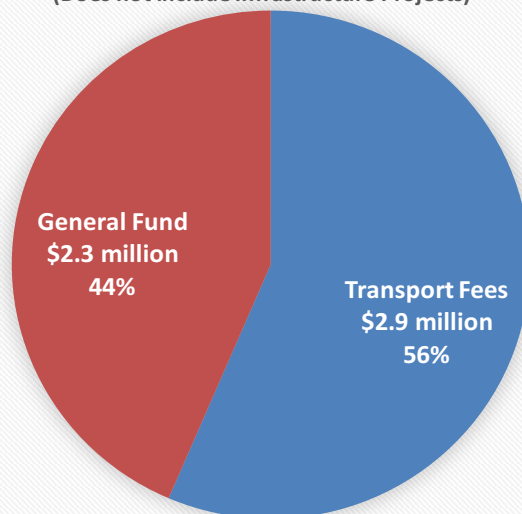
EMS Financial Overview

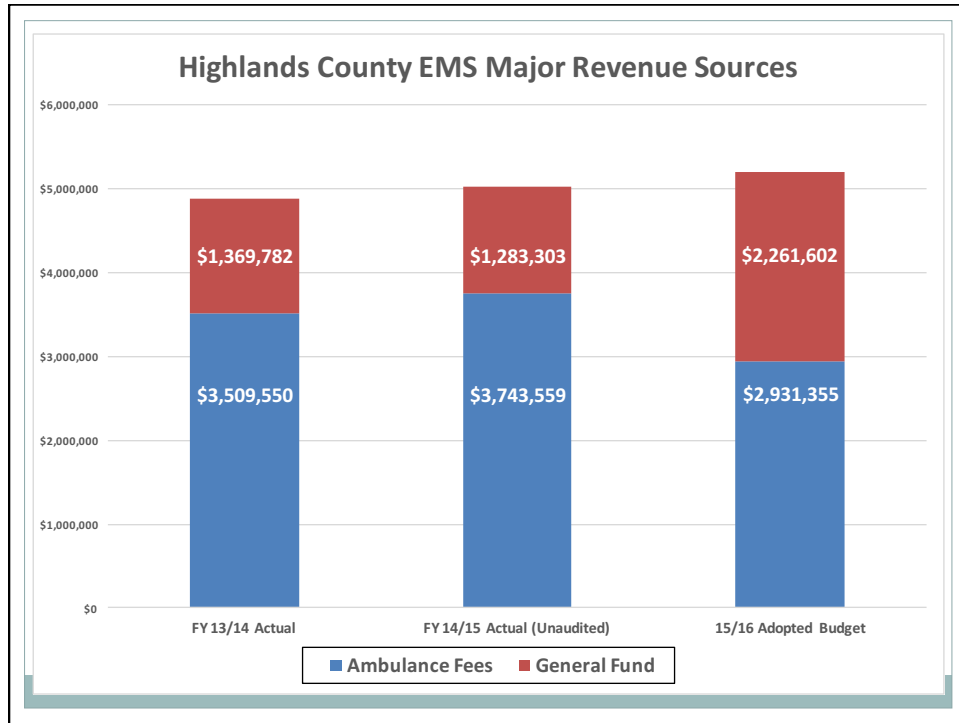
EMS Financial Overview

- **General Fund and Patient Transport Fees**
 - EMS is part of the Countywide budget
 - Competes annually with other County departments for funds
- **Patient Transport Fees**
 - 911 calls generate patient transports
- **Fleet replacement and major capital projects**
 - Separate from operating budget (infrastructure taxes)
- **Unlike fire special districts, EMS has no year end fund balance to carry forward**

EMS Revenue Sources - 15/16 Adopted Budget \$5.2 million

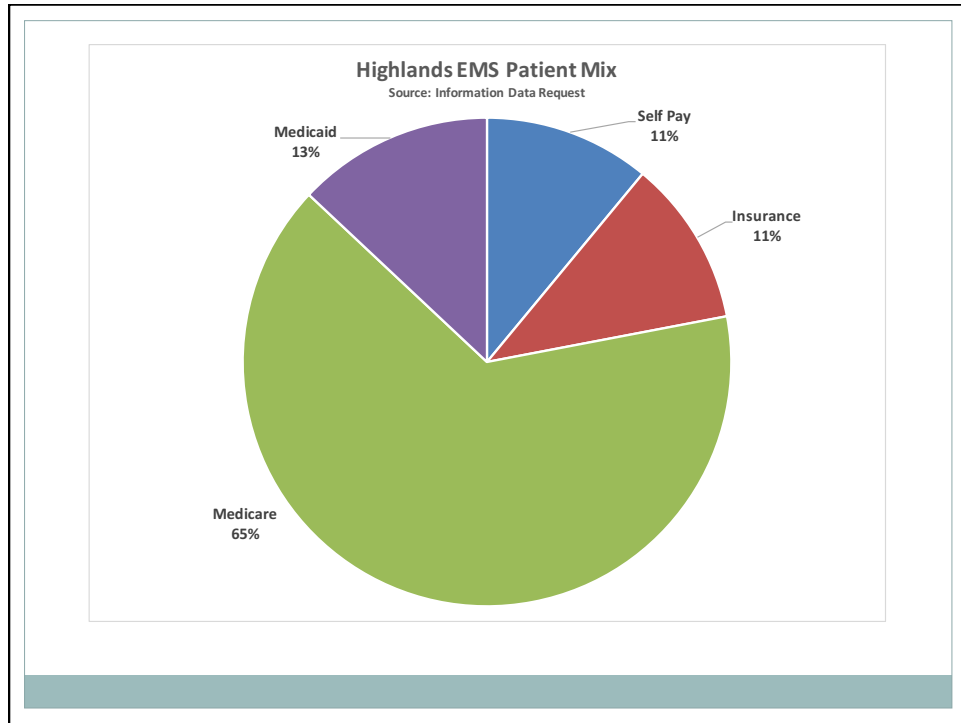
(Does not include Infrastructure Projects)





EMS Ambulance Transport Fees

	13/14 Actual	14/15 Actual (Unaudited)	15/16 Adopted Budget
Gross Billings	\$5,350,892	\$6,753,118	\$5,631,355
Medicare/Aid Unallowables	-\$1,002,721	-\$1,663,312	-\$1,500,000
Bad Debt	-\$838,621	-\$1,346,247	-\$1,200,000
Net Transport Fee Revenues	\$3,509,550	\$3,743,559	\$2,931,355
Collection Rate	66%	55%	52%



Ambulance Transport Rates

- Rates lower than are typical for Emergency ALS/BLS
 - Rule of thumb is 150% of Medicare allowable
- High percentage are Medicare which pays 80% of allowables; rest is billed to patient or insurance; may be leaving money on the table; no harm to patients w/ supplemental
- Same issue for mileage rates
- Unusual to have rates for interfacility lower than allowables – may be viewed as a compliance issue
- Treat and no transport at \$75 is excellent if collected
- Medicaid and private pay combined are 30% of payers

EMS 15/16 Expenditure Budget

	13/14 Actual	14/15 Actual (Unaudited)	15/16 Adopted Budget
Personnel	\$4,057,072	\$4,184,784	\$4,325,304
Non-Personnel	\$816,935	\$829,736	\$861,930
Capital*	\$5,325	\$12,342	\$5,723
Total	\$4,879,332	\$5,026,862	\$5,192,957
% Year to Year Change		+3.0%	+3.3%

Fleet replacement and larger infrastructure projects are budgeted separately and are provided on a separate slide.
Source: Highlands County FY2015-2016 Adopted Budget & Capital Financial Strategy FY2015/2016 – 2014/2025

Recommendations for EMS

EMS Recommendations

- Our analyses suggest that the EMS system would perform optimally with 9 ambulances
 - Currently, the system deploys 8 ambulances
 - Could utilize a 12-hour peak load schedule for 9th Unit
- EMS system could benefit from priority dispatch protocols that aligns the risk or severity of the incident with both the resources deployed and the speed with which they are deployed.
 - For example, fewer emergency responses that put the public and personnel at risk
 - Ability to defer calls to those that are clinically most in need when the system is stressed

EMS Recommendations

- Automatic Vehicle Locator (AVL) technology could help to ensure that the closest unit to an incident is sent rather than the unit that is pre-assigned by geographic territory
- Improve coordination with fire services
 - Lines of authority and overall coordination is limited
- Develop a comprehensive and timely capital improvement program for EMS facilities
- Align billing rate schedule for transport services with the minimum allowable costs from Medicare/Medicaid

Description	Code	Highlands County Rates	Recommended Rates
Emergent			
BLS Emergent Base Rate	A0429	\$450.00	\$684.45
ALS Emergent Base Rate	A0427	\$500.00	\$812.78
ALS 2 Base Rate	A0433	\$600.00	\$1,176.39
Mileage (per loaded mile)	A0425	\$12.00	\$16.46
Treat-No-Transport	A0999	\$75.00	N/A
Refusal (habitual abuse)	A0999	\$75.00	N/A
Standby Coverage per Hour (min 2 hrs.)	A0420	\$100.00	N/A
Non-Emergent			
BLS Non-Emergent Base Rate	A0428	\$276.42	\$427.79
ALS Non-Emergent Base Rate	A0426	\$328.26	\$513.33
ALS 2 Base Rate	A0433	\$475.10	\$1,176.39
Mileage (per loaded mile)	A0425	\$8.00	\$16.46

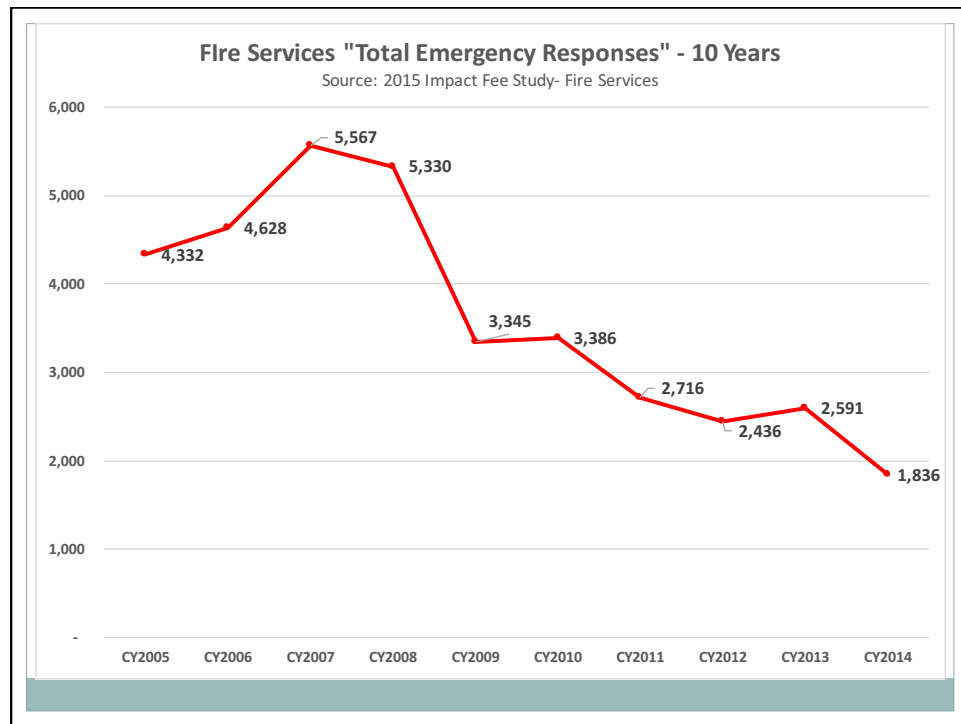
EMS Recommendations

- Update dispatch process procedures to accurately account for important time elements for EMS services
 - Specifically, change the practice of placing the ambulance available upon arrival at the hospital
- Create a CAD data element for indicating if an EMS call results in a patient transportation

Fire Services

Fire Services In Highlands County

- **10 Special Benefits Taxing Districts**
 - “Dependent Districts” – County Commission Governing Body
 - Strong ties to communities
- **County Infrastructure**
 - Assesses/collects revenues according to state guidelines
 - Provides accounting processes, procedures
 - Handles payroll, hiring intake and processes as needed
 - Provides overall infrastructure that includes —
 - ✦ Purchasing, information technology, financial reporting, payroll, legal, finances capital purchases



Responses and Total Busy Time by 10 Depts.

Call Category	Number of Calls	Calls per Day	Number of Responses	Average Responses per Call	Total Busy Hours	Average Busy Minutes per Response
EMS	540	1.5	608	1.1	226	22.3
MVC	308	0.8	500	1.6	402	48.3
Structure fire	81	0.2	361	4.5	608	101.0
Brush fire	175	0.5	463	2.6	523	67.8
Vehicle fire	55	0.2	106	1.9	145	82.3
Fire alarm	163	0.4	438	2.7	181	24.8
Fire other	260	0.7	541	2.1	466	51.7
HazMat	8	0.0	14	1.8	13	57.7
PD matter	66	0.2	90	1.4	58	38.5
Public service	69	0.2	99	1.4	152	92.1
Total	1,725	4.7	3,220	1.9	2,774	51.7

Percentage of Co-Responses with EMS

Call Category	Number of Calls		Total	Percentage of Co-Response
	Both EMS and Volunteer FD	Volunteer FD Alone		
EMS	472	68	540	87.4%
MVC	277	31	308	89.9%
Structure fire	63	18	81	77.8%
Brush fire	0	175	175	0.0%
Vehicle fire	4	51	55	7.3%
Fire alarm	2	161	163	1.2%
Fire other	27	233	260	10.4%
HazMat	1	7	8	12.5%
PD matter	26	40	66	39.4%
Public service	8	61	69	11.6%
Total	880	845	1,725	51.0%

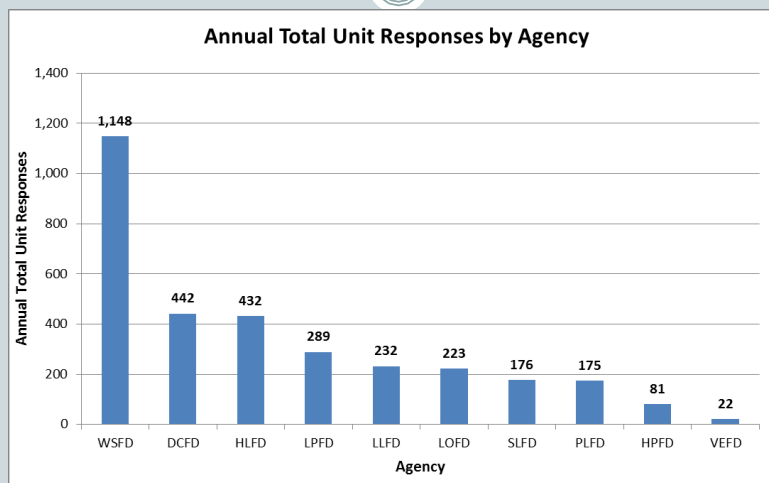
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	Sun N Lakes Fire Department	153
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	West Sebring Fire Department	910

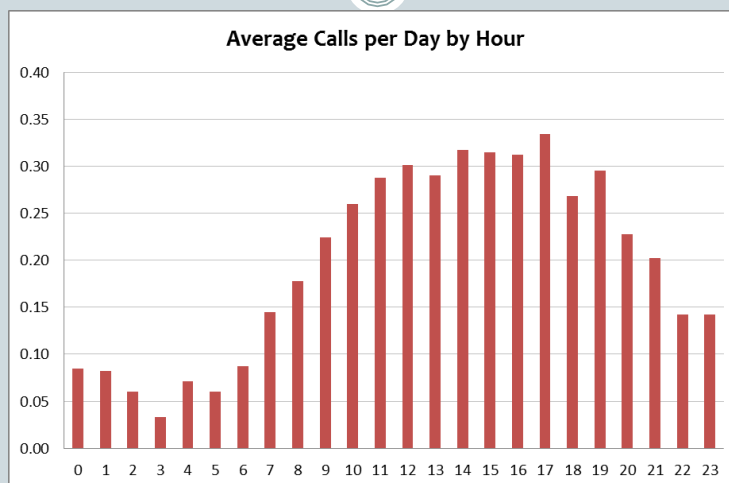
Workload by Fire Agency

Agency	Avg. Busy Minutes per Response	Annual Busy Hours	Annual Total Unit Responses	Unit Responses per Day	Busy Minutes per Day
WSFD	48.1	919	1,148	3.1	151.1
DCFD	45.8	337	442	1.2	55.4
HLFD	45.4	327	432	1.2	53.8
LPFD	61.2	295	289	0.8	48.5
LLFD	56.2	217	232	0.6	35.7
LOFD	67.5	251	223	0.6	41.3
SLFD	56.3	165	176	0.5	27.1
PLFD	48.7	142	175	0.5	23.3
HPFD	69.3	94	81	0.2	15.5
VEFD	72.4	27	22	0.1	4.4

Total Responses by Agency



Average Calls by Hour of Day



FD Response Time Performance – 90th

Call Category	Dispatch Time	Turnout Time	Travel Time	Turnout and Travel Time	Response Time	Sample Size
EMS	0.9	7.1	9.6	13.8	14.0	176
MVC	1.3	7.3	9.9	13.9	14.6	82
Structure fire	2.6	7.4	11.1	15.2	15.7	29
Brush fire	2.1	9.6	15.7	23.2	23.9	175
Vehicle fire	2.0	9.6	12.0	18.2	19.2	52
Fire alarm	2.5	8.3	10.9	14.9	16.7	160
Fire other	2.6	9.4	11.6	17.4	19.4	235
HazMat	8.0	7.7	9.5	14.4	22.3	7
PD matter	2.3	8.0	15.5	22.6	25.3	48
Public service	2.6	8.2	9.7	17.6	19.3	60
Total	2.2	8.8	11.4	17.3	18.8	1,024

FD Performance by Agency – 90th

Agency	Dispatch Time	Turnout Time	Travel Time	Turnout and Travel Time	Response Time	Sample Size
DCFD	2.3	7.9	11.6	15.9	17.5	135
HLFD	2.0	7.4	10.5	15.6	17.1	164
HPFD	2.2	17.4	20.9	21.6	23.0	16
LLFD	2.1	8.8	10.0	15.8	16.8	64
LOFD	1.7	12.0	25.2	30.5	31.8	98
LPFD	2.4	10.0	9.6	16.6	17.6	100
PLFD	2.1	10.4	10.2	16.3	17.4	49
SLFD	2.3	7.1	9.9	15.9	16.7	83
VEFD	2.6	13.2	15.3	27.4	28.7	8
WSFD	2.4	7.6	10.7	16.7	18.8	307
Total	2.2	8.8	11.4	17.3	18.8	1,024

Fire Services Financial Overview

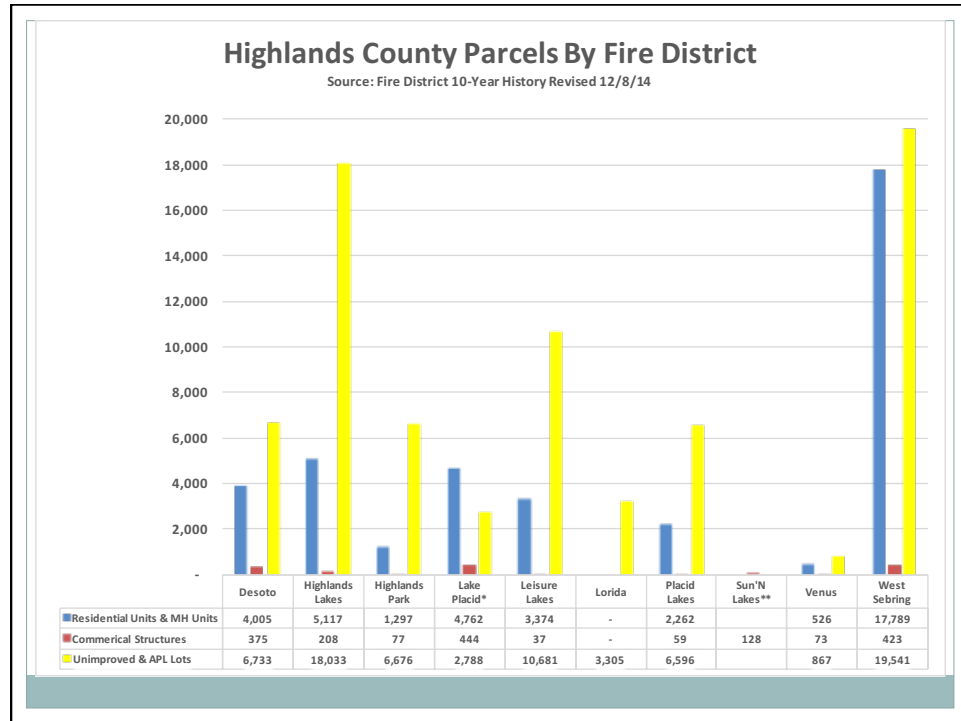
District	Un-imp Lot	APL Unimp. Lot	Vacant Lot or Fraction	Improved Parcel	Resid. Dwelling	Comm. Structure	Rental MH Park
Desoto	\$5				\$25	\$150	\$20
Highlands Lakes	\$5	\$2.50			\$25	\$150	\$20
Highlands Park					\$20	\$150	\$15
Lake Placid			\$3		\$20	\$100	\$15
Leisure Lakes	\$5		\$3		\$25	\$150	\$20
Lorida	\$5			\$20.00			
Placid Lakes	\$5				\$25	\$150	\$20
Sun'n Lakes	\$20				\$20	\$150	\$20
Venus					\$25	\$150	\$15
West Sebring	\$5				\$25	\$150	\$15

Source: Highlands County Fire Non-Ad Valorem Assessment Rates

Fire Districts – Similar Rate Schedules*

- **Residential Dwellings —**
 - 3 Districts assess \$20/dwelling; 6 Districts assess \$25
- **Commercial Structures —**
 - 1 District assesses \$100/structure; 8 Districts assess \$150
- **Rental Mobile Home Parks —**
 - 4 assess \$15/MHP; 5 Districts assess \$20
- **Unimproved or Vacant Lots —**
 - All Districts assess for unimproved/vacant lots ranging from \$2 to \$5 with one District assessing \$20

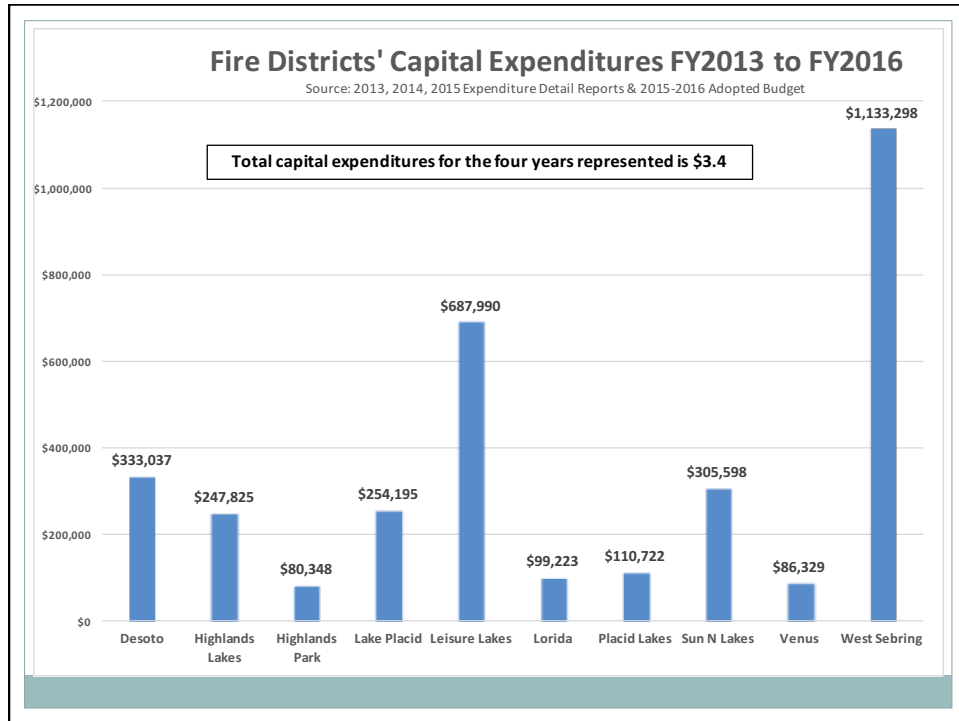
*Lorida assesses only for unimproved (\$5) & improved parcels (\$20)



Fire System 15/16 Costs

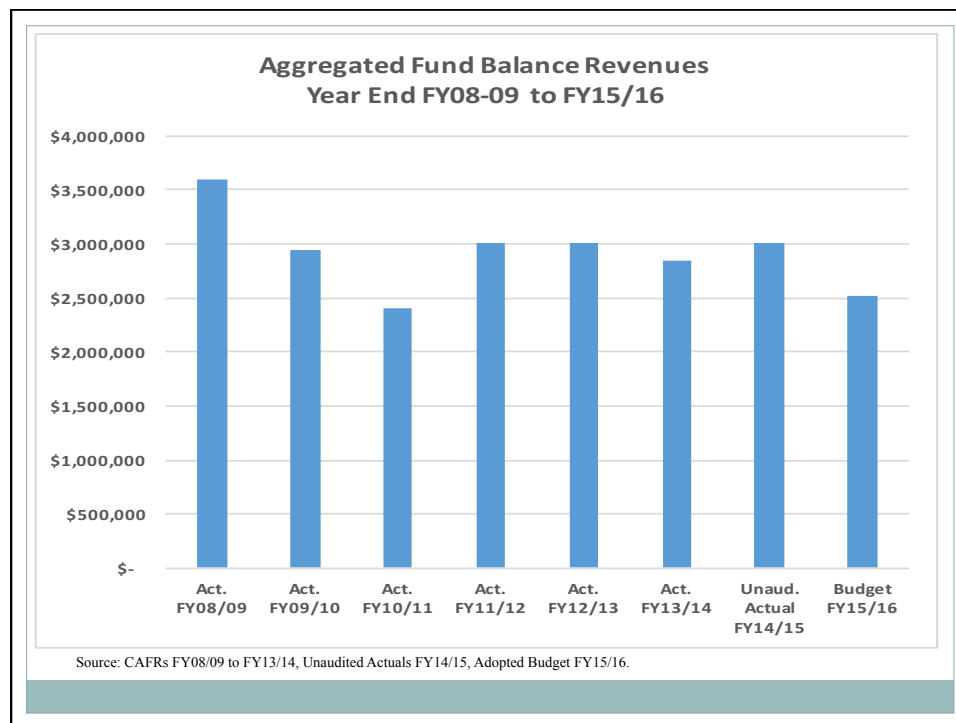
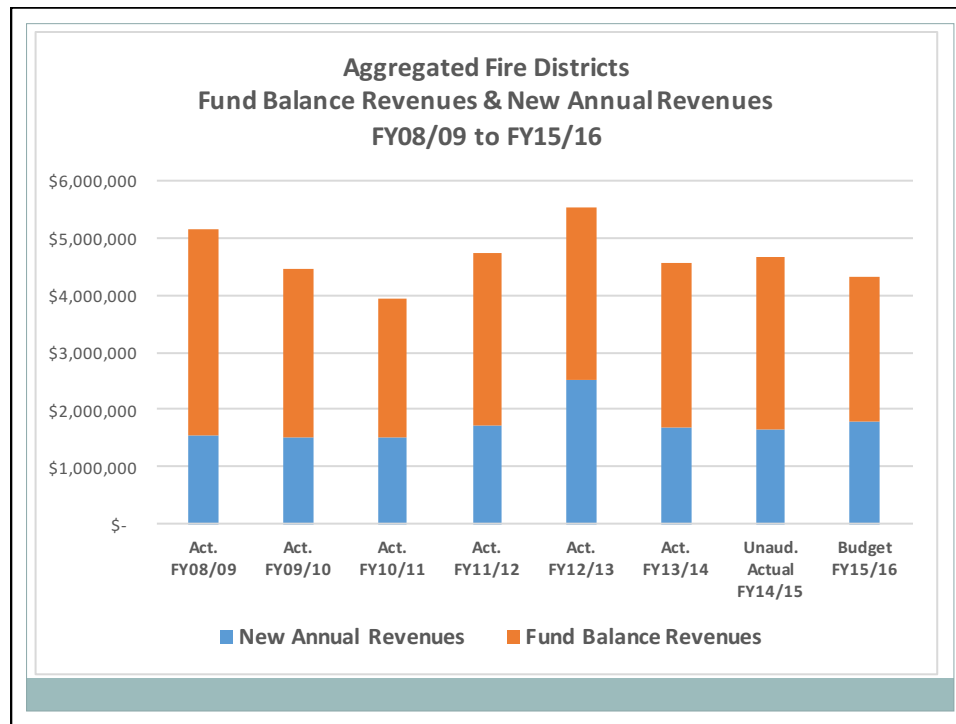
Expense Category	15/16 Budget	% of Total
Salary/OT/Fringes	\$374,824	17%
County Administration	\$172,312	8%
Other Non-Personnel	\$1,121,361	49%
Capital Expenses	\$591,100	26%
Fire Districts' Total Expenditures	\$2,259,597	100%
Mutual Aid Funds	\$60,000	
Fire Coordinator Budget	\$580,650	25% of District Budgets
Total Fire System Costs	\$2,900,247	

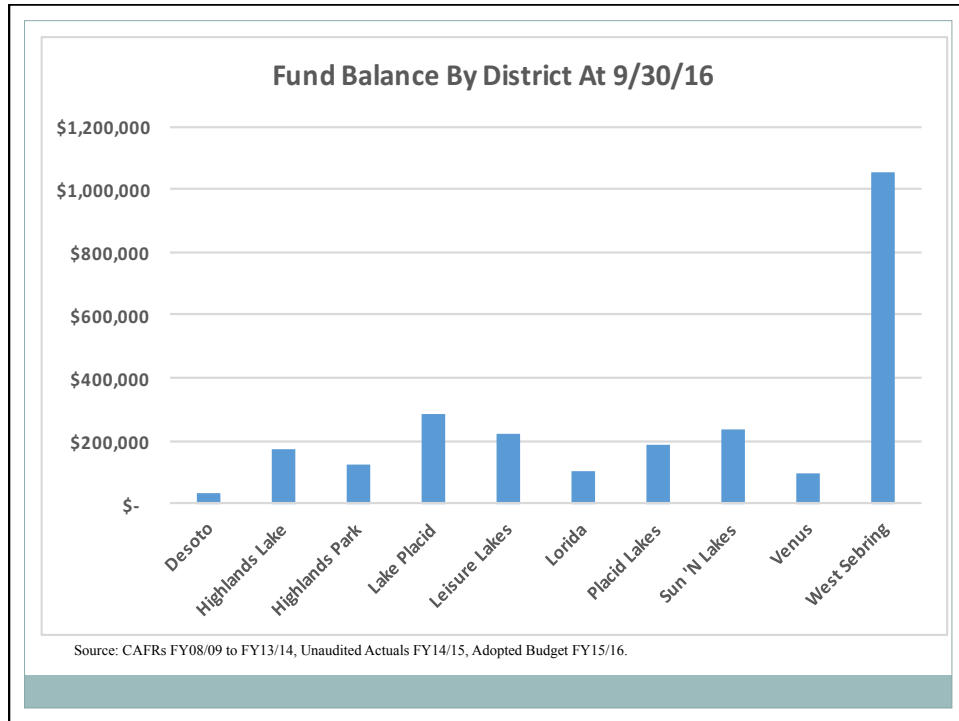
Source: 2015-2016 Adopted Budget Book, 8/26/15. Mutual Aid and Fire Coordinator are budgeted in General Fund.



Fire Districts' Financial History

- Non-ad valorem revenues relatively flat and change only with parcel modifications
- Parcel assessment rates are not reduced year-to-year and fund balances can grow
- While parcel taxes paid by property owner are stable, revenues are not in tune with property values that are protected by fire department
- Aggregated fund balances (unspent money) for the combined 10 districts are estimated to be \$2.5 million as of 9/30/16





Estimating Financial Sustainability

- Sources: CAFRs (FY08/09 to FY13/14), FY14/15 Actual (Unaudited) & FY15/16 Adopted Budget.
- Tracked revenues, expenditures & fund balances for 8 years from FY08/09 to FY15/16
- Reviewed the more recent expenditure history and provided observations for each district
- Some districts are challenged going forward; others have growing, unused fund balances.
- Aggregated fund balances for the 10 fire districts at 9/30/16 will be **\$2.5 million**
 - Following County practice of a 3 month (25%) fund balance would have \$1,775,000 in excess aggregated fund balance

Fire Districts	8 yr. Avg. Revenues	8 yr. Avg. Expenses	8 yr. Avg. Surplus or Deficit	Est. Fund Bal. as of 9/30/16	What Does Fund Balance Say About the District Going Forward?
Desoto	\$219,216	\$229,181	-\$10,005	\$33,811	Must manage closely. Revenues may be declining
Highlands L.	\$229,009	\$258,371	-\$29,362	\$176,188	Spending variable; FY15/16 expenditure budget cut fund balance in half; fund balance needed in 3 of last 4 years including FY15/16
Highlands P.	\$62,982	\$66,535	-\$3,553	\$126,188	Revenues & long term fund balance is sustainable; fund balance is 2 times annual expenditures
Lake Placid	\$159,844	\$198,764	-\$38,920	\$287,463	FY15/16 expenditure budget cut fund balance nearly in half; fund balance & close management can sustain; revenue declining somewhat.
Leisure L.	\$163,970	\$239,482	-\$75,511	\$222,451	Spending variable; revenues & long term fund balance can sustain if no major purchases
Lorida	\$85,711	\$78,644	\$7,107	\$104,171	More revenue than expenditures each year except FY15/16; at current expenditure rate can sustain approximately 4 years
Placid Lakes	\$104,544	\$99,064	\$5,480	\$186,886	Growing fund balance; sustainable at current expenditure rates
Sun 'N Lakes	\$198,993	\$242,698	-\$43,706	\$236,854	Depended on fund balance for last 3 yrs. thru FY15/16
Venus	\$29,605	\$26,946	\$2,659	\$95,539	Growing fund balance needed last 3 yrs. thru FY15/16; FY15/16 expenditure budget nearly doubled
W. Sebring	\$494,503	\$503,410	-\$8,907	\$1,055,703	Growing fund balance; fund balance is nearly 2 times FY15/16 expenditure budget

Fire Services Operational Assessment

Fire Operations Services

- Facilitated by HCFS Supervisor of Operations
- Maintains HCFS Standard Operating Guidelines
- Firefighter Safety and Compliance
- HCFS facility and equipment maintenance
- EOC: ESF #4
- Directly supervises 4 Firefighter/EMTs assigned to DCFD and HLFD

Fire Prevention Services

- Facilitated by Fire Marshal in HCFS
 - 2 FTEs : Fire Marshal and one Fire Inspector
- Provides enforcement of Florida Fire Prevention Code through plans review, fire inspections, and public education
- No established target cycle for fire code inspections
 - 2,314 properties subject to inspections
 - ✦ 354 inspections performed in FY14
- Limited ability to evaluate fire losses against prevention efforts

Fire Prevention Services

- Reviewed 94 sets of plans in FY14
 - 10 day turn-a-round at 90%
- Public Education programs reach >90% of children ages 4-12.
 - Other age groups have minimal contacts
- Delivered 35 programs reaching 3,800 residents in FY14
- Need to develop a process for identifying target populations

Fire Training Services

- Facilitated by HCFS Supervisor of Training
- Primary provider of minimum standards training for volunteer personnel
 - Firefighter I
 - First Responder
- Primary provider for in-service trainings for districts
 - Pump Operations
 - Driver Training
 - Extrication
 - Communications
- ISO required training facilitated in-house by each department

Fire Training Services

- Current staffing level cannot support system needs with addition of Firefighter Credentialing document
- HCFS only tracks minimum training requirements for personnel
 - No formalized process for tracking credentialing compliance
- Not fully NIMS compliant
 - HCFS staff is fully complaint
 - More than 50% of active volunteers are not compliant
- Training is not commensurate across the agencies
 - Limited interagency coordination

Stakeholder Issues: Fire Services

- Insufficient level of County oversight over volunteer district personnel and assets
 - Enforcement of firefighter credentialing
 - Cleanliness and upkeep of stations and equipment
 - ✦ Compliance with applicable NFPA standards and best practice
- No set performance standards for volunteer districts
 - No response
 - Delayed response
 - Effective force muster
- Inconsistent equipment standardization
 - PPE, SCBA, Apparatus

Stakeholder Issues: Fire Services

- Differing levels of service provided under umbrella of same fire authority
 - 2 out of 10 districts provide staffing M-F, 8-4
 - ✦ Staffed units responded more than 2-1/2 minutes faster, on average and at the 90th percentile, than non-staffed units
 - Inconsistent reliability
 - ✦ Variability across districts for turnout time
 - Equipment and Training
 - ✦ 6 different generations of SCBA
 - ✦ Varying levels of PPE protection and ensemble compliance
 - ✦ Apparatus at varying levels of compliance and non-compliance

SCBA Records

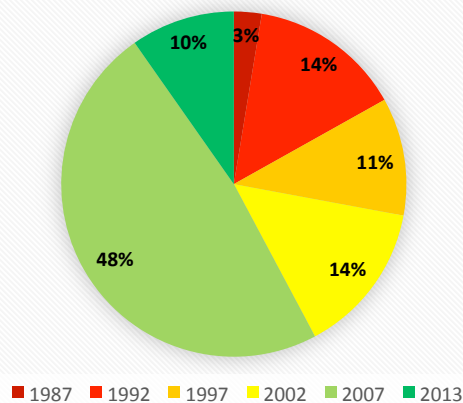
- Current record keeping is insufficient
 - Fixed asset and flow test quantities do not align
 - ✦ 154 SCBAs to 85 flow tests in 2015
 - Some departments show more packs in inventory than are reflected on HCFS Fixes Asset Inventory
 - Inconsistent documentation of NFPA 1852 required inspections, maintenance, and testing.
 - ✦ Inspections: Minimum weekly
 - ✦ Flow tests: Annually
 - ✦ Mask Fit Test: Annually
 - Not presently being performed

SCBA Inventory

- SCBA units in service span 6 generations of NFPA 1981: Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services
 - Significant changes in design, operation and Safety from 1987 to 2013 editions
 - Units purchase prior to August 1992 should be retired unless upgraded to NFPA 1981, 2007 edition
- Non-standardized manufacturer and model
 - ISI and MSA: Viking, Magnum, Firehawk, etc.
- Inventory is excessive for need
 - Current deployment should only require 96 units

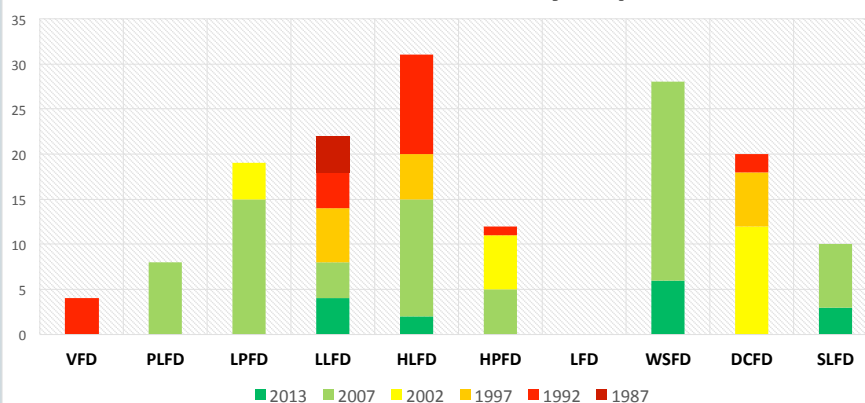
SCBA Inventory

SCBA Totals by NFPA 1981 Edition



SCBA Inventory

SCBA NFPA 1981 Editions by Department



PPE Records

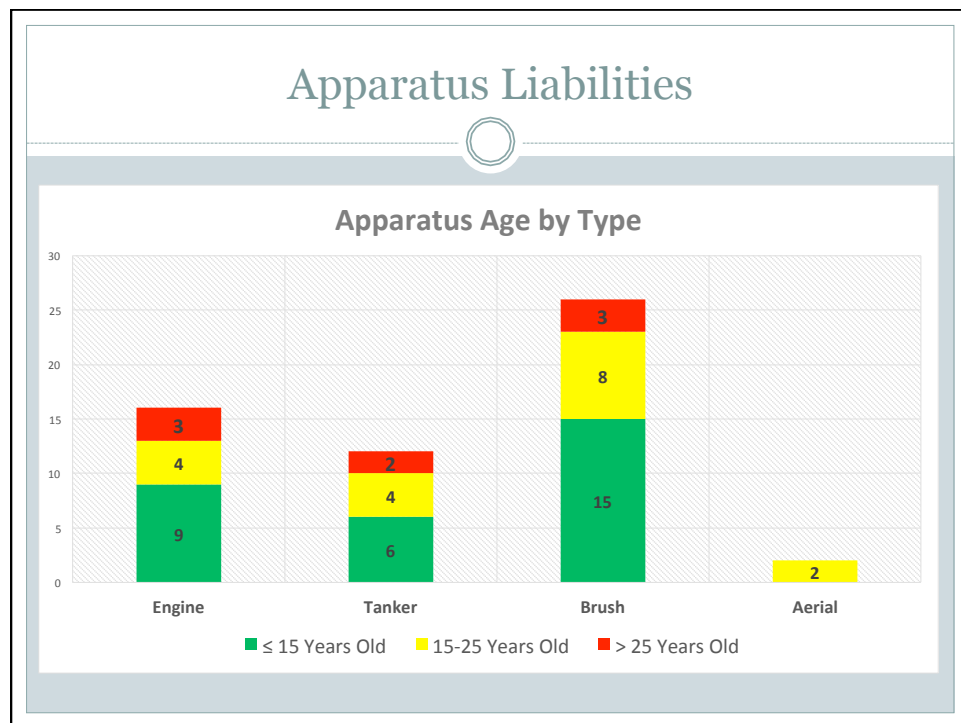
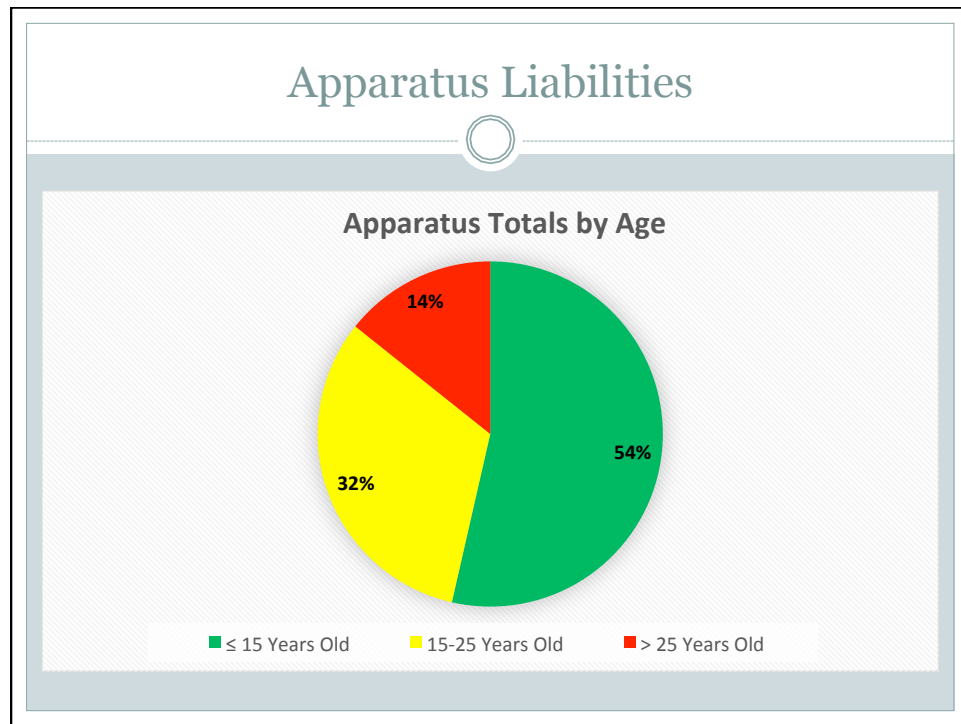
- NFPA 1851: Selection, Care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting
 - Advance Inspection – Minimum every 12 months
 - Advance Cleaning – Minimum every 12 months
 - Required record keeping
 - ✦ Item specifications, date of issue and condition, assigned user
 - ✦ Date of manufacture, inspections, cleanings
 - ✦ Repair and Maintenance details
 - ✦ Date of retirement and method of disposal
- No records kept by HCFS and none provided by Districts

PPE Inventory

- No inventory tracking by HCFS
 - None provided by Districts
- No system for ensuring NFPA 1851 compliance
- No method to ensure use of only compliant PPE
- No system to ensure non-compliant gear is properly disposed of
 - Utilizing non-compliant PPE for Support/Non-Certified members
- Non-standardized manufacturer and model
 - FireDex and Globe – Varies by District's revenue
 - Varying levels of protection

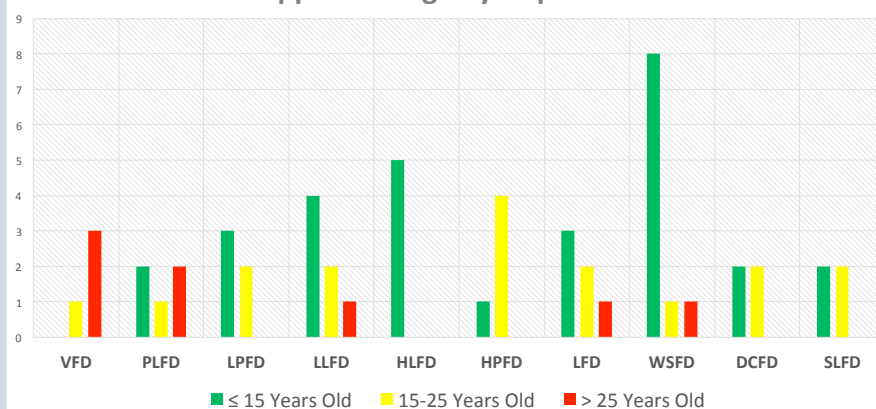
Apparatus

- NFPA 1901 – Standard for Automotive Fire Apparatus (2009 Edition)
 - Apparatus in first-line service should be ≤15 years old and manufactured in accordance with NFPA 1901.
 - Apparatus >15 years old that has been properly maintained should be placed in reserve status.
 - Apparatus not manufactured to applicable standards or that are >25 years old should be replaced
 - "Fire departments should seriously consider the value (or risk) to fire fighters of keeping fire apparatus older than 15 years in first-line service (NFPA 1901, App-D)."



Apparatus Liabilities

Apparatus Age by Department

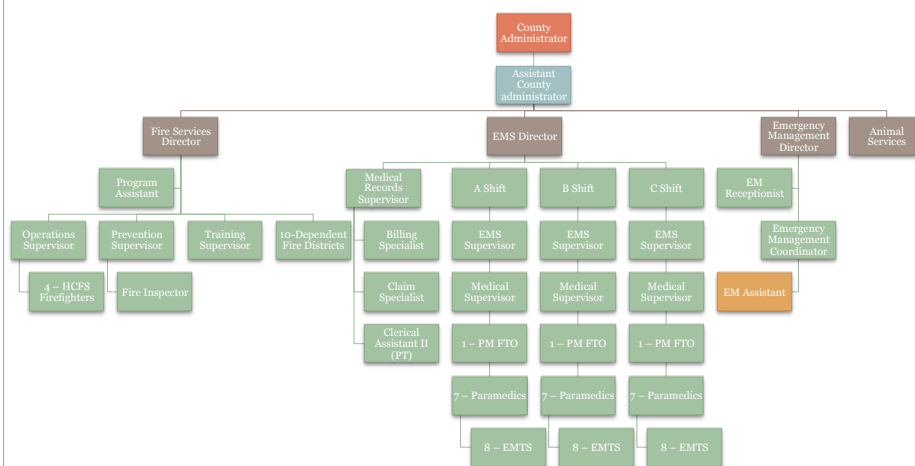


Apparatus Inventory

- Only 54% of fleet meets NFPA standard as First-Line
- Recommend formalizing an apparatus replacement plan
- Recommend developing a process for tracking unit operating costs
- Recommend establishing a process to ensure consistent apparatus checks and maintenance
 - Annual pump tests are performed
 - Maintenance/repairs performed by EVT at County Road Shop
- Recommend a system approach to capital purchases
- Current process has resulted in excess capital for system
 - 16 Engines
 - 12 Tankers
 - 26 Brush Trucks
 - 2 Aerials

Organizational Structure

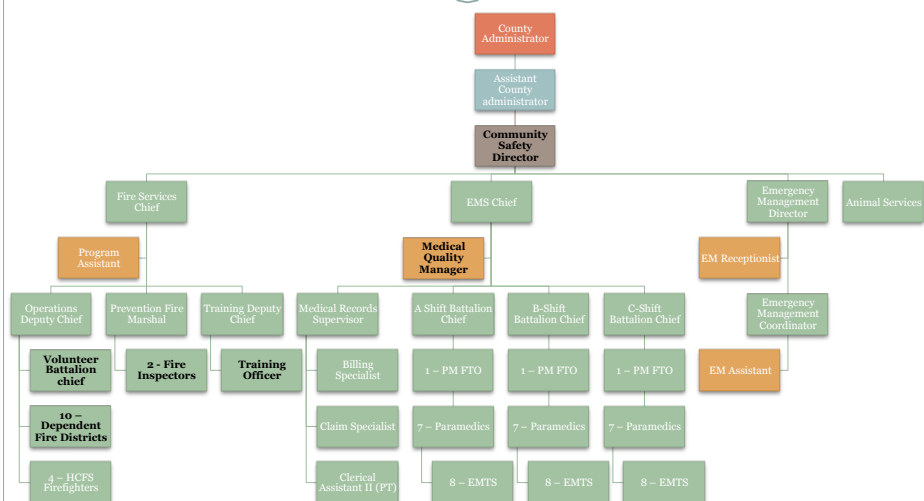
Current Org Chart



Recommended Organizational Structure

- **Eliminate three shift Medical Supervisor positions**
 - Frees up three FTE's
 - Eight units/call volume can be managed by one shift supervisor
- **Establish one 40 hr. Medical Quality Supervisor**
 - Identifies needs and coordinates any remediation through Shift Battalions
- **Place 10 dependent districts under direct supervision of Operations Chief**
 - Supervises all stations, equipment, and personnel compliance
 - ✦ Direct engagement of needs and issues in field

Recommended Organizational Structure



Recommended Organizational Structure

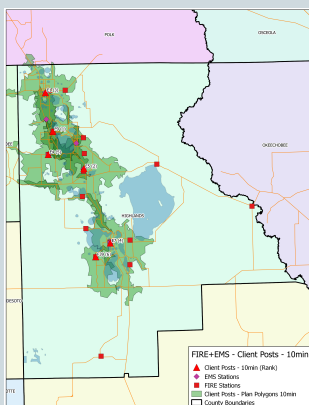
- **Add Training Officer**
 - Facilitate county wide training program
 - Facilitate compliance with credentialing document
- **Add additional Fire Inspector**
 - Two Fire Inspectors could accomplish a more timely inspection cycle for the 2,314 properties
 - ✦ **ISO:** Jurisdiction must provide adequate personnel to perform fire inspections in non-residential structures at least once a year.

Partial Consolidation

Partial Consolidation of EMS and Fire Services

10 Minutes – 90% All Calls

Advantages



- Improved oversight
- Improved EMS services
- Improved Fire Services
- Consolidate Costs
- Broaden available revenue sources to cover system costs

Optimal Utilization of Resources

Rank	Station Number	Latitude	Longitude	Class	Station Capture	Total Capture	Percent Capture
1	F9	27.515781	-81.487715	U	23431	23431	45.92%
2	E5	27.441887	-81.421333	U	7937	31368	61.48%
3	E1	27.591983	-81.502537	U	7856	39224	76.88%
4	E7	27.295309	-81.366862	U	4723	43947	86.14%
5	E4	27.470932	-81.499067	U	1308	45255	88.70%
6	F39	27.269045	-81.399483	U	989	46244	90.64%
7	F24	27.4474	-81.260885	U	734	46978	92.08%
8	F29	27.324575	-81.419816	U	418	47396	92.90%
9	E3	27.491744	-81.436803	U	393	47789	93.67%
10	F41	27.252122	-81.324733	U	359	48148	94.37%
11	E2	27.539678	-81.501758	U	262	48410	94.88%
12	F2	27.59575	-81.458837	U	222	48632	95.32%
13	F30	27.387419	-81.426052	U	217	48849	95.74%
14	F33	27.300099	-81.323224	U	149	48998	96.03%
15	F45	27.074428	-81.392304	U	126	49124	96.28%
16	F25	27.361046	-81.055	U	107	49231	96.49%
17	F1	27.595641	-81.494026	U	10	49241	96.51%
18	F18	27.471361	-81.4197	U	5	49246	96.52%
19	E6	27.29729	-81.367265	U	3	49249	96.53%

Estimated System Costs and Configuration

	EMT/FF	P/FF
Upgrade Current 57 Shift Employees	\$247,195 (27)	\$400,967 (30)
13 New Employees	\$362,862 (6.62)	\$479,956 (6.62)
Subtotal	\$610,057	\$880,923
Total	\$1,490,980	
8 Current FFs	\$372,737	
Net Costs for Personnel*	\$1,118,243	

* Full consolidation would provide approximately \$1.6 million in new revenues to fund new personnel costs

Estimated System Startup and Conversion Costs

	Quantity	Price	Total
Ambulances	2	\$180,000	\$360,000
Mini-Pumpers	2	\$250,000	\$500,000
Station Facilities	Variable		\$600,000
Firefighter Certification Training	44	\$4,000	\$176,000
SCBA and Personal Protective Equipment	70 – PPE 44 – SCBA	PPE - \$1,500 SCBA - \$6500	\$391,000
Total			\$2,027,000

Estimated System Startup and Conversion Costs

Station	Needs	Estimated Costs
Fire Station 9	Rebuild - Scheduled	\$0
EMS Station 5	Rebuild – Scheduled	\$0
EMS Station 1	Renovation	\$200,000
EMS Station 7	Utilize EMS 6 - Renovate	\$200,000
EMS Station 4	Good Condition	\$0
Fire Station 39	Renovation	\$200,000
Total		\$600,000

Baseline Wages and Compensation

	EMT	Paramedic
Average Salary	\$20,560.22	\$28,387.19
Hourly – 2080 Hours	\$9.88	\$13.65
Shift diff – 832 Hours	\$8,224.09	\$11,354.88
Holiday pay – 264 Hours – Double Pay	\$5,219.13	\$7,205.98
Wages total	\$34,003.44	\$46,948.05
FICA 6.42%	\$2,183.02	\$3,014.06
Retirement 18.5%	\$6,290.64	\$8,685.39
Health/Life/FTE	\$7,225.00	\$7,225.00
Worker Com/FTE	\$1,393.00	\$1,393.00
Benefits	\$17,091.66	\$20,317.45
Sal & Fringes	\$51,095.09	\$67,265.50
Fringe %	50%	43%

Incremental Salary Adjustments by Position

Salary	EMT to EMT/FF	P to P/FF
New Salary	\$36,300.00	\$50,700.00
Increment over current pay	\$2,296.56	\$3,751.95
% Increase	6.8%	8.0%
Benefits per current budget	51%	43%
Total Wages	\$36,300.00	\$50,700.00
Fringes	\$18,513.00	\$21,801.00
Wages+Fringes	\$54,813.00	\$72,501.00
Increment for current employees becoming cross-trained		
Wage increment	\$2,296.56	\$3,751.95
FICA Increment	\$143.31	\$234.12
Retirement	\$6,715.50	\$9,379.50
Health/Life	\$-	\$-
Worker's Comp	\$-	\$-
Increment for current	\$9,155.37	\$13,365.58

Proportional Funding for Fire Services

Budget	Allocation from Fire Fees	Limit or Fire Fee Target	Change from Current Funding of \$1.6 mm
\$6,500,000	15%	\$975,000	\$625,000
\$6,500,000	20%	\$1,300,000	\$300,000
\$6,500,000	25%	\$1,625,000	-\$25,000
\$6,500,000	30%	\$1,950,000	-\$350,000

Example of Countywide Ordinance

Fire District	Unimproved & APL Lot	Vacant Lot or Fraction	Improved Parcel	Residential Dwelling	Commercial Structure	Rental MH Park
Desoto	6,733			3,113	375	892
Highlands Lakes	5,602	12,431		4,758	208	359
Highlands Park		6,676		1,012	77	285
Lake Placid		2,788		4,090	444	672
Leisure Lakes	8,962	1,719		3,322	37	52
Lorida	3,305		3,017			
Placid Lakes	6,596			2,262	59	-
Sun 'N Lakes*				9,240	128	
Venus	867			526	73	-
West Sebring		19,542		14,296	423	3,493
Total	32,065	43,156	3,017	42,619	1,824	5,753
Suggested Rates	\$5.00	\$3.00	\$20.00	\$22.50	\$150.00	\$17.50
Revenue	\$160,323	\$129,468	\$60,340	\$958,928	\$273,600	\$100,678

District	Un-imp Lot	APL Unimp Lot	Vacant Lot or Fraction	Improved Parcel	Resid. Dwelling	Comm. Structure	Rental MH Park
Desoto	\$5				\$25	\$150	\$20
Highlands Lakes	\$5	\$2.50			\$25	\$150	\$20
Highlands Park					\$20	\$150	\$15
Lake Placid			\$3		\$20	\$100	\$15
Leisure Lakes	\$5		\$3		\$25	\$150	\$20
Lorida	\$5			\$20.00			
Placid Lakes	\$5				\$25	\$150	\$20
Sun'n Lakes	\$20				\$20	\$150	\$20
Venus					\$25	\$150	\$15
West Sebring	\$5				\$25	\$150	\$15
Suggested Rates	\$5	\$5	\$3	\$20	\$22.50	\$150	\$17.50

Variability in Costs

PT Firefighters	Salary, other salaries, OT for 2	FICA Retirement, Insurance, Worker comp for 2
West Sebring	\$48,960	\$31,285
Lake Placid	\$49,460	\$32,094
Desoto	\$64,552	\$37,475
Highlands Lakes	\$69,628	\$39,283
Totals	\$232,600	\$140,137

Total Existing Costs of \$372,737

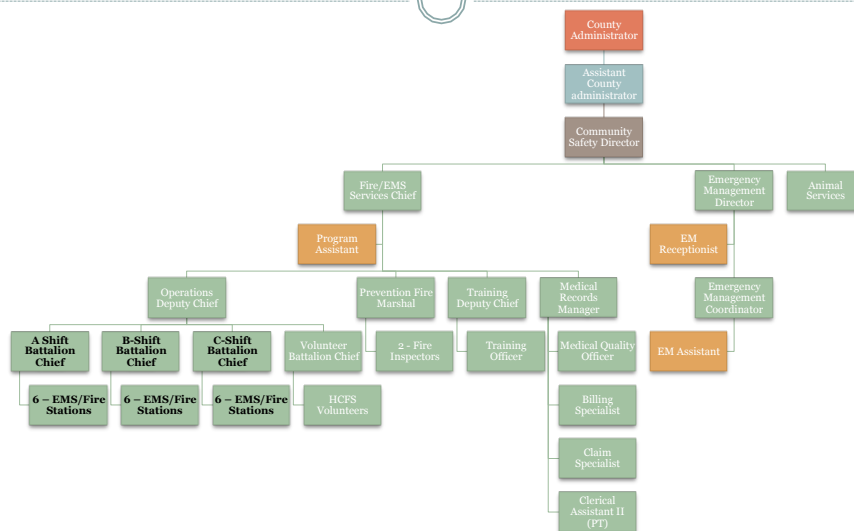
Organizational Structure

PARTIAL CONSOLIDATION

Consolidated Org Chart – 10 min

- **Consolidate directors to Fire/EMS Services Chief**
 - Has four direct reports
- **Maintains medical records division**
 - Place Medical Quality Officer under Medical Records
 - Identifies needs and coordinates any remediation through Shift Battalions
- **Establishes Fire/EMS Battalions**
- **Establish Volunteer Battalion Chief**
 - Part time or strictly volunteer
 - Representation for volunteer districts on command staff
 - Keeps districts under supervision of Operations Chief

Consolidated Org Chart – 10min



Options for Consolidation

PARTIAL AND FULL CONSOLIDATION OF EMS AND FIRE SERVICES

Improved Services

- **Maintains current EMS response times and improves service capacity**
 - Increases from 8 ambulance to 10
- **Improves fire service delivery system**
 - Improves response time by approximately 6 minutes
 - Provides for high system reliability
 - Dedicated staff for initial response, fire attack, and occupant rescue
 - Unified delivery system for commensurate service across community

Improved Services

- Provides for enhanced control and oversight of system costs for long-term sustainability
 - Reduces capital liabilities from 22 fixed facilities to 6
 - Reduces apparatus and equipment liabilities from over 40 major apparatus by 50%
 - By cross-staffing equipment with dual trained personnel, County can utilize ordinance to cover approximately 30% of the system costs
 - ✦ Method is more resilient to changes in assessed value
- Overall, reduces county's exposure

Recommendations for Implementation

CONSOLIDATION OF EMS AND FIRE SERVICES

Implementation Strategies

- Set implementation date 3 years from approval
- Provides sufficient time for EMS personnel that do not wish to become firefighters to seek other employment
 - County can assist in acquiring placement
- Provides sufficient time to train existing personnel to Firefighter 2 Certification level with Florida Bureau of Fire Standards and Training

Implementation Strategies

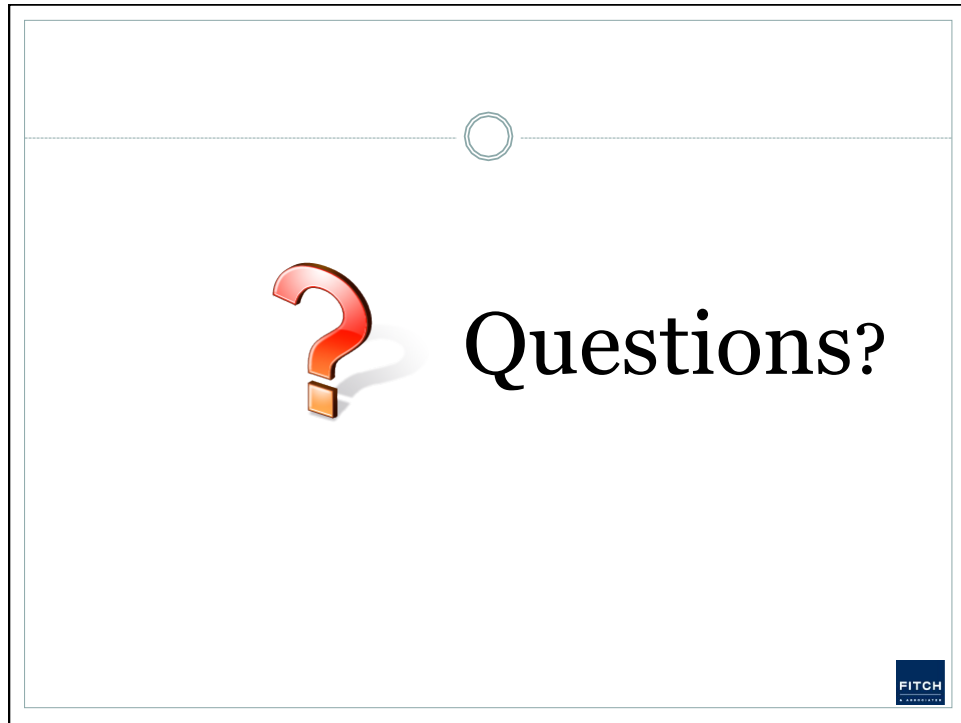
- Affords sufficient time for capital projects necessary to support the new structure
 - Facilities and Apparatus
- Affords sufficient time for volunteer firefighters to obtain medical training for eligibility with employment
 - Consider preference in hiring from current volunteer pool
- Establish management team early in the process

Implementation – Partial Consolidation

- **Maintain the current fire departments and their funding independent of the new consolidated organization**
 - Anticipate that volunteerism may decline once the system is implemented
 - The new system may not need the full expense of current services
- **Fund the new system with general fund revenue**

Implementation – Full Consolidation

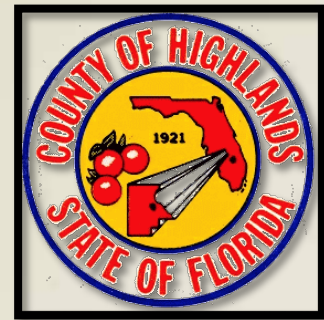
- **Transition from the fire districts and implement the countywide ordinance for fire revenues**
 - Typically can fund 30% of the system costs from fire revenues
 - With current fund balances may be able to have one year operating costs for volunteer fire departments
- **Mirroring the existing aggregate revenue, the new system would generate approximately \$1.6 million**
 - Utilized to cover the additional \$1.1 million in personnel costs
 - Provide capacity of approximately \$500,000 to fund new position recommended in the organizational chart and costs of desired volunteer forces



March 2016

Fire and EMS Needs Assessment

Data Analysis Report



Highlands County, Florida

Prepared by:



FITCH & ASSOCIATES, LLC

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CONSULTANT REPORT

HIGHLANDS COUNTY FIRE & EMS NEEDS ASSESSMENT

TABLE OF CONTENTS

METHODOLOGY	1
COMMUNITY RESPONSE HISTORY	3
RESPONSE TIME CONTINUUM	7
<i>Fire</i>	7
<i>EMS</i>	8
HIGHLANDS COUNTY EMS	14
<i>Overlapped Call Analysis</i>	28
TEN VOLUNTEER FIRE DEPARTMENTS	30
GEOSPATIAL ANALYSES	47
EMERGENCY MEDICAL SERVICES	47
FIRE SERVICES	50
CONSOLIDATED EMS AND FIRE SERVICES	54
STAKEHOLDER INPUT - DRAFT REPORT FEEDBACK	56
NO-SHOW RESPONSES	59
VALIDATION OF THE BASELINE DATA	59
RESPONSES TO SPECIFIC QUESTIONS OR CLARIFICATIONS	60

LIST of FIGURES

FIGURE 1: PERCENTAGE OF TOTAL INCIDENTS DISPATCHED BY PROGRAM	4
FIGURE 2: EXAMPLE OF TRADITIONAL TIME TEMPERATURE CURVE	7
FIGURE 3: VENTILATION CONTROLLED TIME TEMPERATURE CURVE	8
FIGURE 4: CASCADE OF EVENTS FOR SUDDEN CARDIAC ARREST WITH SHOCKABLE RHYTHM	9
FIGURE 5: AVERAGE DISPATCH, TURNOUT AND TRAVEL TIME BY CALL CATEGORY	11
FIGURE 6: AVERAGE DISPATCH, TURNOUT AND TRAVEL TIME BY AGENCY	13
FIGURE 7: COUNTY EMS: AVERAGE CALLS PER MONTH OF 2014	15
FIGURE 8: COUNTY EMS: AVERAGE CALLS BY DAY OF WEEK FOR 2014	16
FIGURE 9: COUNTY EMS: AVERAGE CALLS PER DAY BY HOUR OF DAY IN 2014	18
FIGURE 10: COUNTY EMS: ANNUAL TOTAL RESPONSES BY UNIT	20
FIGURE 11: COUNTY EMS: UNIT HOUR UTILIZATION BY UNIT	22
FIGURE 12: COUNTY EMS: AVERAGE DISPATCH, TURNOUT AND TRAVEL TIME BY EMS ZONE	23
FIGURE 13: COUNTY EMS: 90TH PERCENTILE OF TURNOUT, TRAVEL AND RESPONSE TIMES BY EMS ZONE	24
FIGURE 14: COUNTY EMS: AVERAGE DISPATCH, TURNOUT AND TRAVEL TIME BY UNIT	25
FIGURE 15: COUNTY EMS: 90TH PERCENTILE OF TURNOUT, TRAVEL AND RESPONSE TIMES BY UNIT	26
FIGURE 16: 90TH PERCENTILE TURNOUT TIME BY UNIT IN THE ASCENDING ORDER	27
FIGURE 17: 90TH PERCENTILE TRAVEL TIME PERFORMANCE BY UNIT IN THE ASCENDING ORDER	27
FIGURE 18: 90TH PERCENTILE TURNOUT AND TRAVEL PERFORMANCE BY UNIT IN THE ASCENDING ORDER	28
FIGURE 19: COUNTY EMS: PROBABILITY OF OVERLAPPED CALLS OCCUR BY EMS ZONE	29

FIGURE 20: 10 VOLUNTEER FIRE DEPARTMENTS: AVERAGE CALLS PER MONTH OF 2014	32
FIGURE 21: 10 VOLUNTEER FIRE DEPARTMENTS: AVERAGE CALLS BY DAY OF WEEK FOR 2014	33
FIGURE 22: 10 VOLUNTEER FIRE DEPARTMENTS: AVERAGE CALLS PER DAY BY HOUR OF DAY IN 2014	35
FIGURE 23: 10 VOLUNTEER FIRE DEPARTMENTS: ANNUAL TOTAL RESPONSES BY AGENCY	36
FIGURE 24: 10 VOLUNTEER FIRE DEPARTMENTS: AVERAGE DISPATCH, TURNOUT AND TRAVEL TIME BY CALL CATEGORY	40
FIGURE 25: 10 VOLUNTEER FIRE DEPARTMENTS: 90TH PERCENTILE OF TURNOUT, TRAVEL AND RESPONSE TIMES BY CALL CATEGORY	41
FIGURE 26: 10 VOLUNTEER FIRE DEPARTMENTS: AVERAGE DISPATCH, TURNOUT AND TRAVEL TIME BY AGENCY	42
FIGURE 27: 10 VOLUNTEER FIRE DEPARTMENTS: 90TH PERCENTILE OF TURNOUT, TRAVEL AND RESPONSE TIMES BY AGENCY	43
FIGURE 28: 10 VOLUNTEER FIRE DEPARTMENTS: 90TH PERCENTILE TURNOUT TIME BY AGENCY IN THE ASCENDING ORDER	44
FIGURE 29: 10 VOLUNTEER FIRE DEPARTMENTS: 90TH PERCENTILE TRAVEL TIME PERFORMANCE BY AGENCY IN THE ASCENDING ORDER	44
FIGURE 30: 10 VOLUNTEER FIRE DEPARTMENTS: 90TH PERCENTILE TURNOUT AND TRAVEL PERFORMANCE BY AGENCY IN THE ASCENDING ORDER	45
FIGURE 31: EMS INCIDENT HEAT MAP (2012-2014)	48
FIGURE 32: OPTIMIZED STATION LOCATIONS FOR 10-MINUTE TRAVEL TIME TO EMS INCIDENTS	49
FIGURE 33: FIRE RELATED INCIDENT HEAT MAP (2012-2014)	51
FIGURE 34: EXISTING FIRE STATION LOCATIONS TO ACHIEVE A 10-MINUTE TRAVEL TIME FOR FIRE RELATED INCIDENTS	52
FIGURE 35: OPTIMIZED FIRE STATION LOCATIONS TO ACHIEVE 10-MINUTE TRAVEL TIME	53
FIGURE 36: FIRE AND EMS STATION LOCATIONS TO ACHIEVE A 10-MINUTE TRAVEL TIME TO ALL CALLS	55
FIGURE 37: AVERAGE CONSOLIDATED SYSTEM DEMAND BY HOUR OF DAY	65
FIGURE 38: CONSOLIDATED SYSTEM DEMAND - WEEK AT A GLANCE	66

LIST of TABLES

TABLE 1: NUMBER OF INCIDENTS DISPATCHED BY CATEGORY	3
TABLE 2: NUMBER OF INCIDENTS DISPATCHED BY CATEGORY AND RESPONDING AGENCIES	4
TABLE 3: NUMBER OF DISPATCHED INCIDENTS BY AGENCY	5
TABLE 4: NUMBER OF INCIDENTS REQUESTED BY CITY AND SOURCE	5
TABLE 5: NUMBER OF CALLS, NUMBER OF RESPONSES, AND TOTAL BUSY TIME BY CALL CATEGORY	6
TABLE 6: NUMBER OF CALLS, NUMBER OF RESPONSES, AND TOTAL BUSY TIME BY CALL CATEGORY AND RESPONDING AGENCY	6
TABLE 7: AVERAGE DISPATCH, TURNOUT AND TRAVEL TIME BY CALL CATEGORY	11
TABLE 8: 90TH PERCENTILE DISPATCH, TURNOUT AND TRAVEL TIME BY CALL CATEGORY	12
TABLE 9: AVERAGE DISPATCH, TURNOUT AND TRAVEL TIME BY AGENCY	12
TABLE 10: 90TH PERCENTILE DISPATCH, TURNOUT AND TRAVEL TIME BY AGENCY	13
TABLE 11: COUNTY EMS: NUMBER OF CALLS, NUMBER OF RESPONSES, AND TOTAL BUSY TIME BY EMS ZONE	14
TABLE 12: COUNTY EMS: TOTAL CALLS PER MONTH	15
TABLE 13: COUNTY EMS: TOTAL CALLS BY DAY OF WEEK FOR 2014	16
TABLE 14: COUNTY EMS: TOTAL AND AVERAGE CALLS BY HOUR OF DAY FOR 2014	17
TABLE 15: COUNTY EMS: TOTAL RESPONDED CALLS BY EMS ZONE AND CATEGORY	19
TABLE 16: COUNTY EMS: WORKLOAD BY UNIT	20
TABLE 17: COUNTY EMS: AVERAGE DISPATCH, TURNOUT AND TRAVEL TIME BY EMS ZONE	23
TABLE 18: COUNTY EMS: 90TH PERCENTILE DISPATCH, TURNOUT AND TRAVEL TIME BY EMS ZONE	23
TABLE 19: COUNTY EMS: AVERAGE DISPATCH, TURNOUT AND TRAVEL TIME BY UNIT	25
TABLE 20: COUNTY EMS: 90TH PERCENTILE DISPATCH, TURNOUT, TRAVEL AND RESPONSE TIME BY UNIT	26
TABLE 21: COUNTY EMS: OVERLAPPED CALLS BY EMS ZONE	29

TABLE 22: 10 VOLUNTEER FIRE DEPARTMENTS: NUMBER OF CALLS, NUMBER OF RESPONSES, AND TOTAL BUSY TIME BY CALL CATEGORY	30
TABLE 23: 10 VOLUNTEER FIRE DEPARTMENTS: NUMBER OF CALLS BY RESPONDING AGENCIES	31
TABLE 24: 10 VOLUNTEER FIRE DEPARTMENTS: NUMBER OF DISPATCHED INCIDENTS BY AGENCY	31
TABLE 25: 10 VOLUNTEER FIRE DEPARTMENTS: TOTAL CALLS PER MONTH	32
TABLE 26: 10 VOLUNTEER FIRE DEPARTMENTS: TOTAL CALLS BY DAY OF WEEK FOR 2014	33
TABLE 27: 10 VOLUNTEER FIRE DEPARTMENTS: TOTAL AND AVERAGE CALLS BY HOUR OF DAY FOR 2014	34
TABLE 28: 10 VOLUNTEER FIRE DEPARTMENTS: WORKLOAD BY AGENCY	36
TABLE 29: 10 VOLUNTEER FIRE DEPARTMENTS: WORKLOAD BY UNIT	37
TABLE 30: 10 VOLUNTEER FIRE DEPARTMENTS: AVERAGE DISPATCH, TURNOUT AND TRAVEL TIME BY CALL CATEGORY	39
TABLE 31: 10 VOLUNTEER FIRE DEPARTMENTS: 90TH PERCENTILE DISPATCH, TURNOUT AND TRAVEL TIME BY CALL CATEGORY	40
TABLE 32: 10 VOLUNTEER FIRE DEPARTMENTS: AVERAGE DISPATCH, TURNOUT AND TRAVEL TIME BY AGENCY	42
TABLE 33: 10 VOLUNTEER FIRE DEPARTMENTS: 90TH PERCENTILE DISPATCH, TURNOUT AND TRAVEL TIME BY AGENCY	43
TABLE 34: DCFD, HLFD AND WSFD: MEAN AND 90TH PERCENTILE TURNOUT AND TRAVEL TIME	46
TABLE 35: MEAN AND 90TH PERCENTILE TURNOUT AND TRAVEL TIME BY AGENCY	46
TABLE 36: MEAN AND 90TH PERCENTILE TURNOUT AND TRAVEL TIME BY AGENCY FROM 1700 TO 0800	46
TABLE 37: SYSTEM DESIGN COMPARISONS FOR ALTERNATIVE TRAVEL TIME PERFORMANCE	47
TABLE 38: MARGINAL UTILITY OF EXISTING FIRE STATIONS - 10-MINUTE TRAVEL TIME	50
TABLE 39: MARGINAL UTILITY OF EXISTING FIRE AND EMS STATIONS - 10-MINUTE TRAVEL TIME	54
TABLE 40: AGENCIES THAT PROVIDED DRAFT REPORT FEEDBACK	56
TABLE 41: GENERALLY POSITIVE OR SUPPORTIVE FEEDBACK	57
TABLE 42: CONSTRUCTIVE CRITICISM AND/OR DISSENTING OPINIONS	58
TABLE 43: PERCENTAGE OF AGREEMENT BETWEEN CAD AND RMS DATA	60

METHODOLOGY

We collected three years of CAD data from the county Sheriff Office's dispatch center. In this report, we primarily focused our analysis on the 2014 calendar year. The calls we included are either responded to by the County EMS or any of the 10 volunteer fire departments. The 10 volunteer fire departments are:

- Desoto City Volunteer Fire Department (DCFD),
- Highlands Lakes Volunteer Fire Department (HLFD),
- Highlands Park Volunteer Fire Department (HPFD),
- Leisure Lakes Volunteer Fire Department (LLFD),
- Lorida Volunteer Fire Department (LOFD),
- Lake Placid Volunteer Fire Department (PLFD),
- Placid Lakes Volunteer Fire Department (PLFD),
- Sun N Lakes Volunteer Fire Department (SLFD),
- Venus Volunteer Fire Department (VEFD),
- West Sebring Volunteer Fire Department (WSFD).

In this report, we utilized two distinct measures of call volume and workload. First, is the number of requests for service that are defined as either “dispatches” or “calls”. Dispatches/calls are the number of times a distinct incident was created involving either EMS or any of the 10 volunteer fire departments. Conversely, “responses” are the number of times that an individual unit (or units) responded to a call. Responses will be utilized on all Unit and Station level analyses, which account for all elements of workload and performance. Calls have been categorized as EMS, MVC, Structure fire, Brush fire, Vehicle fire, Fire alarm, Fire other, HazMat, PD matter and Public service respectively. The report is structured into three sections. The first section discusses the combined total emergency requests by call category, total workload and overall response time performance. The second section focuses on the County EMS agency's performance. The third section discusses the 10 volunteer fire departments' performance.

We would like to discuss the major data issues and assumptions we used in this report.

- The dispatch center generates two incidents with two different incident identifiers if the County EMS agency and any of the volunteer fire department are both dispatched. In this report, we identified duplicated incidents if they have identical address, and their time stamps are within 5 minutes apart. Those duplicated incidents are only counted once and all unit level responses are consolidated.
- CAD only tracks time stamps for the primary responding units. If a call was responded to by two or more units, all responding units have identical unit dispatch time, unit enroute time, unit on scene time and unit clear time. This presents two issues: i) the unit level workload might not be completely accurate; ii) we can't analyze response time performances for the 2nd and 3rd arriving units.
 - CAD clears the unit when ambulance arrives at transportation destination. However, this does not include the time for the ambulance to turn over the patient at transportation

destination and the time for the ambulance to travel back to station. Highlands County EMS tracked their unit transports internally. Historically, about 70% requests involved transporting patients. We made assumptions to estimate ambulance's total workload and unit utilizations.

- CAD does not track individual volunteer vehicles.
- The dispatch center and CAD does capture the previously mentioned items by the dispatcher entering call notes into a text or narrative section on each call. Therefore, if there is a specific inquiry on any single incident, a call history is available to determine multi-unit time stamps, transport dispositions, cancellations, etc. However, because it isn't a specific data element in the CAD, aggregate analyses may require an incident-by-incident review while creating a manual database to analyze the information.
- When volunteer fire departments are dispatched, the dispatch center first assigns the agency ID as dispatched unit, later on actual units are added. In this report, in cases actual units exist as responding units, the placeholder agencies IDs are excluded in workload analysis. Occasionally, only volunteer fire department agencies IDs are the responding units, and they are reported in workload analysis.

COMMUNITY RESPONSE HISTORY

In the 2014 fiscal year, County EMS and volunteer fire departments together have responded to a total of 15,141 requests for service, or dispatches. 80 percent of the requests were from 911. EMS and MVC service requests totaled 13,294, accounting for 87.8% of the total number of incidents.

Structure, brush and vehicle fire totaled 356, which accounted for 1% of the dispatched incidents. Of all incidents, the volunteer fire departments have responded to 1,725 incidents including: i) a total of 845 incidents to which volunteer fire departments have independently responded, and ii) a total of 880 incidents to which volunteer fire departments and the County EMS have responded together.

The number of individual unit responses will be more reflective of total workload since 18 percent of the calls resulted in multiple units dispatched. As summarized in Table 5, all units in EMS and volunteer fire departments combined made 19,868 responses, and were busy on emergency calls 10,551 hours. On average, each response lasted 32 minutes from dispatched to clear. County EMS units made 16,648 responses (83.8 percent), and all volunteer fire departments' units combined made 3,220 responses (16.2 percent).

Table 1: Number of Incidents Dispatched by Category

Call Category	Number of Calls	Calls per Day	Call Percentage
EMS	12,551	34.4	82.9
MVC	743	2.0	4.9
Structure fire	119	0.3	0.8
Brush fire	178	0.5	1.2
Vehicle fire	59	0.2	0.4
Fire alarm	178	0.5	1.2
Fire other	288	0.8	1.9
HazMat	9	0.0	0.1
PD matter	859	2.4	5.7
Public service	157	0.4	1.0
Total	15,141	41.5	100.0

Figure 1: Percentage of Total Incidents Dispatched by Program

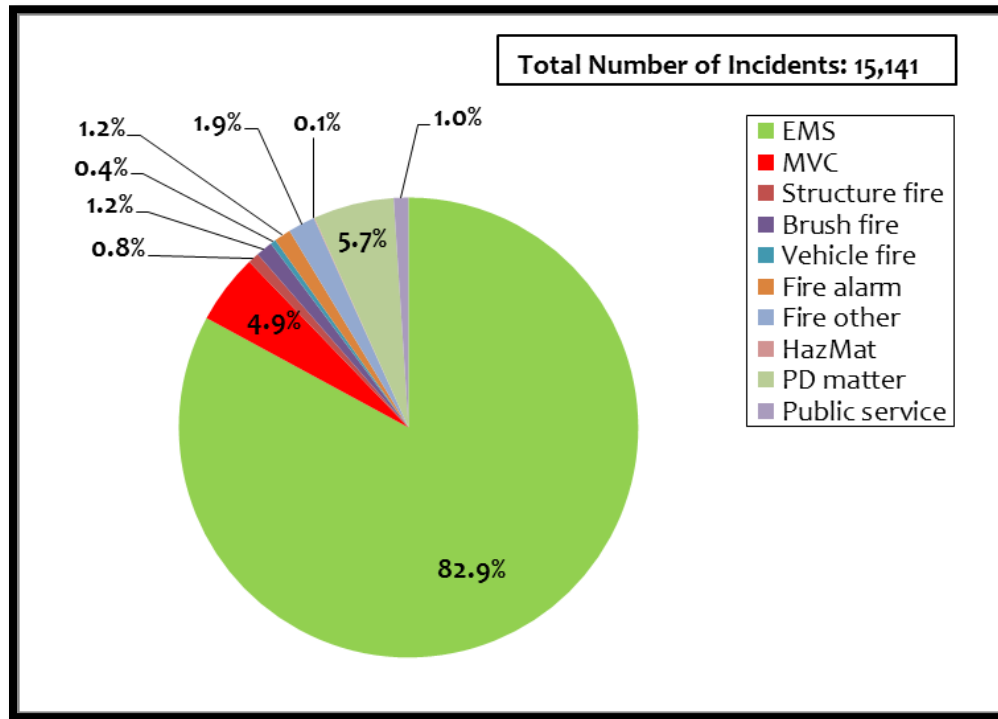


Table 2: Number of Incidents Dispatched by Category and Responding Agencies

Call Category	EMS and Volunteer Fire Dept.	EMS	Volunteer Fire Department	Total
EMS	472	12,011	68	12,551
MVC	277	435	31	743
Structure fire	63	38	18	119
Brush fire	0	3	175	178
Vehicle fire	4	4	51	59
Fire alarm	2	15	161	178
Fire other	27	28	233	288
HazMat	1	1	7	9
PD matter	26	793	40	859
Public service	8	88	61	157
Total	880	13,416	845	15,141

Table 3: Number of Dispatched Incidents by Agency

Staffing	Agency Name	Dispatched
Full Time	Highlands County EMS	14,845
Volunteer Fire Departments	Desoto City Fire Department	447
	Highlands Lakes Fire Department	398
	Highlands Park Fire Department	102
	Leisure Lakes Fire Department	161
	Lorida Fire Department	227
	Lake Placid Fire Department	337
	Placid Lakes Fire Department	132
	Sun N Lakes Fire Department	153
	Venus Fire Department	33
	West Sebring Fire Department	910

Table 4: Number of Incidents Requested by City and Source

City	Number of Calls			Calls per Day
	911	Other	Total	
Avon Park	2,495	607	3,102	8.5
Lake Placid	2,556	563	3,119	8.5
Lorida	177	29	206	0.6
Okeechobee	69	26	95	0.3
Sebring	6,669	1,762	8,431	23.1
Venus	54	19	73	0.2
Missing	93	22	115	0.3
Total	12,113	3,028	15,141	41.5
Percentage	80.0	20.0	100.0	NA

Table 5: Number of Calls, Number of Responses, and Total Busy Time by Call Category

Program	Number of Calls	Number of Responses	Average Responses per Call	Total Busy Hours	Average Busy Minutes per Response
EMS	12,551	14,205	1.1	6,664	28.1
MVC	743	2,296	3.1	1,143	29.9
Structure fire	119	471	4.0	689	87.8
Brush fire	178	468	2.6	527	67.5
Vehicle fire	59	117	2.0	153	78.3
Fire alarm	178	456	2.6	189	24.8
Fire other	288	604	2.1	507	50.4
HazMat	9	17	1.9	17	60.1
PD matter	859	1,023	1.2	455	26.7
Public service	157	211	1.3	208	59.2
Total	15,141	19,868	1.3	10,551	31.9

Table 6: Number of Calls, Number of Responses, and Total Busy Time by Call Category and Responding Agency

Call Category	County EMS			10 Volunteer Fire Departments		
	Number of Calls	Number of Responses	Total Busy Hours	Number of Calls	Number of Responses	Total Busy Hours
EMS	12,483	13,597	6,438	540	608	226
MVC	712	1,796	740	308	500	402
Structure fire	101	110	81	81	361	608
Brush fire	3	5	4	175	463	523
Vehicle fire	8	11	7	55	106	145
Fire alarm	17	18	8	163	438	181
Fire other	55	63	41	260	541	466
HazMat	2	3	4	8	14	13
PD matter	819	933	397	66	90	58
Public service	96	112	56	69	99	152
Total	14,296	16,648	7,777	1,725	3,220	2,774

*Note: A total of 880 incidents have both EMS and volunteer units responding.

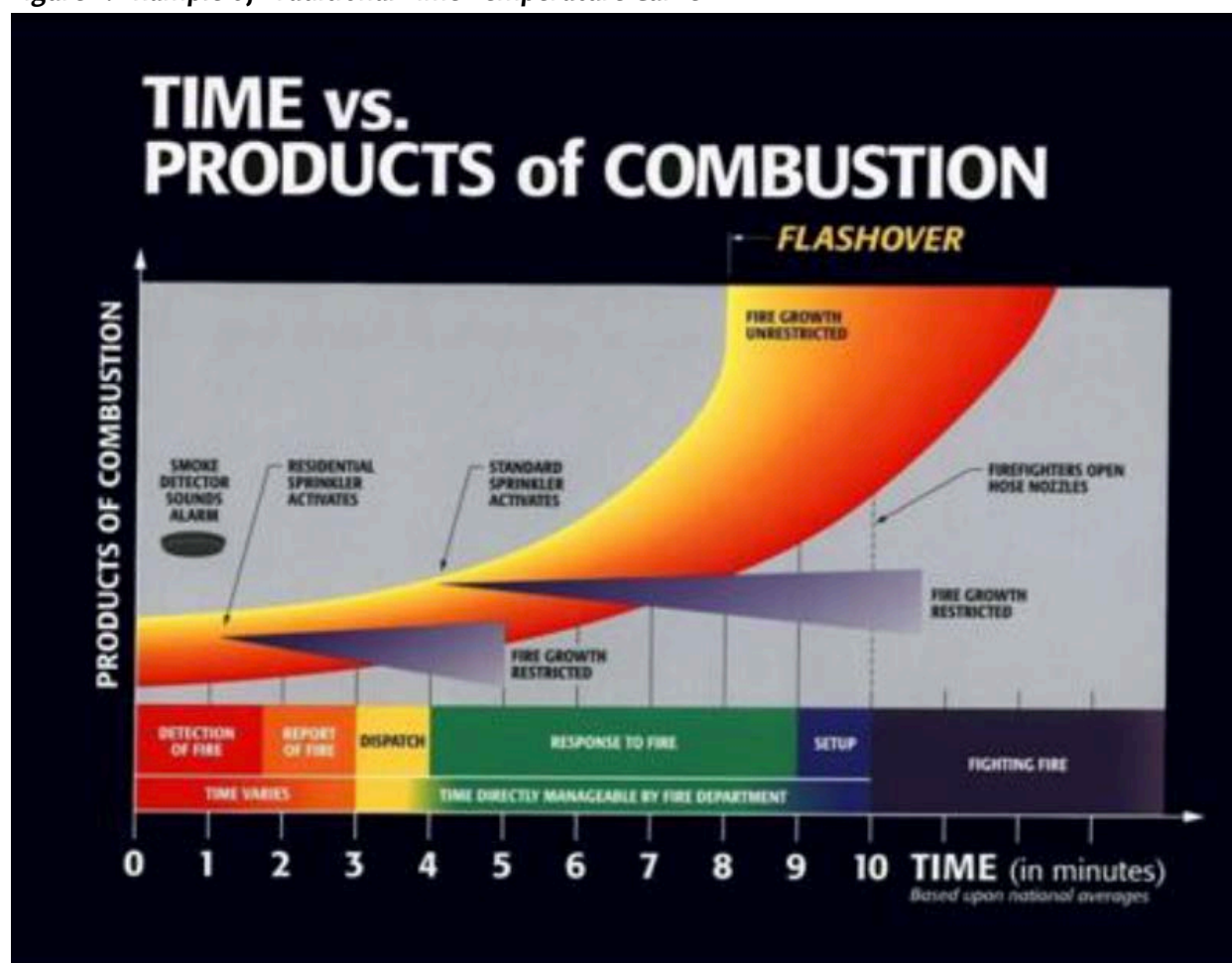
Response Time Continuum

Fire

The number one priority with structural fire incidents is to save lives followed by the minimization of property damage. A direct relationship exists between the timeliness of the response and the survivability of unprotected occupants and property damage. The most identifiable point of fire behavior is Flashover.

Flashover is the point in fire growth where the contents of an entire area, including the smoke, reach their ignition temperature, resulting in a rapid-fire growth rendering the area un-survivable by civilians and untenable for firefighters. Best practices would result in the fire department arriving and attacking the fire prior to the point of flashover. A representation of the traditional time temperature curve and the cascade of events are provided as Figure 2 below.¹

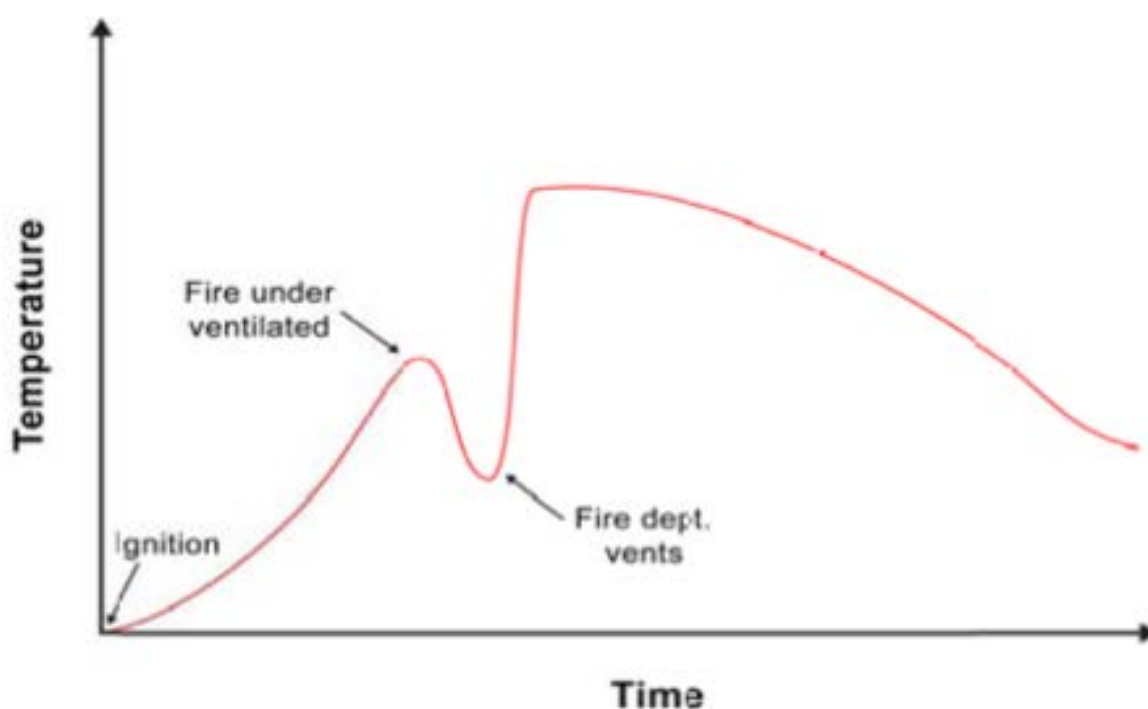
Figure 2: Example of Traditional Time Temperature Curve



¹ Example of Traditional Time Temperature Curve. Retrieved at <http://www.usfa.fema.gov/downloads/pdf/coffee-break/time-vs-products-of-combustion.pdf>

Recent studies by Underwriter's Laboratories (UL) have found that in compartment fires such as structure fires, flashover occurs within 4 minutes in modern fire environment. In addition, the UL research has identified an updated time temperature curve due to fires being ventilation controlled rather than fuel controlled as represented in the traditional time temperature curve. While this ventilation controlled environment continues to provide a high risk to unprotected occupants to smoke and high heat, it does provide some advantage to property conservation efforts as water may be applied to the fire prior to ventilation and the subsequent flashover. An example of UL's ventilation controlled time temperature curve is provided as Figure 3 below.²

Figure 3: Ventilation Controlled Time Temperature Curve



EMS

The effective response to Emergency Medical Service (EMS) incidents also has a direct correlation to the ability to respond within a specified period of time. However, unlike structure fires, responding to EMS incidents introduces considerable variability in the level of clinical acuity. From this perspective, the association of response time and clinical outcome varies depending on the severity of the injury or the illness. Research has demonstrated that the overwhelming majority of requests for EMS services are not time sensitive between 5 minutes and 11 minutes for emergency and 13

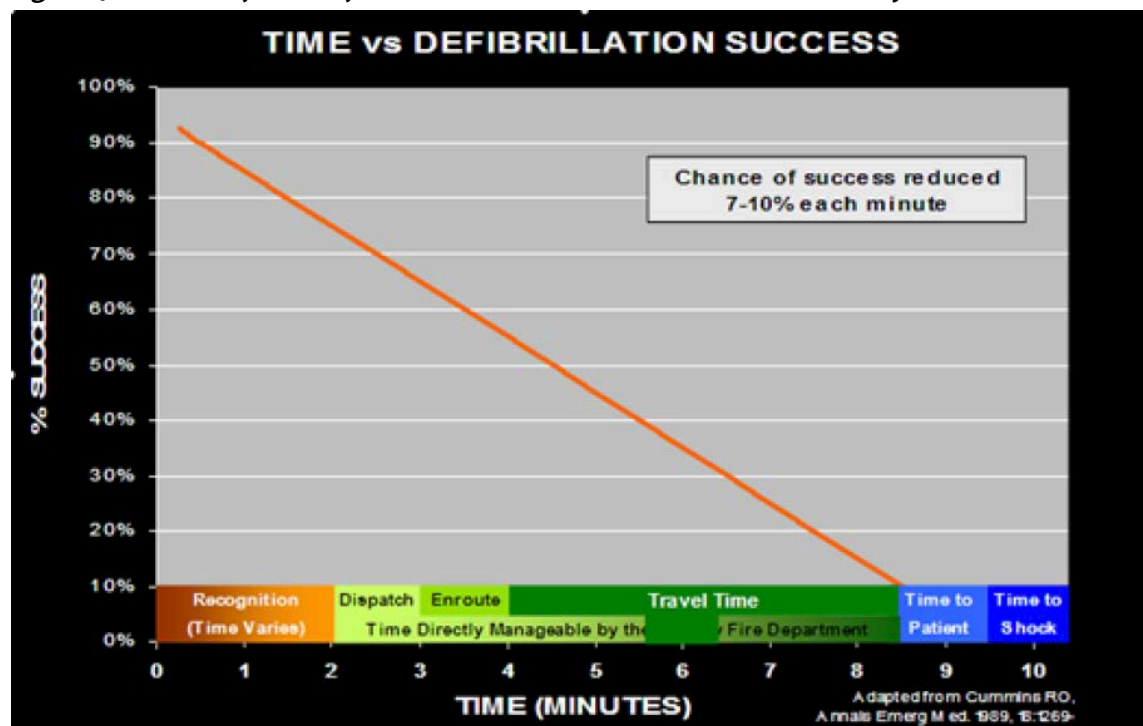
² UL/NIST Ventilation Controlled Time Temperature Curve. Retrieved from http://www.nist.gov/fire/fire_behavior.cfm

minutes for non-emergency responses.³ The 12-minute upper threshold is only the upper limit of the available research and is not a clinically significant time measure, as patients were not found to have a significantly different clinical outcome when the 12-minute threshold was exceeded.⁴

Out of hospital sudden cardiac arrest is the most identifiable and measured incident type for EMS. In an effort to demonstrate the relationship between response time and clinical outcome, a representation of the cascade of events and the time to defibrillation (shock) is presented as Figure 4 below. The American Heart Association (AHA) has determined that brain damage will begin to occur between four and six minutes and become irreversible after 10 minutes without intervention.

Modern sudden cardiac arrest protocols recognize that high quality Cardio-Pulmonary Resuscitation (CPR) at the Basic Life Support (BLS) level is a quality intervention until defibrillation can be delivered in shockable rhythms. Figure 5⁵ below is representative of a sudden cardiac arrest that is presenting in a shockable heart rhythm such as Ventricular Fibrillation (V-Fib) or Ventricular Tachycardia (V-Tach).

Figure 4: Cascade of Events for Sudden Cardiac Arrest with Shockable Rhythm



³ Blackwell, T.H., & Kaufman, J.S. (April 2002). Response time effectiveness: Comparison of response time and survival in an urban emergency medical services system. *Academic Emergency Medicine*, 9(4): 289-295.

⁴ Blackwell, T.H., et al. (Oct-Dec 2009). Lack of association between prehospital response times and patient outcomes. *Prehospital Emergency Care*, 13(4): 444-450.

⁵ Olathe Fire Department. (2012). Adapted from Community Risk and Emergency Services Analysis: Standard of Cover. Olathe, Kansas: Author.

The major body of the report is to discuss turnout time, travel time, and the sum of turnout and travel that best reflects the EMS and volunteer fire departments' performances. Response time is from the call received throughout the unit arrived on scene, which best reflects citizens' experience. The dispatch time performance is also briefly discussed.

Since all responding units to the same call have identical status time stamps, this analysis utilized the primary responding units of all distinct incidents. The mean (average) dispatch time was 66 seconds (one minute and 6 seconds). The mean (average) turnout time was 84 seconds (one minute and 24 seconds), travel time was 342 seconds (five minutes 42 seconds), and turnout and travel time was 426 seconds (seven minutes 6 seconds). Thus, the mean response time experienced by citizens was 493 seconds (eight minutes 13 seconds).

The turnout time for volunteer units should be expected to be longer since volunteer firefighters have to drive to station, dress up, and then turnout. The mean (average) turnout time for EMS agency was 72 seconds (one minute and 12 seconds) and the mean (average) travel time was 342 seconds (five minutes 42 seconds). As expected, the mean (average) turnout time for volunteer fire departments was 246 seconds (four minutes and six seconds) and the mean (average) travel time was 354 seconds (five minutes 54 seconds). The average turnout time for volunteer units was 174 seconds longer (two minutes and 54 seconds).

However, a more conservative and reliable measure of performance is the fractile or percentile. This measure is more robust, or less influenced by outliers, than measures of central tendency such as the mean. Best practice is to measure at the 90th percentile. In other words, 90% of all performance is captured expecting that 10% of the time the department may experience abnormal conditions that would typically be considered an outlier. For example, if the department were to report an average response time of six minutes, then in a normally distributed set of data, half of the responses would be longer than six minutes and half of the responses would be less than six minutes. The 90th percentile communicates that 9 out of 10 times the department performance is predictable and thus more clearly articulated to policy makers and the community.

The performance for dispatch time at the 90th percentile was 113 seconds (one minute and 53 seconds), turnout time at the 90th percentile was 138 seconds (two minutes and 18 seconds), travel time at the 90th percentile was 602 seconds (10 minutes and 2 seconds), and response time at the 90th percentile was 784 seconds (13 minutes and 4 seconds). Please note that the summation of 90th percentile dispatch time, 90th turnout time and 90th percentile travel time is not the same as 90th percentile response time. The 90th percentile turnout time performance varied significantly by agency. The turnout time at 90th percentile for the EMS agency was 124 seconds (two minutes and four seconds) whereas the turnout time at 90th percentile for volunteer agencies was 530 seconds (eight minutes and 50 seconds). The travel time at 90th percentile for the EMS agency was 598 seconds (nine minutes and 58 seconds), and the travel time at 90th percentile for volunteer agencies was 686 seconds (11 minutes and 26 seconds).

Typically, performance varies across call types or agencies due to a variety of reasons. For example, the turnout time may be longer for fire related calls because the crews have to dress in their personal protective ensemble (bunker gear) prior to leaving the station where as on an EMS incident they do not. Similarly, the larger fire apparatus may require longer response times due to their size and lack of maneuverability. However, data does suggest mean and 90th percentile turnout time for volunteer fire agencies were significantly longer than the County EMS.

Table 7: Average Dispatch, Turnout and Travel Time by Call Category

Call Category	Dispatch Time	Turnout Time	Travel Time	Response Time	Sample Size
EMS	1.1	1.2	5.7	8.1	12,538
MVC	0.9	1.1	4.4	6.4	738
Structure fire	0.8	1.6	5.1	7.4	116
Brush fire	1.2	4.8	7.4	13.3	178
Vehicle fire	1.0	4.6	6.2	11.8	59
Fire alarm	1.5	3.9	6.0	11.4	177
Fire other	1.3	3.9	6.2	11.4	285
HazMat	2.7	4.2	5.3	12.2	9
PD matter	0.9	1.4	6.5	8.8	856
Public service	1.1	2.3	6.5	9.9	154
Total	1.1	1.4	5.7	8.2	15,110

Figure 5: Average Dispatch, Turnout and Travel Time by Call Category

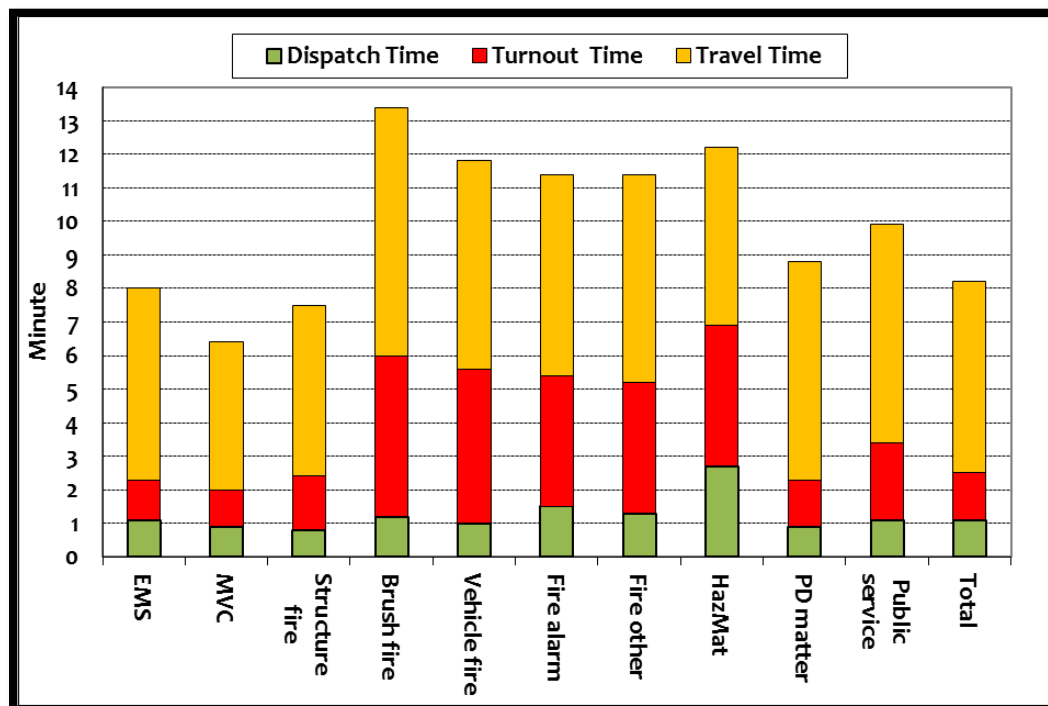


Table 8: 90th Percentile Dispatch, Turnout and Travel Time by Call Category

Program	Dispatch Time	Turnout Time	Travel Time	Response Time	Sample Size
EMS	1.9	2.1	9.9	12.4	12,538
MVC	1.8	2.0	8.2	11.0	738
Structure fire	1.8	4.5	8.7	13.0	116
Brush fire	2.1	9.6	15.7	23.9	178
Vehicle fire	2.0	9.6	12.1	20.0	59
Fire alarm	2.5	8.3	11.1	16.7	177
Fire other	2.4	9.1	11.7	19.4	285
HazMat	8.0	7.7	9.5	22.3	9
PD matter	1.8	2.3	11.5	14.3	856
Public service	2.1	6.8	12.8	19.3	154
Total	1.9	2.3	10.0	13.1	15,110

Table 9: Average Dispatch, Turnout and Travel Time by Agency

Agency	Dispatch Time	Turnout Time	Travel Time	Response Time	Sample Size
Highlands County EMS	1.1	1.2	5.7	6.9	14,086
10 Volunteer FDs Combined	1.2	4.1	5.9	11.2	1,024
Desoto City Fire Department	1.2	3.6	6.1	11.0	135
Highlands Lakes Fire Department	1.0	3.1	5.4	9.5	164
Highlands Park Fire Department	1.1	6.5	5.9	13.5	16
Leisure Lakes Fire Department	1.2	5.1	5.1	11.4	64
Lorida Fire Department	0.9	3.8	10.8	15.5	98
Lake Placid Fire Department	1.3	5.2	4.0	10.5	100
Placid Lakes Fire Department	1.3	7.0	3.4	11.7	49
Sun N Lakes Fire Department	1.3	3.6	5.5	10.4	83
Venus Fire Department	1.1	9.8	5.6	16.6	8
West Sebring Fire Department	1.2	3.9	5.6	10.8	307

Figure 6: Average Dispatch, Turnout and Travel Time by Agency

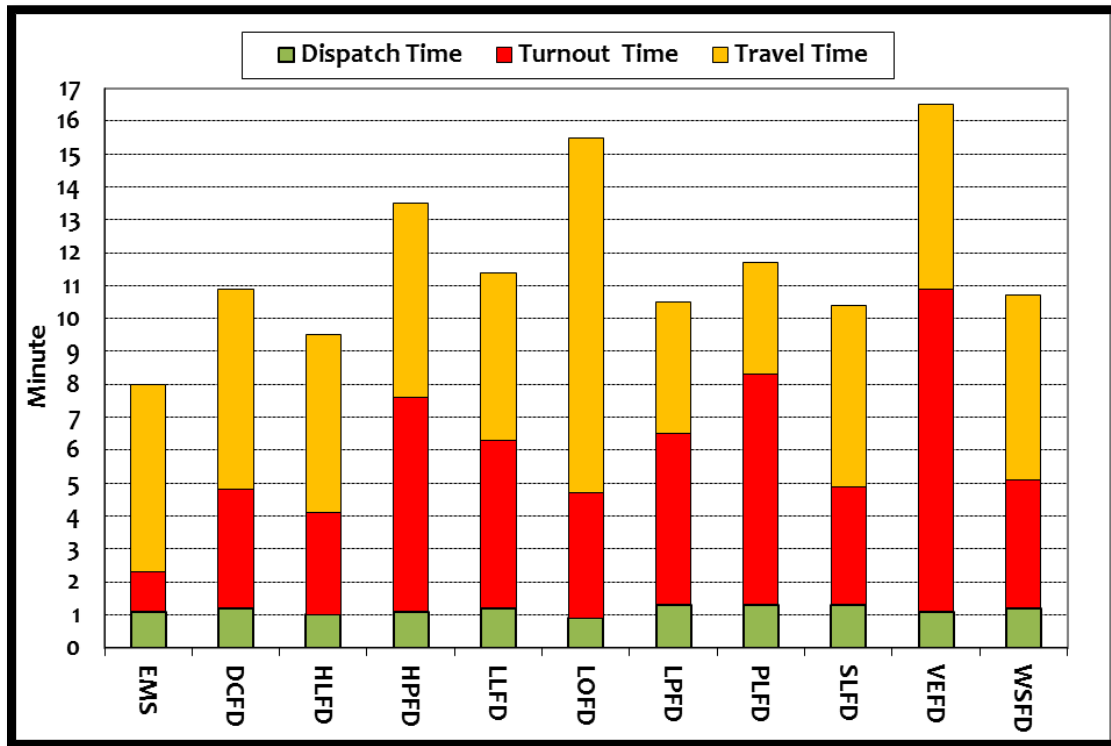


Table 10: 90th Percentile Dispatch, Turnout and Travel Time by Agency

Agency	Dispatch Time	Turnout Time	Travel Time	Response Time	Sample Size
Highlands County EMS	1.9	2.1	10.0	12.5	14,086
10 Volunteer FDs Combined	2.2	8.8	11.4	18.8	1,024
Desoto City Fire Department	2.3	7.9	11.6	17.5	135
Highlands Lakes Fire Department	2.0	7.4	10.5	17.1	164
Highlands Park Fire Department	2.2	17.4	20.9	23.0	16
Leisure Lakes Fire Department	2.1	8.8	10.0	16.8	64
Lorida Fire Department	1.7	12.0	25.2	31.8	98
Lake Placid Fire Department	2.4	10.0	9.6	17.6	100
Placid Lakes Fire Department	2.1	10.4	10.2	17.4	49
Sun N Lakes Fire Department	2.3	7.1	9.9	16.7	83
Venus Fire Department	2.6	13.2	15.3	28.7	8
West Sebring Fire Department	2.4	7.6	10.7	18.8	307

HIGHLANDS COUNTY EMS

The following section focuses on calls, which have been responded to by the county EMS agency. The EMS agency has responded to a total of 14,296 emergency requests, and all units have made a total of 16,648 responses. The County EMS has divided the jurisdiction into six EMS zones. The main EMS zone includes Spring Lake Improvement District and Lorida. For 88 percent of time, one EMS ambulance responded to a call, and 8% of the time, two EMS ambulances responded to a call, and three to six units have responded to a call 4% of the time. Based upon CAD, the average busy minutes per response from dispatch through the unit clear for no transport responses or arrived at transport destination for transport responses was 28 minutes. The total busy time of all County EMS units from dispatch until the unit clear or arrived at transport destination were 7,777 hours.

Table 11: County EMS: Number of Calls, Number of Responses, and Total Busy Time by EMS Zone

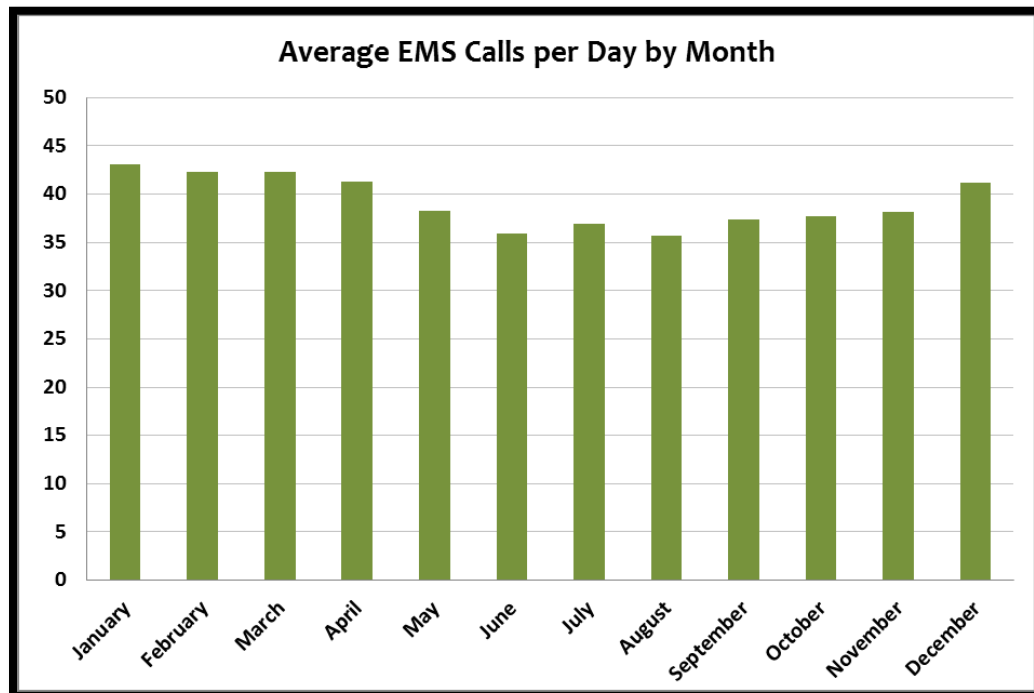
EMS Zone	Number of Calls	Calls per Day	Number of Responses	Average Responses per Call	Total Busy Hours	Average Busy Minutes per Response
Avon Park	2,659	7.3	3,103	1.2	1,430	27.6
Hammock	1,672	4.6	1,982	1.2	927	28.0
Lake Placid	3,014	8.3	3,482	1.2	1,725	29.7
Main	1,988	5.4	2,393	1.2	1,175	29.5
Ridge	2,251	6.2	2,626	1.2	1,195	27.3
Sebring	2,622	7.2	2,958	1.1	1,272	25.8
Other	90	0.2	104	1.2	53	30.7
Total	14,296	39.2	16,648	1.2	7,777	28.0

Temporal analyses were conducted to evaluate patterns in community demands for the EMS agency. These measures examined the frequency of requests for service in 2014 year by month, day of week, and hour of day. Results found that there was variability by month. The three months with most calls responded to by the County EMS were the first three months of the year and in the descending order they were: January (43.1 per day), February (42.4 per day), and March (42.3 per day). The three months with least calls were in the summer and in the ascending order they were: August (35.6 per day), June (35.9 per day), and July (37.0 per day). Results are presented below in Table 12 and Figure 7.

Table 12: County EMS: Total Calls per Month

Month	Number of Calls	Calls per Day	Call Percentage
January	1,335	43.1	9.3
February	1,186	42.4	8.3
March	1,311	42.3	9.2
April	1,239	41.3	8.7
May	1,188	38.3	8.3
June	1,077	35.9	7.5
July	1,146	37.0	8.0
August	1,105	35.6	7.7
September	1,122	37.4	7.8
October	1,169	37.7	8.2
November	1,143	38.1	8.0
December	1,275	41.1	8.9
Total	14,296	39.2	100.0

Figure 7: County EMS: Average Calls per Month of 2014

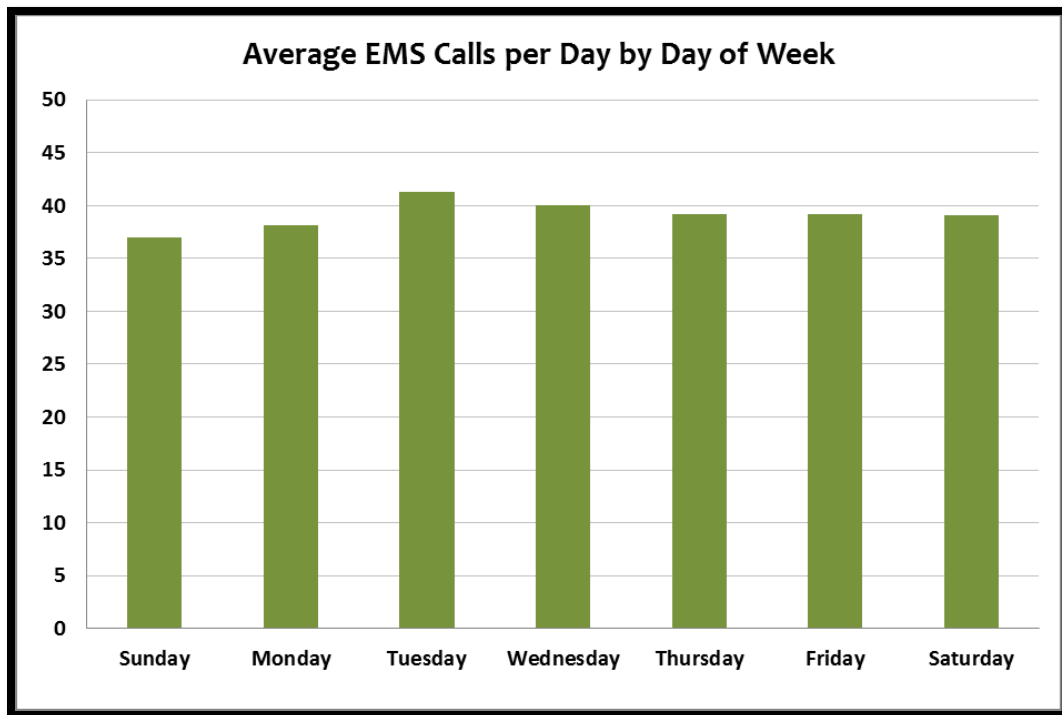


Similar analyses were conducted for calls per day of week. The data revealed that there is little variability in the demand for services by day of week. Sunday was the lowest for the week, averaging 37.0 per day. Tuesday has the highest frequency of requests averaging 41.3 calls per day and 15.0%. Results for this analysis are presented below in Table 13 and Figure 8.

Table 13: County EMS: Total Calls by Day of Week for 2014

Day of Week	Number of Calls	Calls per Day	Call Percentage
Sunday	1,926	37.0	13.5
Monday	1,985	38.2	13.9
Tuesday	2,147	41.3	15.0
Wednesday	2,084	40.1	14.6
Thursday	2,080	39.2	14.5
Friday	2,039	39.2	14.3
Saturday	2,035	39.1	14.2
Total	14,296	39.2	100.0

Figure 8: County EMS: Average Calls by Day of Week for 2014



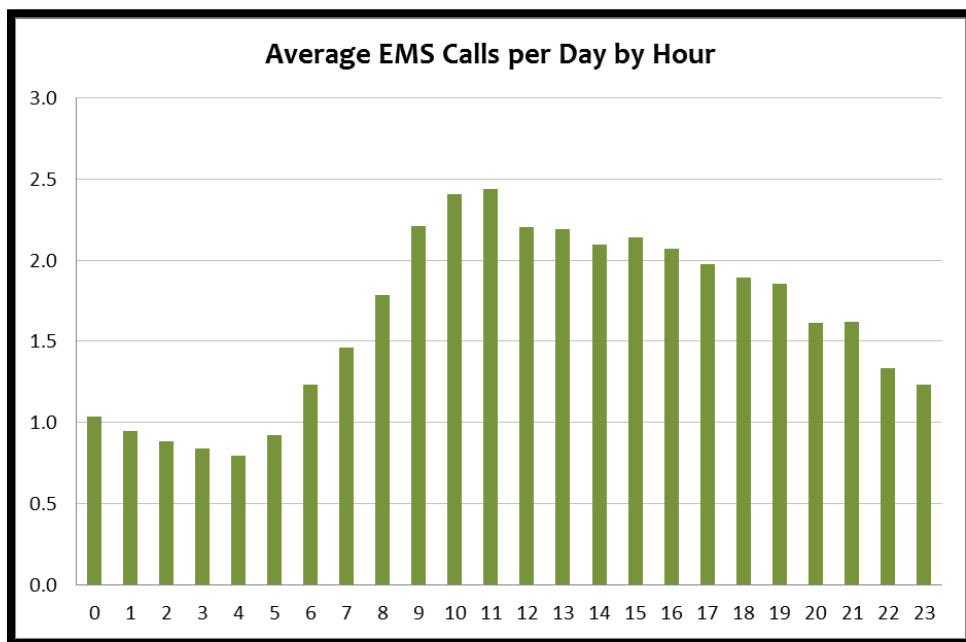
Requests, which were responded to by the County EMS agency, were evaluated by the hour of the day. Considerable variability exists in the time of day that requests for services are received. The hours that include midnight to 0600 have the lowest demands. While the middle of the day has the greatest frequency of calls, specifically the eight hours period from 0900 through 1600 are above 750 calls in a year. The average number of calls per hour in a year is 596. The data illustrates that the busiest times of the day for the EMS agency are between 0900 and 1200. Finally, in an effort to provide a more granular understanding of the community's demand, this temporal analysis included the average number of calls per hour. In other words, when referring to Figure 9 below, the busiest hour is at 1100 with 889 calls during that hour in 2014. The average number of calls per hour is a daily

average for those 889 calls if they were equally distributed. Therefore, the busiest hour per day would be at 1100 with an average hourly call volume of 2.4 calls per hour. Below are the results in Table 14 and Figure 9.

Table 14: County EMS: Total and Average Calls by Hour of Day for 2014

Hour of Day	Number of Calls	Calls per Day	Call Percentage
0	377	1.0	2.6
1	345	0.9	2.4
2	322	0.9	2.3
3	306	0.8	2.1
4	290	0.8	2.0
5	337	0.9	2.4
6	450	1.2	3.1
7	534	1.5	3.7
8	652	1.8	4.6
9	806	2.2	5.6
10	878	2.4	6.1
11	889	2.4	6.2
12	805	2.2	5.6
13	799	2.2	5.6
14	766	2.1	5.4
15	782	2.1	5.5
16	756	2.1	5.3
17	721	2.0	5.0
18	690	1.9	4.8
19	676	1.9	4.7
20	589	1.6	4.1
21	591	1.6	4.1
22	486	1.3	3.4
23	449	1.2	3.1
Total	14,296	39.2	100.0

Figure 9: County EMS: Average Calls per Day by Hour of Day in 2014



EMS was the most frequent community demand (averaging at 34.2 requests per day), followed by PD matter requests (averaging 2.2 requests per day), and MVC (averaging at 2.0 requests per day). The EMS agency also responded to a total of 112 structure, brush and vehicle fires.

The top three demand zones in the descending order are: Lake Placid (21.1%), Avon Park (18.6%), and Sebring (18.3). Lake Placid averaged 8.3 requests per day, Avon Park averaged 7.3 requests per day and Sebring averaged 7.2 requests per day. The EMS zone of Hammock has the least demand, which accounted for 11.7% of the total and averaged 4.6 requests per day.

Table 15: County EMS: Total Responded Calls by EMS Zone and Category

Call Category	Avon Park	Hammock	Lake Placid	Main	Ridge	Sebring	Other	Total
EMS	2,277	1,457	2,669	1,712	1,992	2,309	67	12,483
MVC	159	109	141	102	116	77	8	712
Structure fire	21	11	19	19	12	16	3	101
Brush fire	0	0	0	2	1	0	0	3
Vehicle fire	0	0	4	2	2	0	0	8
Fire alarm	2	5	3	3	2	2	0	17
Fire other	14	7	5	7	12	10	0	55
HazMat	0	0	1	1	0	0	0	2
PD matter	170	69	158	118	104	190	10	819
Public service	16	14	14	22	10	18	2	96
Total	2,659	1,672	3,014	1,988	2,251	2,622	90	14,296
Calls per Day	7.3	4.6	8.3	5.4	6.2	7.2	0.2	39.2
Percentage of Total	18.6%	11.7%	21.1%	13.9%	15.7%	18.3%	0.6%	100.0%

County EMS made a total of 16,648 responses in 2014. The total time on task was 7,777 hours, and the average time on task was 28.0 minutes. However, it is worth noting that for transport calls, this does not include the time for the unit to turn over the patient at transportation destination and the time to travel back to station.

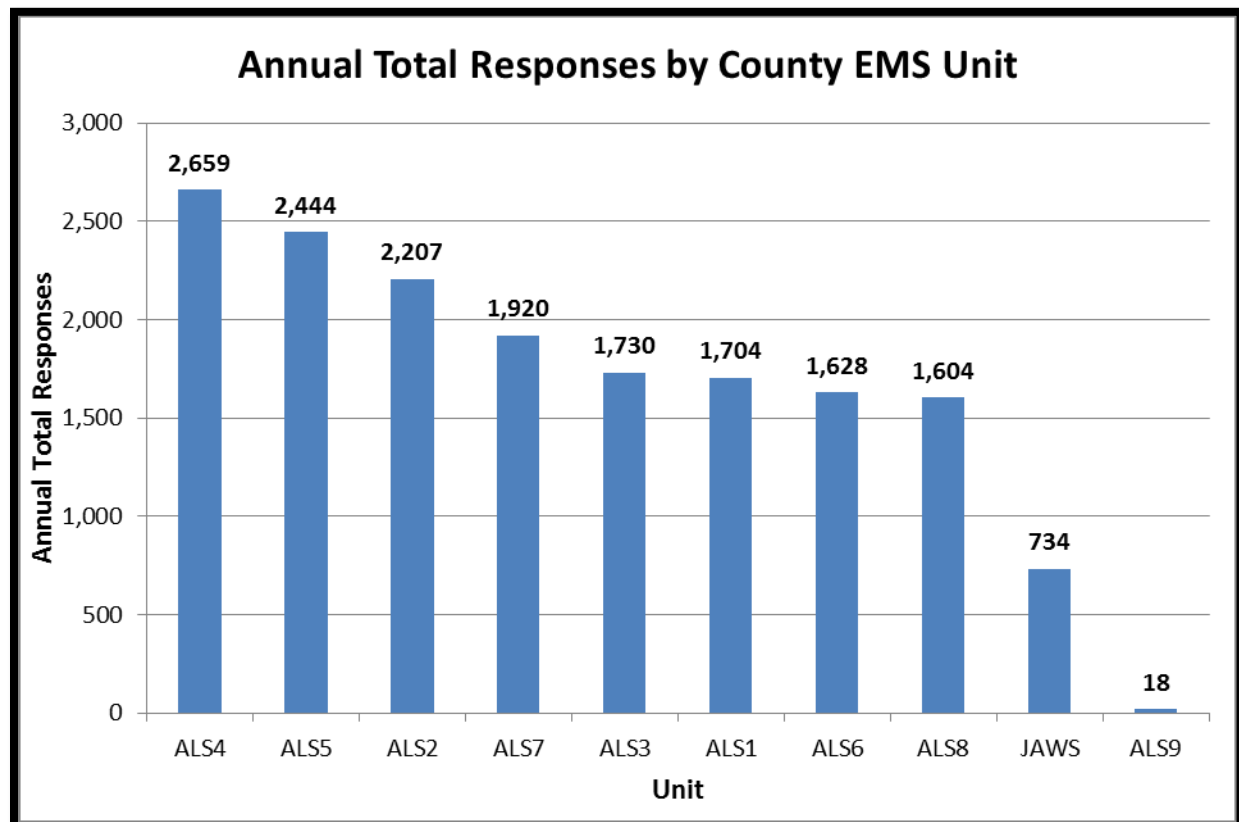
Highlands County EMS tracked their unit transports internally. Historically, about 70% requests involved transporting patients. Based upon our experience, the additional time needed to turn over the patient at transportation destination and the time travelling back to station might be 30 minutes. We estimated the annual busy hours at unit level in the last column. Overall, the estimated annual busy time increased from 7,777 hours to 13,604 hours, which reflected a 75% increase of deployed hours.

Of the eight constantly staffed ALS ambulances, the top three most utilized ambulances were: ALS4, ALS5 and ALS2 and on average each made more than 6.0 responses per day. The least utilized ambulance was ALS8, and it averaged 4.4 responses per day. The EMS trainer unit JAWS has made 734 responses, averaging 2.0 per day.

Table 16: County EMS: Workload by Unit

Agency	Station	Unit	Avg. Busy Minutes per Response	Annual Busy Hours	Annual Total Responses	Responses per day	Estimated Busy Hours
County EMS	HCEMS 1	ALS3	29.1	840	1,730	4.7	1,446
		ALS6	28.0	759	1,628	4.5	1,329
	HCEMS 2	ALS2	26.3	967	2,207	6.0	1,739
	HCEMS 3	ALS4	26.4	1,171	2,659	7.3	2,102
	HCEMS 4	ALS7	28.4	907	1,920	5.3	1,579
	HCEMS 5	ALS5	28.2	1,149	2,444	6.7	2,004
	HCEMS 6	ALS8	29.9	799	1,604	4.4	1,360
	HCEMS 7	ALS1	29.7	843	1,704	4.7	1,439
		ALS9	19.7	6	18	NA	12
		JAWS	27.4	335	734	2.0	592
	Total		28.0	7,777	16,648	45.6	13,604

Figure 10: County EMS: Annual Total Responses by Unit



Another measure, time on task, is necessary to evaluate best practices in efficient system delivery and consider the impact workload has on personnel. Unit Hour Utilization (UHU) determinants were developed by mathematical model. This model includes both the proportion of calls handled in each

major service area (Fire, EMS, Special-Ops, and Service) and total unit time on task for these service categories in 2014. The resulting UHU's represent the percentage of the work period (24 hours) that is utilized responding to requests for service. Historically, the International Association of Fire Fighters (IAFF) has recommended that 24-hour units utilize 0.30, or 30% workload as an upper threshold.⁶ In other words this recommendation would have personnel spend no more than eight (8) hours per day on emergency incidents. These thresholds take into consideration the necessity to accomplish non-emergency activities such as training, health and wellness, public education, and fire inspections. The 4th edition of the IAFF EMS Guidebook no longer specifically identifies an upper threshold. However, *FITCH* recommends that an upper unit utilization threshold of approximately .30, or 30%, would be considered best practice. In other words, units and personnel should not exceed 30%, or eight (8) hours, of their workday responding to calls. These recommendations are also validated in the literature. For example, in their review of the City of Rolling Meadows, the Illinois Fire Chiefs Association utilized a UHU threshold of .30 as an indication to add additional resources.⁷ Similarly, in a standards of cover study facilitated by the Center for Public Safety Excellence, the Castle Rock Fire and Rescue Department utilizes a UHU of .30 as the upper limit in their standards of cover due to the necessity to accomplish other non-emergency activities.⁸

These thresholds take into consideration the necessity to accomplish non-emergency activities such as training, health and wellness, public education, and fire inspections.

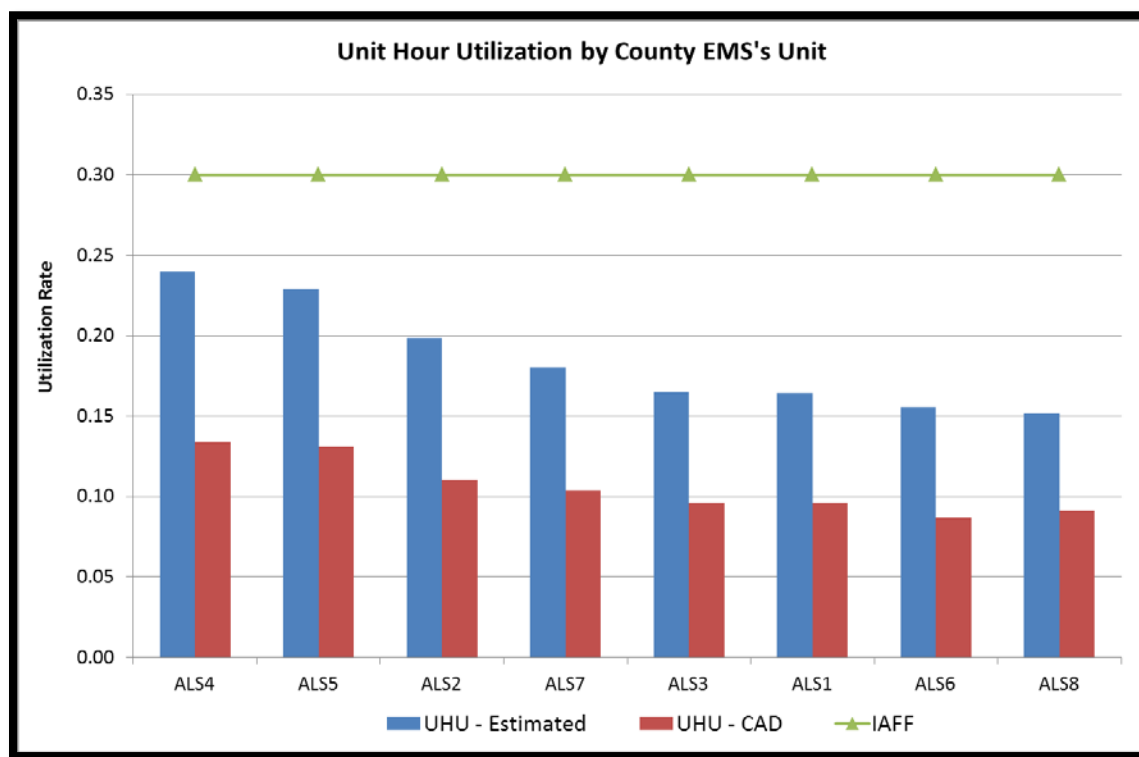
Since the transport time was not included in CAD, we presented the actual CAD UHU, and estimated UHU using the assumptions mentioned earlier. In County EMS, the most utilized units are ALS4 and ALS5 with the estimated UHU to be 0.24 and 0.23. As a whole, the eight full-time staffed ambulances had the CAD UHU of 0.11, and the estimated UHU of 0.19. At the current workload utilization rates, County EMS should have a limited impact on their level of readiness or system performance.

⁶ International Association of Firefighters. (1995). *Emergency Medical Services: A Guidebook for Fire-Based Systems*. Washington, DC: Author. (p. 11)

⁷ Illinois Fire Chiefs Association. (2012). *An Assessment of Deployment and Station Location: Rolling Meadows Fire Department*. Rolling Meadows, Illinois: Author. (pp. 54-55)

⁸ Castle Rock Fire and Rescue Department. (2011). *Community Risk Analysis and Standards of Cover*. Castle Rock, Colorado: Author. (p. 58)

Figure 11: County EMS: Unit Hour Utilization by Unit



The average dispatch time was consistent between 60 and 72 seconds. The average turnout time was between 66 seconds and 84 seconds. The average travel time varied from 4.5 minutes in Sebring to 7.5 minutes in Lake Placid, thus the Sebring calls had the shortest average response time of 6.8 minutes, and Lake Placid had the longest average response time of 9.6 minutes.

The performance for turnout time at the 90th percentile is 124 seconds (two minutes and 4 seconds), travel time at the 90th percentile is 596 seconds (nine minutes and 56 seconds), and turnout and response time at the 90th percentile is 747 seconds (12 minutes and 27 seconds). Please note that the summation of 90th percentile dispatch time, 90th percentile turnout time and 90th percentile travel time is not the same as 90th percentile response time. The response time performance also varies by EMS zone, the 90th percentile response time from shortest to longest by EMS zone in that order are: Ridge, Sebring, Avon Park, Hammock, Lake Placid and Main.

Table 17: County EMS: Average Dispatch, Turnout and Travel Time by EMS Zone

EMS Zone	Dispatch Time	Turnout Time	Travel Time	Response Time	Sample Size
Avon Park	1.1	1.1	5.2	7.5	2,609
Hammock	1.1	1.4	5.6	8.0	1,645
Lake Placid	1.0	1.1	7.5	9.6	2,972
Main	1.1	1.2	6.5	8.9	1,932
Ridge	1.1	1.2	4.7	7.0	2,220
Sebring	1.2	1.2	4.5	6.8	2,618
Total	1.1	1.2	5.7	8.0	13,996

Figure 12: County EMS: Average Dispatch, Turnout and Travel Time by EMS Zone

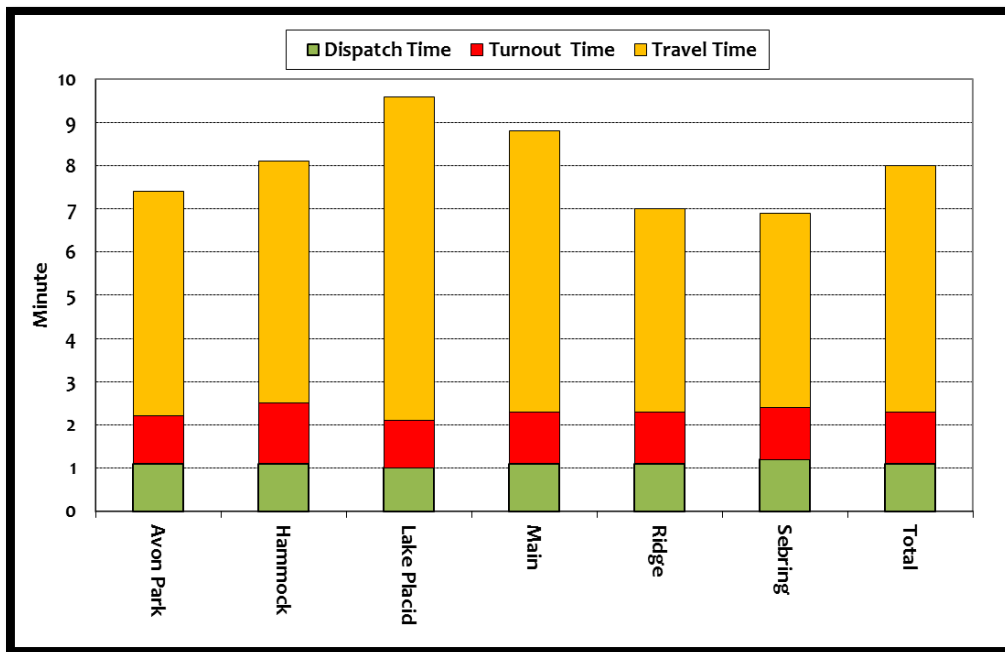
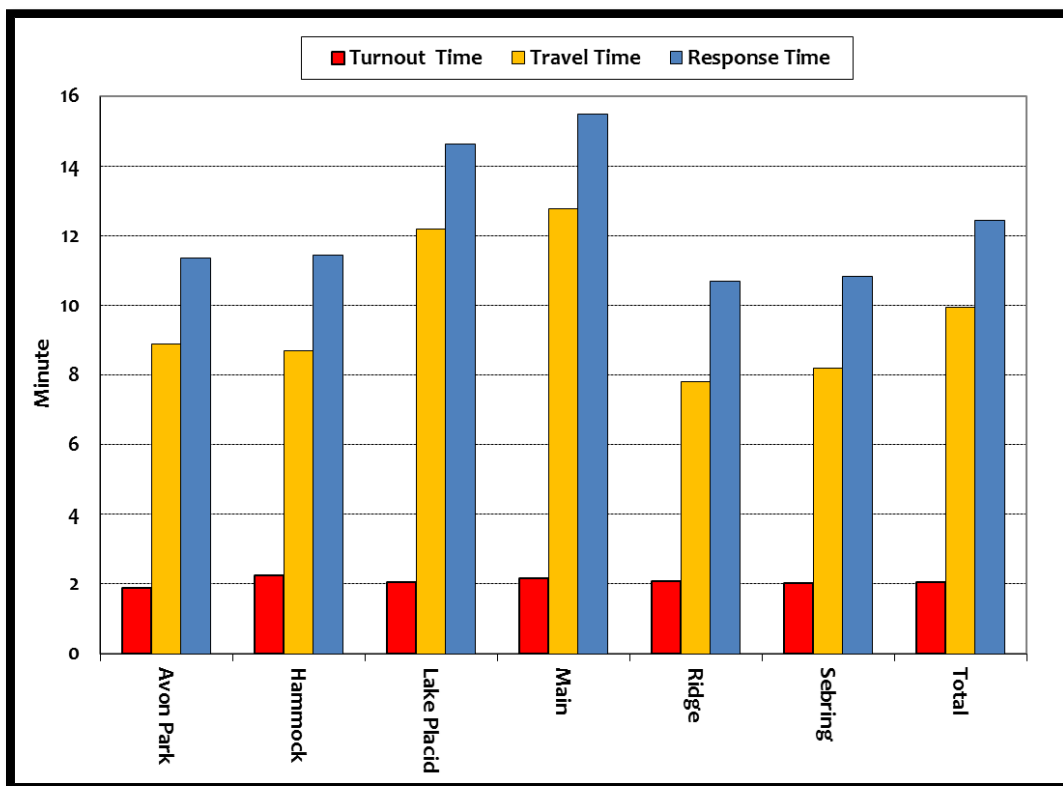


Table 18: County EMS: 90th Percentile Dispatch, Turnout and Travel Time by EMS Zone

EMS Zone	Dispatch Time	Turnout Time	Travel Time	Turnout and Travel Time	Response Time	Sample Size
Avon Park	1.9	1.9	8.9	10.2	11.4	2,609
Hammock	1.8	2.2	8.7	10.3	11.4	1,645
Lake Placid	1.7	2.1	12.2	13.5	14.6	2,972
Main	1.9	2.2	12.8	14.3	15.5	1,932
Ridge	1.9	2.1	7.8	9.4	10.7	2,220
Sebring	2.0	2.0	8.2	9.5	10.8	2,618
Total	1.9	2.1	9.9	11.3	12.5	13,996

Figure 13: County EMS: 90th Percentile of Turnout, Travel and Response Times by EMS Zone



We excluded a total of 16 calls with ALS9 as the responding unit in the following analysis. The average turnout time was between 66 seconds and 84 seconds. The average travel time varied from 4.3 minutes of ALS4 to 7.5 minutes of ALS1.

The response time performance also varies by ambulance since they are staffed to respond to different EMS zone. Of the eight constantly staffed ambulances, ALS3 staffed in Station 1 had the shortest 90th percentile turnout time at 107 seconds (one minute and 47 seconds). ALS2 staffed in Station 2 had the shortest 90th percentile travel time at 424 seconds (seven minute and four seconds). The 90th percentile turnout and travel time from shortest to longest by unit in that order are: ALS2, ALS4, ALS3, ALS7, ALS6, JAWS, aLS5, ALS8 and ALS1. It is worth noting that the summation of 90th percentile turnout time and 90th percentile travel time is not the same as 90th percentile turnout and travel time.

Table 19: County EMS: Average Dispatch, Turnout and Travel Time by Unit

Station	Unit	Dispatch Time	Turnout Time	Travel Time	Response Time	Sample Size
HCEMS 1	ALS3	1.1	1.0	5.4	7.5	1,508
HCEMS 1	ALS6	1.2	1.2	5.6	8.0	1,385
HCEMS 2	ALS2	1.1	1.2	4.5	6.8	2,019
HCEMS 3	ALS4	1.2	1.2	4.3	6.6	2,431
HCEMS 4	ALS7	1.1	1.4	5.8	8.3	1,648
HCEMS 5	ALS5	1.1	1.2	6.4	8.8	2,058
HCEMS 6	ALS8	1.0	1.2	7.4	9.6	1,412
HCEMS 7	ALS1	1.0	1.1	7.5	9.6	1,535
NA	JAWS	1.4	0.9	4.6	6.9	74
Total		1.1	1.2	5.7	8.0	14,070

Figure 14: County EMS: Average Dispatch, Turnout and Travel Time by Unit

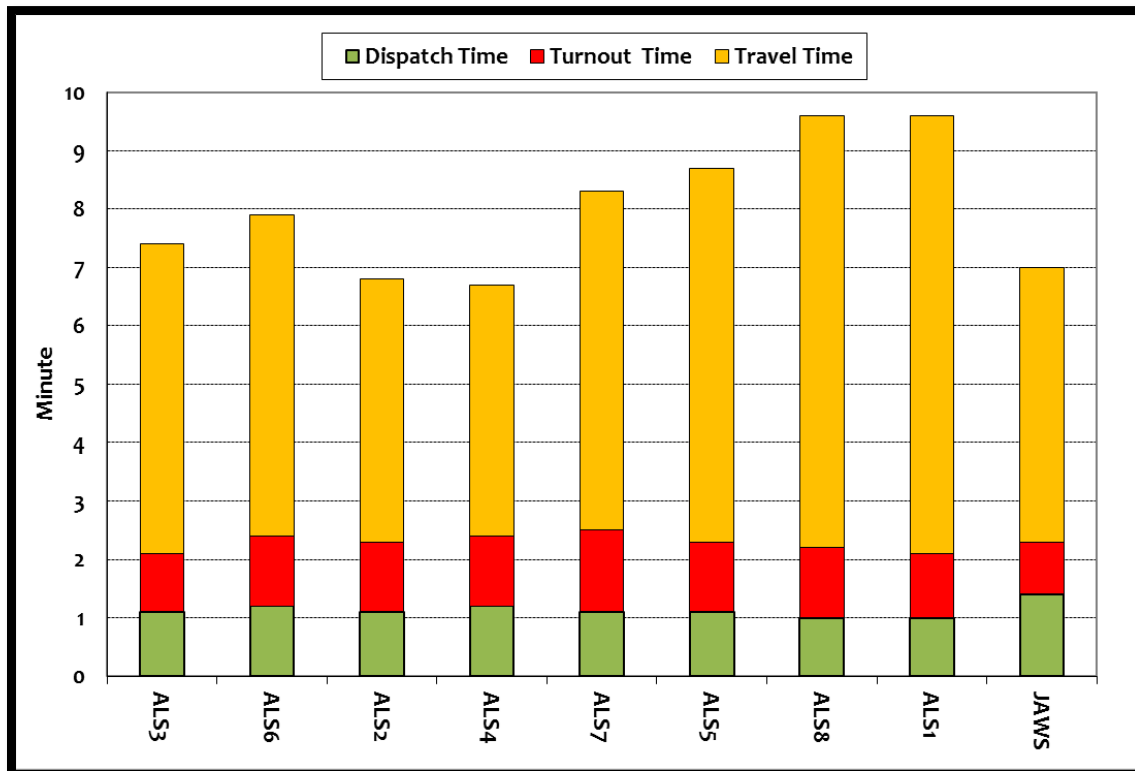


Table 20: County EMS: 90th Percentile Dispatch, Turnout, Travel and Response Time by Unit

Station	Unit	Dispatch Time	Turnout Time	Travel Time	Turnout and Travel Time	Response Time	Sample Size
HCEMS 1	ALS3	1.9	1.8	9.0	10.2	11.5	1,488
HCEMS 1	ALS6	2.0	2.1	9.4	10.7	12.0	1,364
HCEMS 2	ALS2	1.9	2.1	7.1	8.7	9.9	2,009
HCEMS 3	ALS4	1.9	2.0	8.1	9.3	10.5	2,421
HCEMS 4	ALS7	1.8	2.3	9.0	10.7	11.9	1,640
HCEMS 5	ALS5	1.9	2.2	11.5	12.9	14.2	2,048
HCEMS 6	ALS8	1.7	2.2	12.2	13.4	14.7	1,407
HCEMS 7	ALS1	1.7	2.0	12.1	13.5	14.6	1,530
NA	JAWS	3.0	1.8	9.8	10.8	12.6	73
Total		1.9	2.1	9.9	11.3	12.5	13,980

Figure 15: County EMS: 90th Percentile of Turnout, Travel and Response Times by Unit

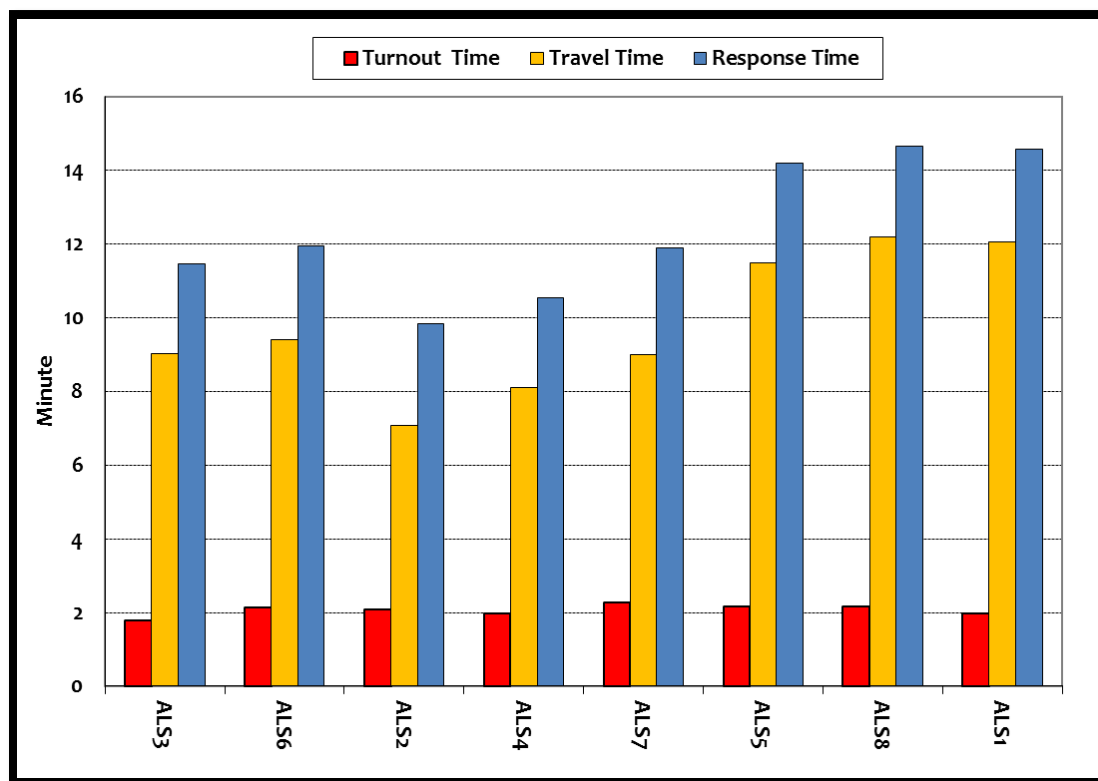


Figure 16: 90th Percentile Turnout Time by Unit in the Ascending Order

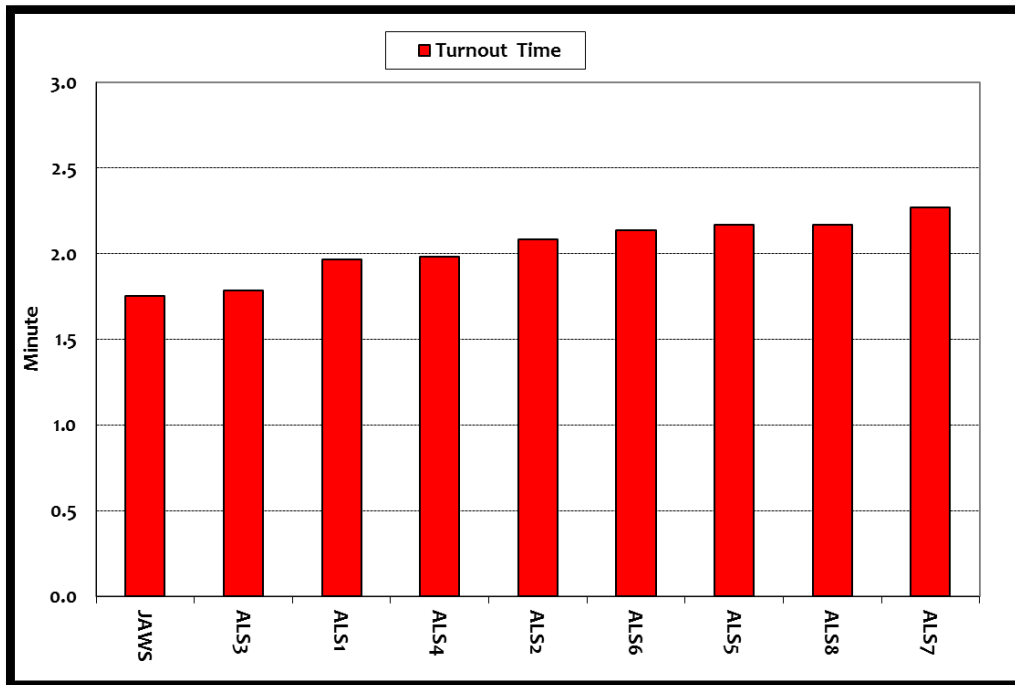


Figure 17: 90th Percentile Travel Time Performance by Unit in the Ascending Order

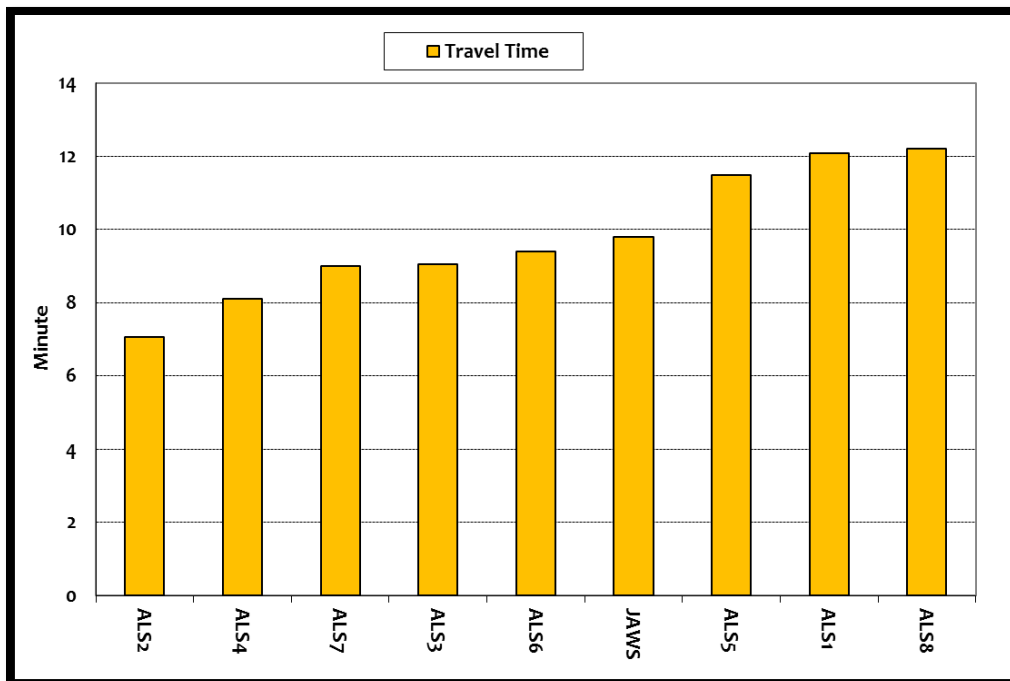
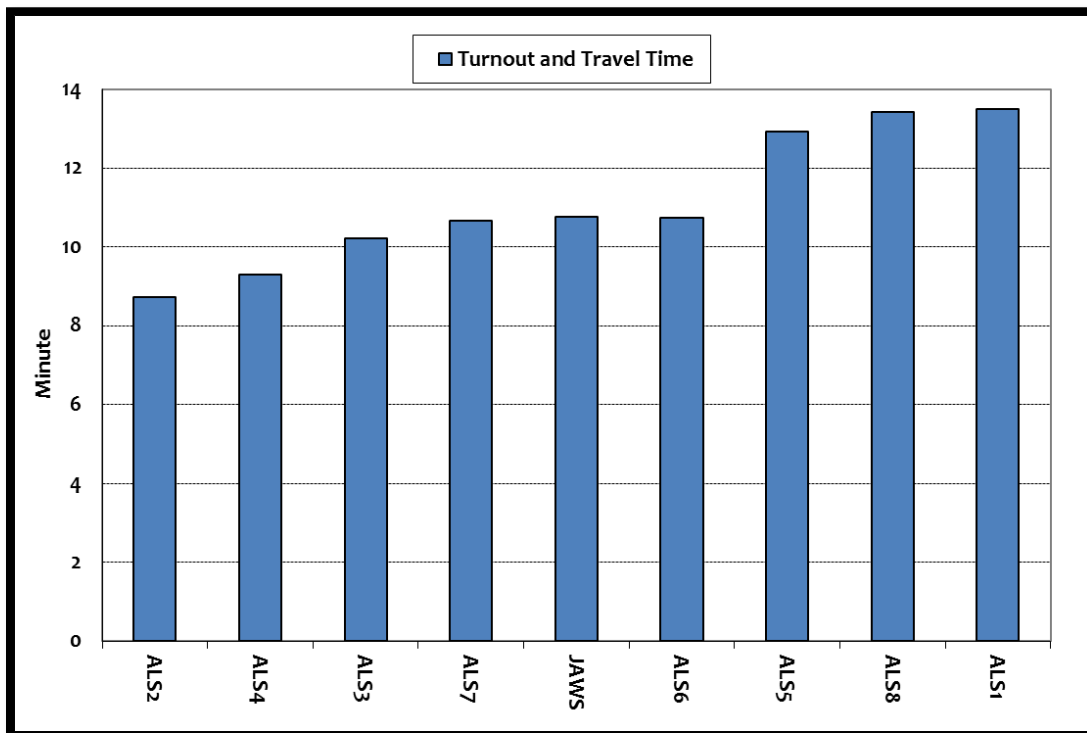


Figure 18: 90th Percentile Turnout and Travel Performance by Unit in the Ascending Order



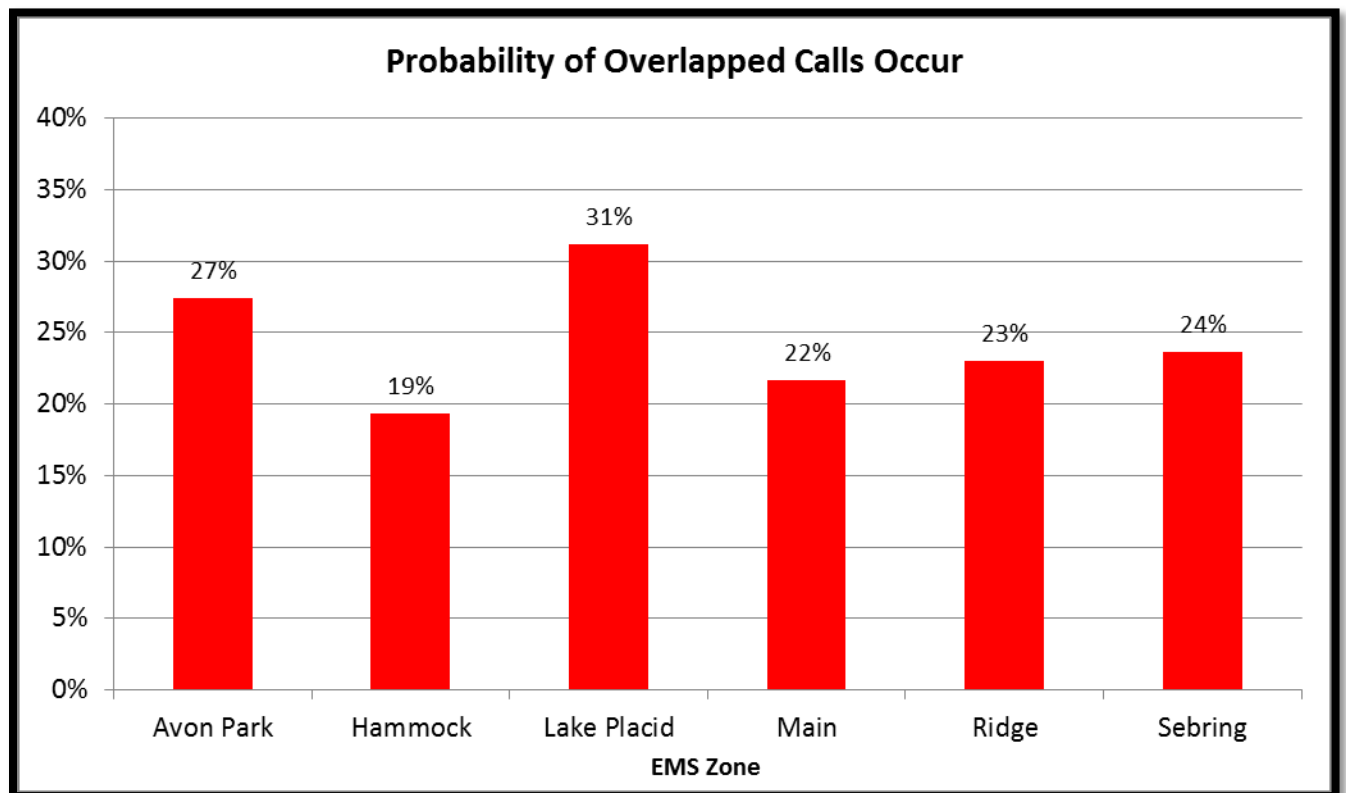
Overlapped Call Analysis

Overlapped calls are defined as the rate at which another call was received for the same EMS zone while there were one or more ongoing calls in the same EMS zone. For example, if there is one call in Avon Park, before the call was cleared another request in Avon Park occurred and those two calls would be captured as overlapped calls. Understanding the probability of overlapped calls occurs will help to determine the number of units to staff for each demand zone. In general, the larger the call volume an EMS zone has, it is more likely to have overlapped calls. The distribution of the demand throughout the day will impact the chance of having overlapped calls. Lake Placid has the highest probability of having overlapped calls at 31%, followed by Avon Park at 27%, and Ridge at 24%. Hammock has the least probability of 19% to have overlapped calls.

Table 21: County EMS: Overlapped Calls by EMS Zone

EMS Zone	No Overlapped Calls	Overlapped with another call	Overlapped with two calls	Overlapped with three or more calls	Total	Probability of Overlapped Calls Occurring
Avon Park	1,931	607	95	26	2,659	27%
Hammock	1,349	270	45	8	1,672	19%
Lake Placid	2,075	781	139	19	3,014	31%
Main	1,558	375	50	5	1,988	22%
Ridge	1,733	446	61	11	2,251	23%
Sebring	2,002	527	80	13	2,622	24%

Figure 19: County EMS: Probability of Overlapped Calls Occur by EMS Zone



TEN VOLUNTEER FIRE DEPARTMENTS

The following section focus on calls that have been responded to by the ten volunteer fire departments. The 10 volunteer fire departments are:

- Desoto City Volunteer Fire Department (DCFD),
- Highlands Lakes Volunteer Fire Department (HLFD),
- Highlands Park Volunteer Fire Department (HPFD),
- Leisure Lakes Volunteer Fire Department (LLFD),
- Lorida Volunteer Fire Department (LOFD),
- Lake Placid Volunteer Fire Department (PLFD),
- Placid Lakes Volunteer Fire Department (PLFD),
- Sun N Lakes Volunteer Fire Department (SLFD),
- Venus Volunteer Fire Department (VEFD),
- West Sebring Volunteer Fire Department (WSFD).

The 10 volunteer fire departments have responded to a total of 1,725 emergency requests, and all units have made a total of 3,220 responses. The total busy time of all volunteer fire departments' units from dispatch until the unit clear was 2,774 hours. On average, 1.9 volunteer firefighter's staffed units have responded to a call. The 10 volunteer fire departments have responded to a total of 540 EMS calls, among which 87% of those EMS incidents were co-responded to by the county EMS agency. In addition, the volunteer fire departments have responded to 308 MVC calls, among which 90% of those MVC incidents were also co-responded to by the county EMS agency.

Table 22: 10 Volunteer Fire Departments: Number of Calls, Number of Responses, and Total Busy Time by Call Category

Call Category	Number of Calls	Calls per Day	Number of Responses	Average Responses per Call	Total Busy Hours	Average Busy Minutes per Response
EMS	540	1.5	608	1.1	226	22.3
MVC	308	0.8	500	1.6	402	48.3
Structure fire	81	0.2	361	4.5	608	101.0
Brush fire	175	0.5	463	2.6	523	67.8
Vehicle fire	55	0.2	106	1.9	145	82.3
Fire alarm	163	0.4	438	2.7	181	24.8
Fire other	260	0.7	541	2.1	466	51.7
HazMat	8	0.0	14	1.8	13	57.7
PD matter	66	0.2	90	1.4	58	38.5
Public service	69	0.2	99	1.4	152	92.1
Total	1,725	4.7	3,220	1.9	2,774	51.7

Table 23: 10 Volunteer Fire Departments: Number of Calls by Responding Agencies

Call Category	Number of Calls		Total	Percentage of Co-Response
	Both EMS and Volunteer FD	Volunteer FD Alone		
EMS	472	68	540	87.4%
MVC	277	31	308	89.9%
Structure fire	63	18	81	77.8%
Brush fire	0	175	175	0.0%
Vehicle fire	4	51	55	7.3%
Fire alarm	2	161	163	1.2%
Fire other	27	233	260	10.4%
HazMat	1	7	8	12.5%
PD matter	26	40	66	39.4%
Public service	8	61	69	11.6%
Total	880	845	1,725	51.0%

Table 24: 10 Volunteer Fire Departments: Number of Dispatched Incidents by Agency

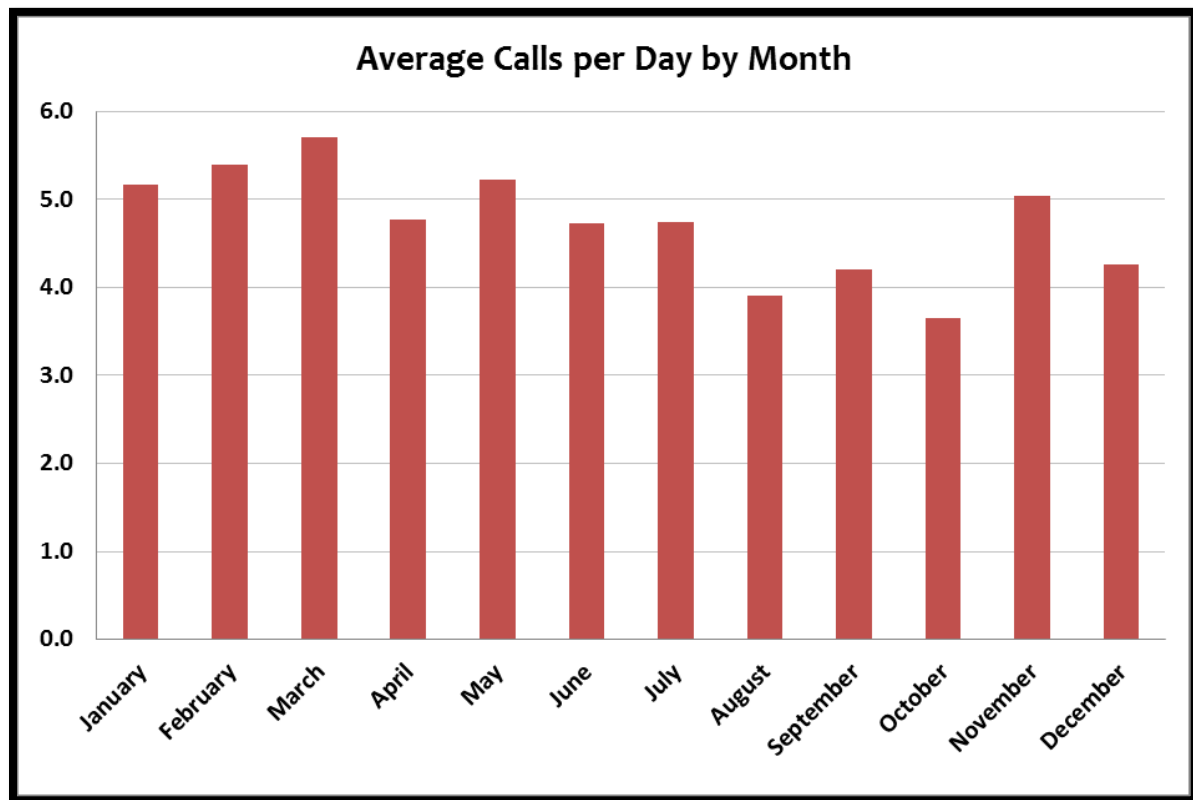
Staffing	Agency Name	Dispatched
Volunteer Fire Departments	Desoto City Fire Department	447
	Highlands Lakes Fire Department	398
	Highlands Park Fire Department	102
	Leisure Lakes Fire Department	161
	Lorida Fire Department	227
	Lake Placid Fire Department	337
	Placid Lakes Fire Department	132
	Sun N Lakes Fire Department	153
	Venus Fire Department	33
	West Sebring Fire Department	910

Temporal analyses were conducted to evaluate patterns for calls responded to by the volunteer agencies. These measures examined the frequency of requests for service in 2014 year by month, day of week, and hour of day. Results found that there was variability by month. The three months with most calls responded to by the volunteer agencies in the descending order were: March (5.7 per day), May (5.2 per day), and January (5.2 per day). The three months with least calls responded to by the volunteer agencies in the ascending order were: October (3.6 per day), August (3.9 per day), and September (4.2 per day). Results are presented below.

Table 25: 10 Volunteer Fire Departments: Total Calls per Month

Month	Number of Calls	Calls per Day	Call Percentage
January	160	5.2	9.3
February	151	5.4	8.8
March	177	5.7	10.3
April	143	4.8	8.3
May	162	5.2	9.4
June	142	4.7	8.2
July	147	4.7	8.5
August	121	3.9	7.0
September	126	4.2	7.3
October	113	3.6	6.6
November	151	5.0	8.8
December	132	4.3	7.7
Total	1,725	4.7	100.0

Figure 20: 10 Volunteer Fire Departments: Average Calls per Month of 2014

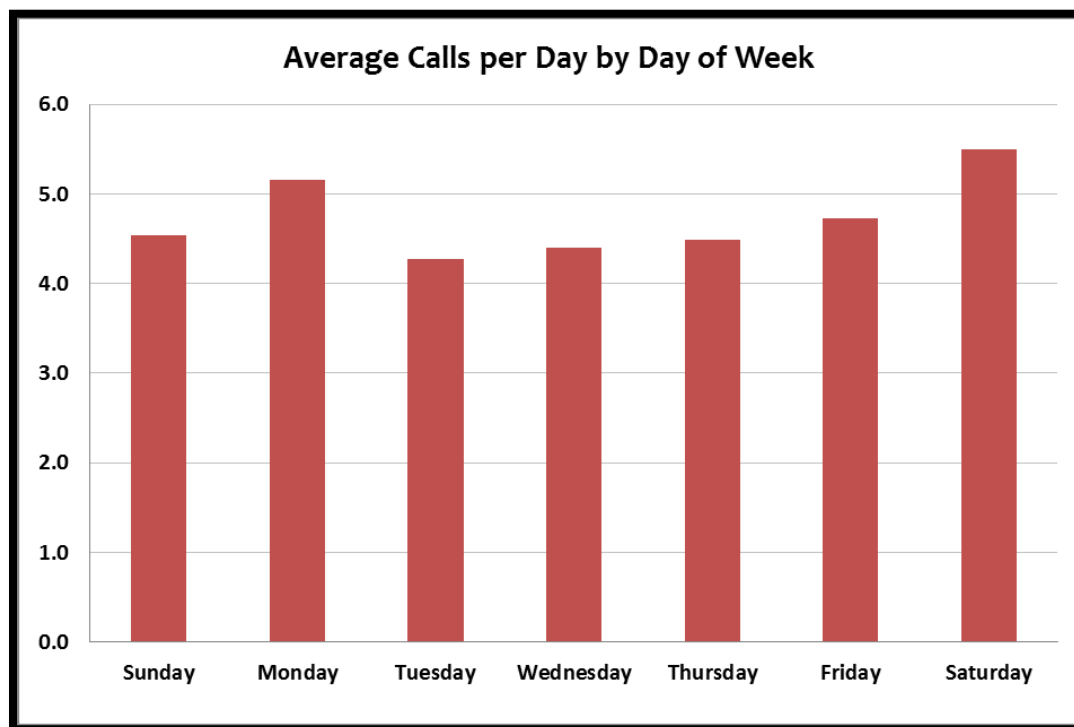


Similar analyses were conducted for calls per day of week. The data revealed that there was variability by day of week. Saturday and Monday had the highest demand for the week, averaging 5.5 and 5.2 per day. Tuesday and Wednesday were the two days of the week with the fewest calls, averaging 4.3 and 4.4 per day. Results for this analysis are presented below.

Table 26: 10 Volunteer Fire Departments: Total Calls by Day of Week for 2014

Day of Week	Number of Calls	Calls per Day	Call Percentage
Sunday	236	4.5	13.7
Monday	268	5.2	15.5
Tuesday	222	4.3	12.9
Wednesday	229	4.4	13.3
Thursday	238	4.5	13.8
Friday	246	4.7	14.3
Saturday	286	5.5	16.6
Total	1,725	4.7	100.0

Figure 21: 10 Volunteer Fire Departments: Average Calls by Day of Week for 2014



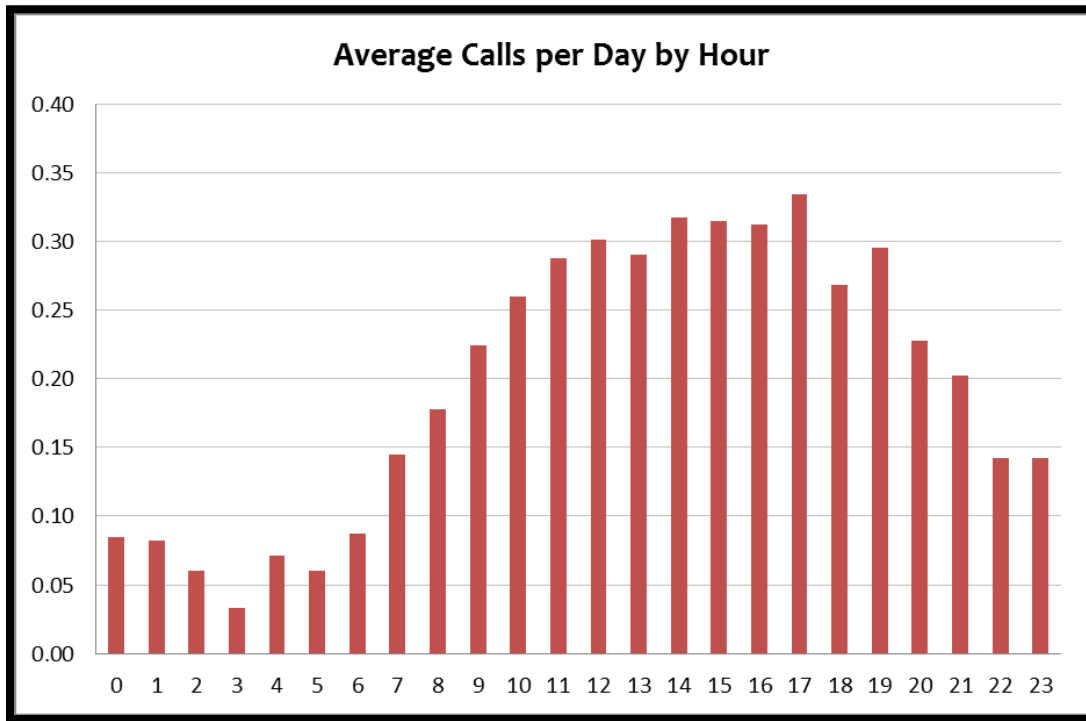
Requests, which were responded to by the volunteer agencies, were evaluated by the hour of the day. Considerable variability exists in the time of day. The hours that include midnight to 0600 have the lowest demands. While the middle of the day has the greatest frequency of calls, specifically the 10 hours period from 1000 through 1900 are above 95 calls in a year. The average number of calls per

hour in a year is 72. The data illustrates that the busiest times of the day for the volunteer fire agencies were between 1000 and 1900. Finally, in an effort to provide a more granular understanding of the community's demand, this temporal analysis included the average number of calls per hour. When referring to Figure 22 below, the busiest hour is at 1700 with 122 calls during that hour in 2014. The average number of calls per hour is a daily average for those 122 calls if they were equally distributed. Therefore, the busiest hour per day would be at 1700 an average hourly call volume of 0.33 calls per hour, or about one call every three days during the 1700 hour. Below are the results in Table 27 and Figure 22.

Table 27: 10 Volunteer Fire Departments: Total and Average Calls by Hour of Day for 2014

Hour of Day	Number of Calls	Calls per Hour	Call Percentage
0	31	0.08	1.8
1	30	0.08	1.7
2	22	0.06	1.3
3	12	0.03	0.7
4	26	0.07	1.5
5	22	0.06	1.3
6	32	0.09	1.9
7	53	0.15	3.1
8	65	0.18	3.8
9	82	0.22	4.8
10	95	0.26	5.5
11	105	0.29	6.1
12	110	0.30	6.4
13	106	0.29	6.1
14	116	0.32	6.7
15	115	0.32	6.7
16	114	0.31	6.6
17	122	0.33	7.1
18	98	0.27	5.7
19	108	0.30	6.3
20	83	0.23	4.8
21	74	0.20	4.3
22	52	0.14	3.0
23	52	0.14	3.0
Total	1,725	4.7	100.0

Figure 22: 10 Volunteer Fire Departments: Average Calls per Day by Hour of Day in 2014



In 2014, the 10 volunteer fire departments combined have made 3,220 unit responses to a total of 1,725 emergency requests. The total time on task was 2,774 hours, and the average time on task was 51.7 minutes. However, it is worth noting that CAD does not track individual volunteer vehicles. West Sebring Volunteer Fire Department made the most responses and it had 1,148 unit responses, which accounted for 36% of the total. The second and third busiest volunteer agencies were Desoto Volunteer Fire Department and Highlands Lakes Volunteer Fire Department, which made 442 and 432 unit responses in a year respectively. Each of the other seven agencies made less than one response per day. On average, each of the volunteer departments responded to less than one calls per day. The unit level workload is also presented in Table 29.

Table 28: 10 Volunteer Fire Departments: Workload by Agency

Agency	Avg. Busy Minutes per Response	Annual Busy Hours	Annual Total Unit Responses	Unit Responses per Day	Busy Minutes per Day
WSFD	48.1	919	1,148	3.1	151.1
DCFD	45.8	337	442	1.2	55.4
HLFD	45.4	327	432	1.2	53.8
LPFD	61.2	295	289	0.8	48.5
LLFD	56.2	217	232	0.6	35.7
LOFD	67.5	251	223	0.6	41.3
SLFD	56.3	165	176	0.5	27.1
PLFD	48.7	142	175	0.5	23.3
HPFD	69.3	94	81	0.2	15.5
VEFD	72.4	27	22	0.1	4.4

Figure 23: 10 Volunteer Fire Departments: Annual Total Responses by Agency

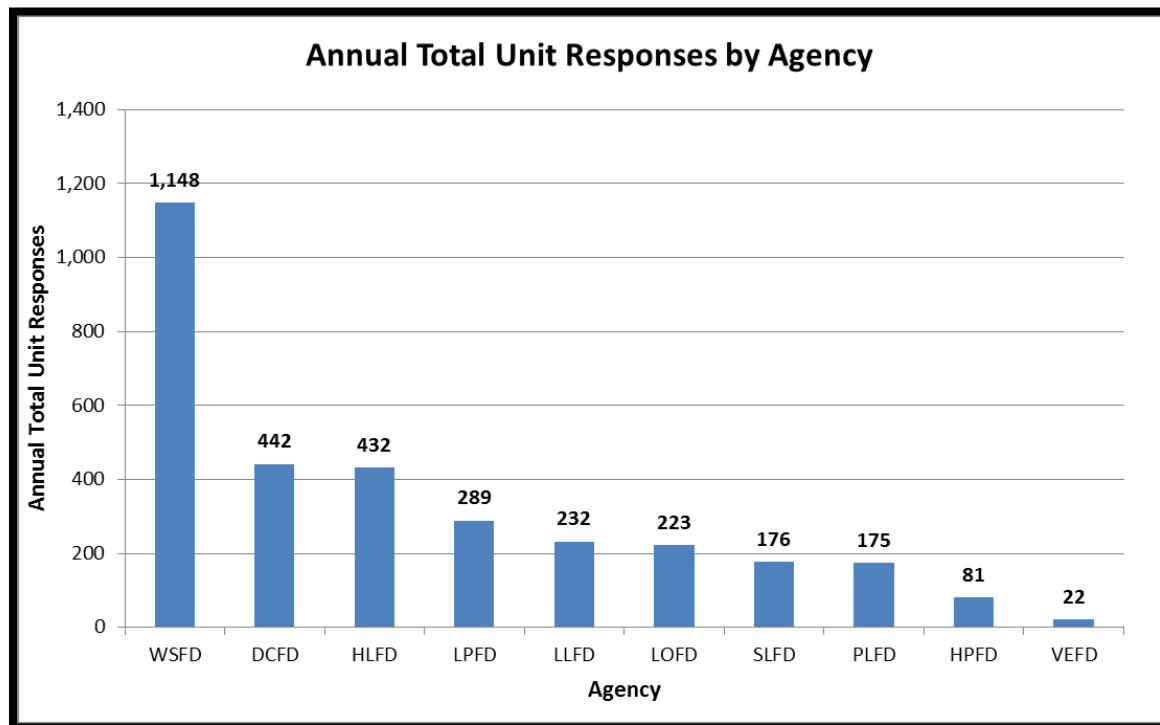


Table 29: 10 Volunteer Fire Departments: Workload by Unit

Agency	Unit Id	Unit Type	Avg. Busy Minutes per Response	Annual Busy Hours	Annual Total Responses
DCFD	DCFD	DCFD	27.9	15.8	34
	FB18	BRUSH 18	41.1	22.6	33
	FB19	BRUSH 19	43.9	25.6	35
	FC18	FIRE CHIEF	40.9	11.6	17
	FE18	ENGINE 18	47.0	73.6	94
	FE19	ENGINE 19	45.9	163.7	214
	FT18	TANKER 18	96.6	24.2	15
	Total		45.8	337.1	442
HLFD	FB01	BRUSH 1	40.3	66.4	99
	FB02	BRUSH 2	52.8	34.3	39
	FC01	FIRE CHIEF	35.3	8.2	14
	FE01	ENGINE 1	39.8	153.4	231
	FE02	ENGINE 2	18.1	0.3	1
	FT01	TANKER 1	122.2	30.6	15
	FT02	TANKER 2	80.8	18.9	14
	HLFD	HLFD	47.7	15.1	19
	Total		45.4	327.2	432
HPFD	FB33	BRUSH 33	86.4	17.3	12
	FB34	BRUSH 34	125.7	12.6	6
	FB35	BRUSH 35	90.2	7.5	5
	FC33	FIRE CHIEF	20.0	1.7	5
	FE33	ENGINE 33	73.6	19.6	16
	FT33	TANKER 33	105.0	15.7	9
	HPFD	HPFD	41.1	19.2	28
	Total		69.3	93.6	81
LLFD	FB29	BRUSH 29	64.6	11.8	11
	FB31	BRUSH 31	60.8	21.3	21
	FB32	BRUSH 32	55.4	30.5	33
	FC29	FIRE CHIEF	39.0	13.7	21
	FE29	ENGINE 29	56.7	43.5	46
	FE30	ENGINE 30	39.9	34.6	52
	FT29	TANKER 29	87.5	27.7	19
	FT30	TANKER 30	110.8	24.0	13
	LLFD	LLFD	38.9	10.4	16
	Total		56.2	217.4	232
LOFD	FB23	BRUSH 23	59.9	114.8	115
	FB24	BRUSH 24	98.3	22.9	14

	FB25	BRUSH 25	62.0	2.1	2
	FC24	FIRE CHIEF	27.1	1.4	3
	FE23	ENGINE 23	88.9	22.2	15
	FE24	ENGINE 24	79.8	65.2	49
	FT23	TANKER 23	96.5	3.2	2
	LOFD	LOFD	49.6	19.0	23
	Total		67.5	250.8	223
LPFD	FA36	AERIAL 36	94.3	17.3	11
	FB36	BRUSH 36	94.6	45.7	29
	FB37	BRUSH 37	35.3	15.9	27
	FC36	FIRE CHIEF	45.7	41.1	54
	FE36	ENGINE 36	55.3	106.9	116
	FT36	TANKER 36	66.6	2.2	2
	FT37	TANKER 37	175.8	29.3	10
	FX36	UTILITY 36	94.3	9.4	6
	LPFD	LPFD	47.8	27.1	34
	Total		61.2	294.9	289
PLFD	FB39	BRUSH 39	59.0	25.6	26
	FB40	BRUSH 40	55.2	27.6	30
	FC39	FIRE CHIEF	33.0	8.3	15
	FE39	ENGINE 39	36.6	37.2	61
	FT40	TANKER 40	66.2	40.8	37
	PLFD	PLFD	26.8	2.7	6
	Total		48.7	142.1	175
SLFD	FB41	BRUSH 41	65.3	44.6	41
	FE41	ENGINE 41	52.0	93.5	108
	FT41	TANKER 41	69.0	16.1	14
	FX41	UTILITY 41	126.6	4.2	2
	SLFD	SLFD	36.4	6.7	11
	Total		56.3	165.1	176
VEFD	FB45	BRUSH 45	50.0	4.2	5
	FE45	ENGINE 45	54.6	1.8	2
	FT45	TANKER 45	192.4	12.8	4
	VEFD	VEFD	42.3	7.8	11
	Total		72.4	26.6	22
WSFD	FA07	AERIAL 7	49.2	25.4	31
	FB07	BRUSH 7	70.9	30.7	26
	FB09	BRUSH 9	37.9	141.5	224
	FB10	BRUSH 10	59.7	56.7	57
	FB11	BRUSH 11	41.6	102.0	147
	FB12	BRUSH 12	71.9	1.2	1

	FC09	FIRE CHIEF	66.2	33.1	30
	FE07	ENGINE 7	35.6	3.6	6
	FE09	ENGINE 9	47.4	232.9	295
	FE10	ENGINE 10	45.0	152.3	203
	FE11	ENGINE 11	22.1	0.4	1
	FT09	TANKER 9	84.9	121.7	86
	FT10	TANKER 10	51.9	0.9	1
	FX07	UTILITY 7	23.1	0.4	1
	WSFD	WSFD	25.8	16.8	39
	Total		48.1	919.4	1,148

Overall, the average dispatch time 72 seconds. The average dispatch time for EMS and MVC calls was less than a minute. The average dispatch time for HazMat call was the longest, 3.2 minutes, however the sample size for HazMat calls was only seven. The average turnout time was 246 seconds (four minutes and six seconds); the average travel time was 354 seconds (five minutes and 54 seconds). Thus, overall the average response time was 670 seconds (11 minutes and 10 seconds).

The performance for turnout time at the 90th percentile was 530 seconds (eight minutes and 50 seconds), travel time was 686 seconds (11 minutes and 26 seconds), and response time was 1,126 seconds (18 minutes and 46 seconds). Please note that the summation of 90th percentile dispatch time, 90th percentile turnout time and 90th percentile travel time is not the same as 90th percentile response time. The response time performance varies significantly by call category. The 90th percentile response time was 15.7 minutes for structure fire call, 23.9 minutes for brush fire, and 19.2 minutes for vehicle fire.

Table 30: 10 Volunteer Fire Departments: Average Dispatch, Turnout and Travel Time by Call Category

Call Category	Dispatch Time	Turnout Time	Travel Time	Response Time	Sample Size
EMS	0.5	3.2	4.6	8.3	176
MVC	0.6	2.9	3.9	7.5	82
Structure fire	1.4	3.6	5.7	10.7	29
Brush fire	1.2	4.8	7.5	13.6	175
Vehicle fire	1.1	5.2	6.4	12.7	52
Fire alarm	1.6	4.2	6.0	11.7	160
Fire other	1.4	4.6	6.2	12.2	235
HazMat	3.2	5.3	6.0	14.6	7
PD matter	1.1	4.0	6.3	11.3	48
Public service	1.3	4.2	4.8	10.3	60
Total	1.2	4.1	5.9	11.2	1,024

Figure 24: 10 Volunteer Fire Departments: Average Dispatch, Turnout and Travel Time by Call Category

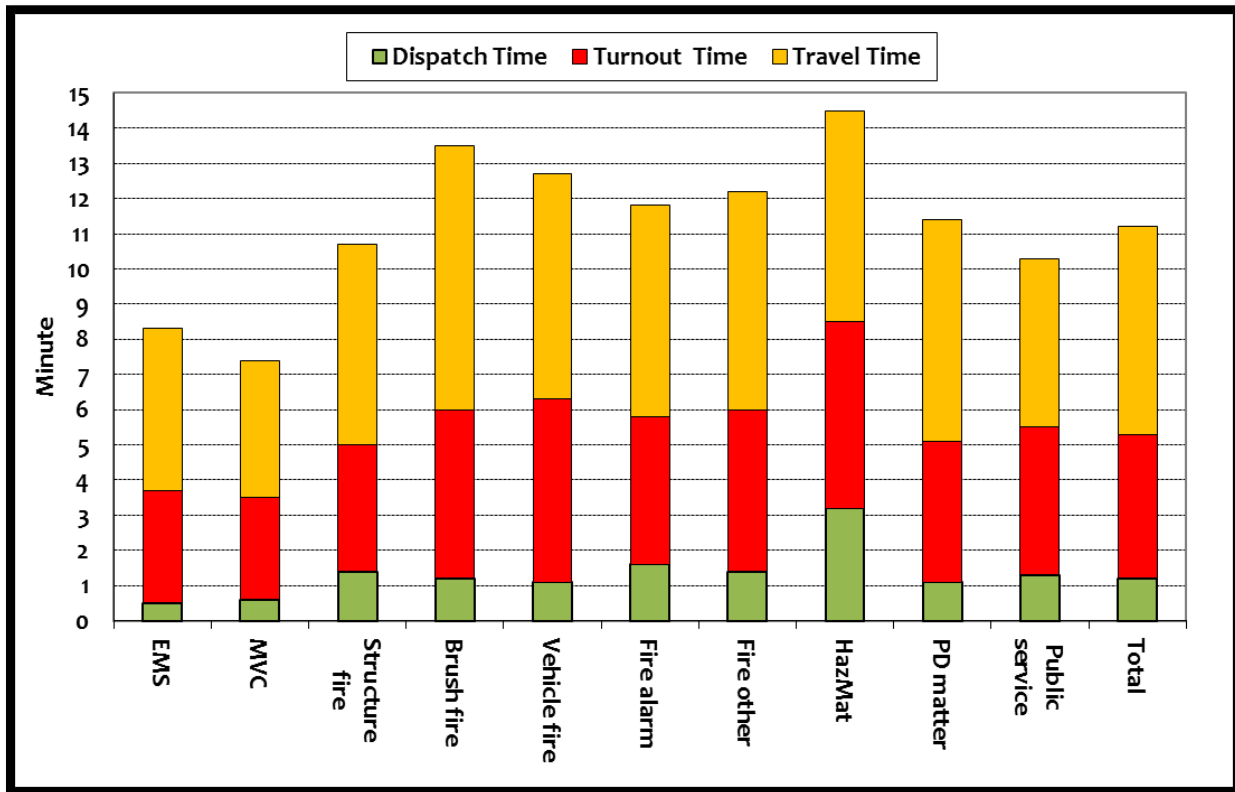
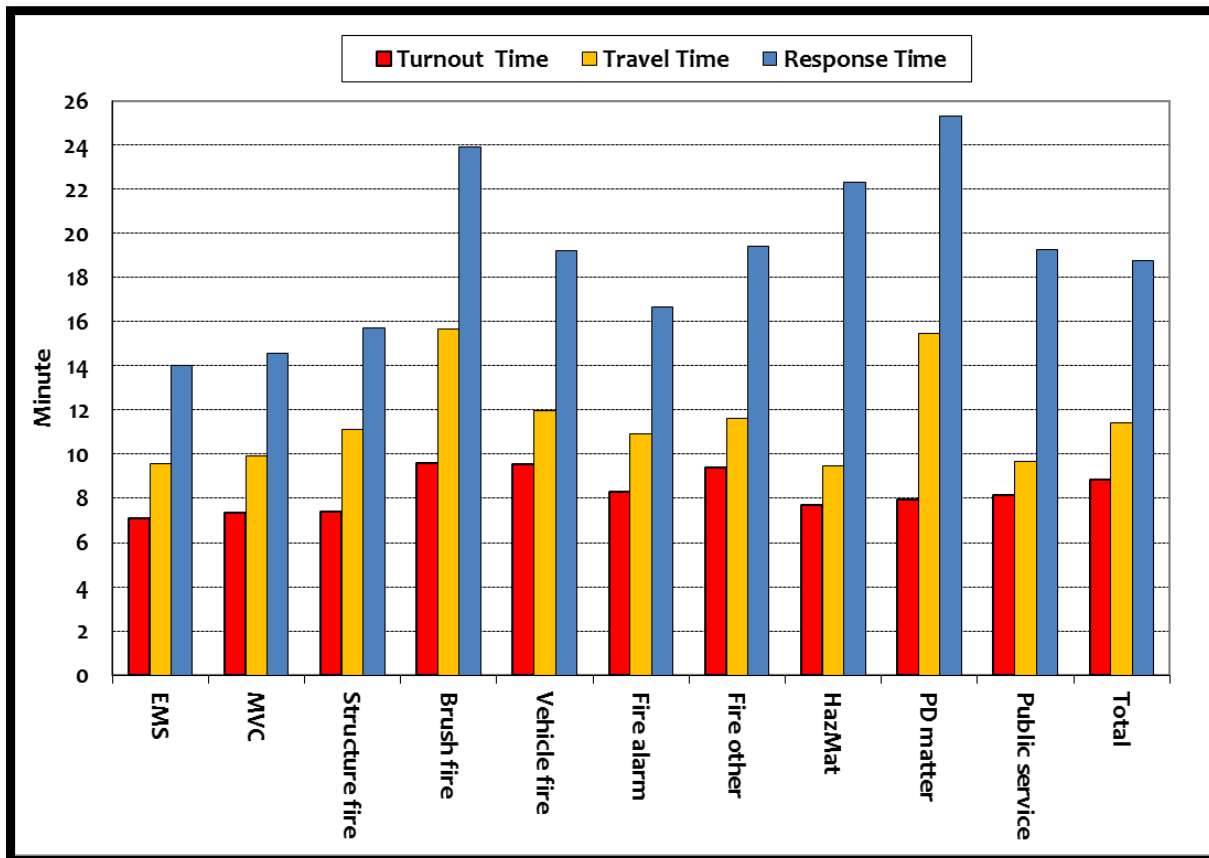


Table 31: 10 Volunteer Fire Departments: 90th Percentile Dispatch, Turnout and Travel Time by Call Category

Call Category	Dispatch Time	Turnout Time	Travel Time	Turnout and Travel Time	Response Time	Sample Size
EMS	0.9	7.1	9.6	13.8	14.0	176
MVC	1.3	7.3	9.9	13.9	14.6	82
Structure fire	2.6	7.4	11.1	15.2	15.7	29
Brush fire	2.1	9.6	15.7	23.2	23.9	175
Vehicle fire	2.0	9.6	12.0	18.2	19.2	52
Fire alarm	2.5	8.3	10.9	14.9	16.7	160
Fire other	2.6	9.4	11.6	17.4	19.4	235
HazMat	8.0	7.7	9.5	14.4	22.3	7
PD matter	2.3	8.0	15.5	22.6	25.3	48
Public service	2.6	8.2	9.7	17.6	19.3	60
Total	2.2	8.8	11.4	17.3	18.8	1,024

Figure 25: 10 Volunteer Fire Departments: 90th Percentile of Turnout, Travel and Response Times by Call Category



The turnout and travel time performance also varies significantly by agency. In both measures of mean and 90th percentile, Venus Volunteer Fire Department (VEFD), Lorida Volunteer Fire Department (LOFD), and Highlands Park Volunteer Fire Department (HPFD) had the longest turnout time and travel time. It is worth noting the sample sizes for HPFD and VEFD are small. Particularly for 90th percentile statistics, it is the longest for VEFD and the second longest for HPFD. Except VEFD, LOFD, and HPFD, the other seven volunteer fire departments had the 90th percentile turnout and travel time consistently between 15 minutes and 16 minutes. The 90th percentile turnout and travel time from shortest to longest by agency in that order are: HLFD, LLFD, SLFD, DCFD, PLFD, LPFD, WFD, HPFD, VEFD and LOFD.

Table 32: 10 Volunteer Fire Departments: Average Dispatch, Turnout and Travel Time by Agency

Agency	Dispatch Time	Turnout Time	Travel Time	Response Time	Sample Size
DCFD	1.2	3.6	6.1	11.0	135
HLFD	1.0	3.1	5.4	9.5	164
HPFD	1.1	6.5	5.9	13.5	16
LLFD	1.2	5.1	5.1	11.4	64
LOFD	0.9	3.8	10.8	15.5	98
LPFD	1.3	5.2	4.0	10.5	100
PLFD	1.3	7.0	3.4	11.7	49
SLFD	1.3	3.6	5.5	10.4	83
VEFD	1.1	9.8	5.6	16.6	8
WSFD	1.2	3.9	5.6	10.8	307
Total	1.2	4.1	5.9	11.2	1,024

Figure 26: 10 Volunteer Fire Departments: Average Dispatch, Turnout and Travel Time by Agency

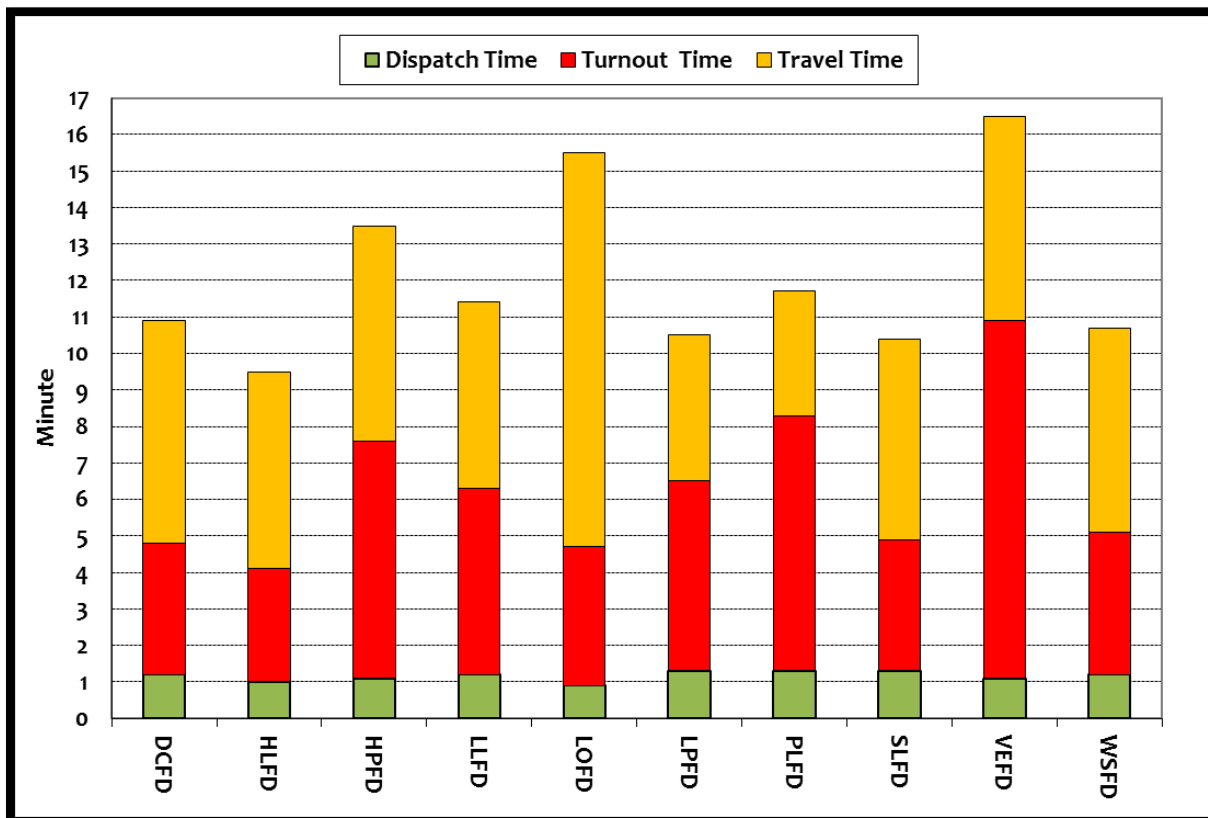


Table 33: 10 Volunteer Fire Departments: 90th Percentile Dispatch, Turnout and Travel Time by Agency

Agency	Dispatch Time	Turnout Time	Travel Time	Turnout and Travel Time	Response Time	Sample Size
DCFD	2.3	7.9	11.6	15.9	17.5	135
HLFD	2.0	7.4	10.5	15.6	17.1	164
HPFD	2.2	17.4	20.9	21.6	23.0	16
LLFD	2.1	8.8	10.0	15.8	16.8	64
LOFD	1.7	12.0	25.2	30.5	31.8	98
LPFD	2.4	10.0	9.6	16.6	17.6	100
PLFD	2.1	10.4	10.2	16.3	17.4	49
SLFD	2.3	7.1	9.9	15.9	16.7	83
VEFD	2.6	13.2	15.3	27.4	28.7	8
WSFD	2.4	7.6	10.7	16.7	18.8	307
Total	2.2	8.8	11.4	17.3	18.8	1,024

Figure 27: 10 Volunteer Fire Departments: 90th Percentile of Turnout, Travel and Response Times by Agency

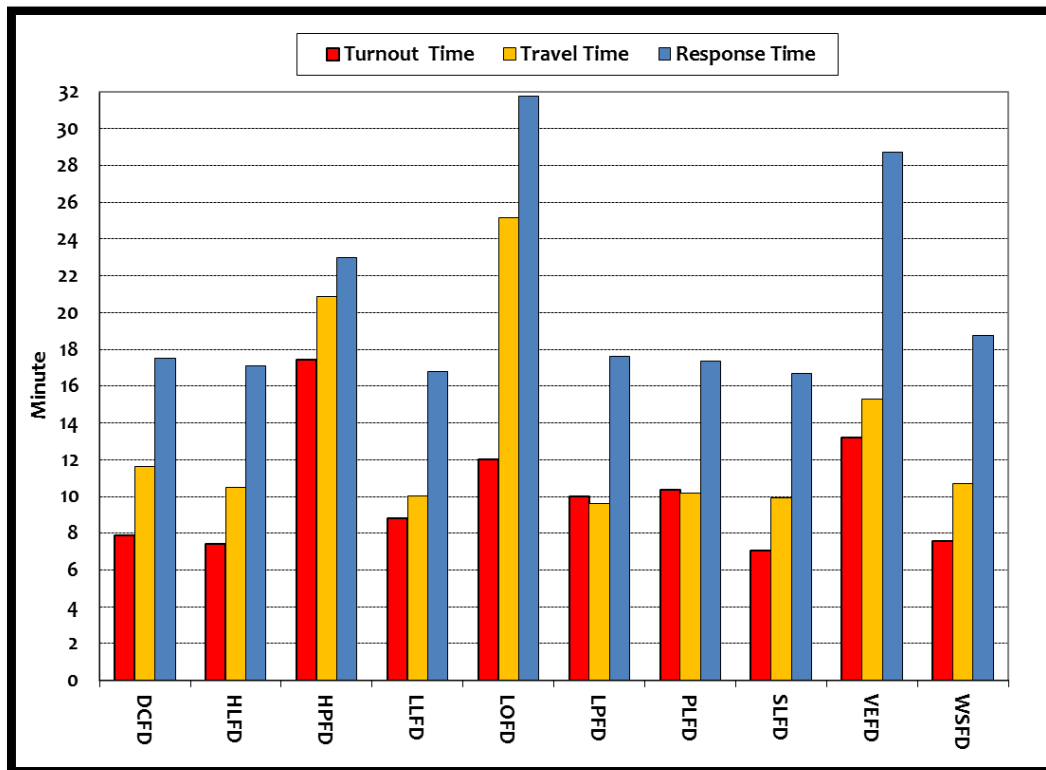


Figure 28: 10 Volunteer Fire Departments: 90th Percentile Turnout Time by Agency in the Ascending Order

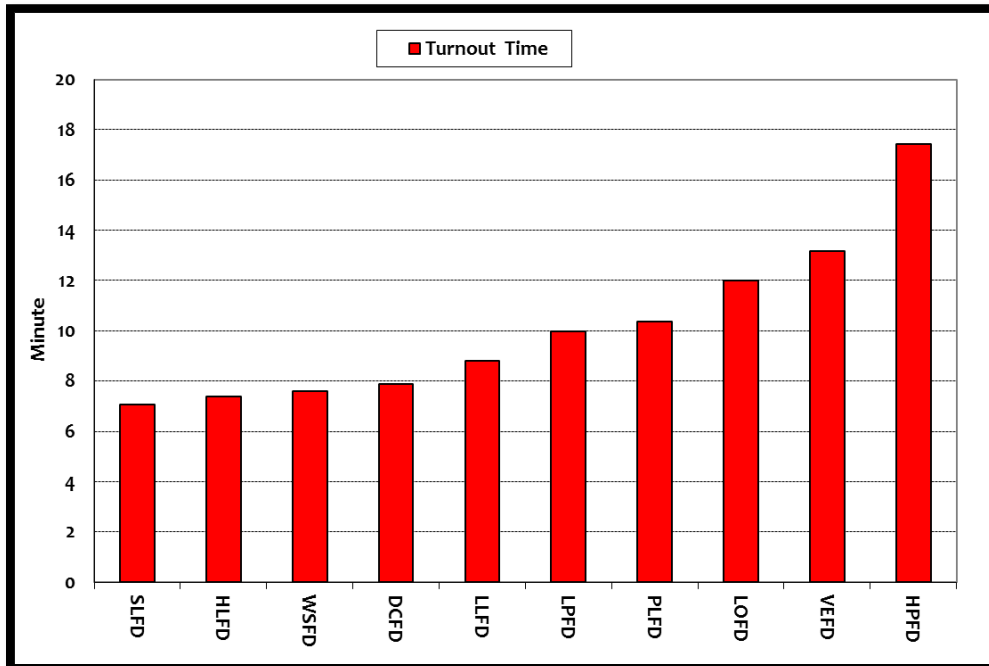


Figure 29: 10 Volunteer Fire Departments: 90th Percentile Travel Time Performance by Agency in the Ascending Order

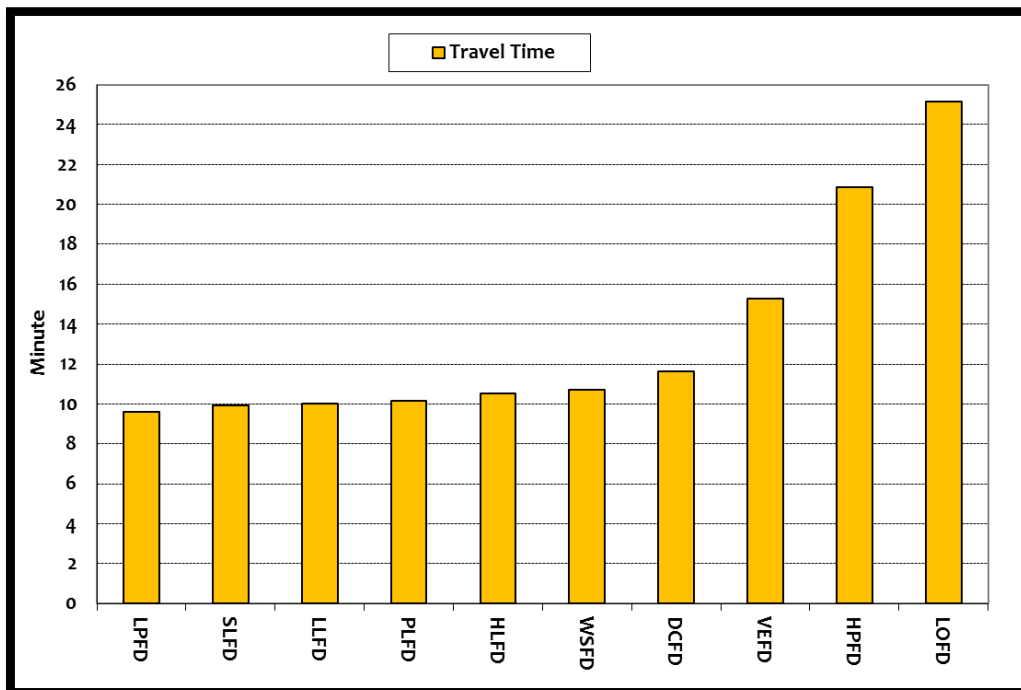
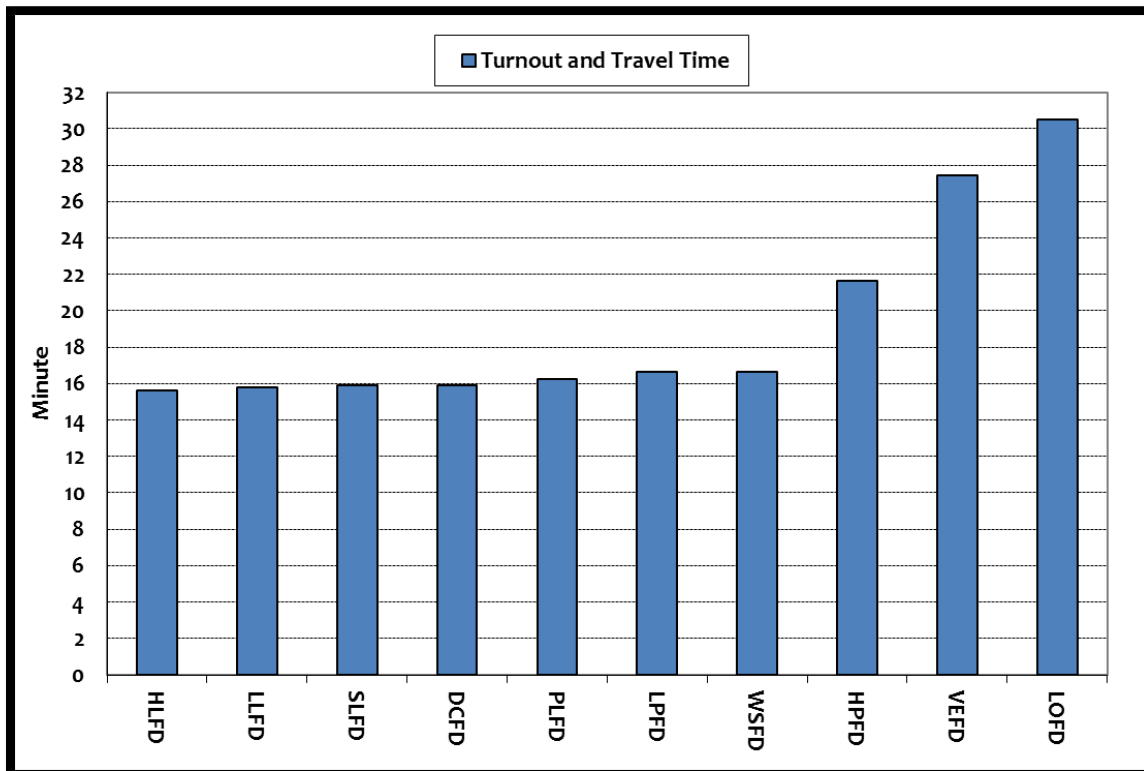


Figure 30: 10 Volunteer Fire Departments: 90th Percentile Turnout and Travel Performance by Agency in the Ascending Order



Desoto Volunteer Fire Department (DCFD) and Highlands Lake Volunteer Fire Department (HLFD) have duty crew from 0800 to 1600. When there were duty crew, both mean and 90th percentile turnout time performances were better. When duty crew was available, the average turnout time was 138 seconds (two minutes and 18 seconds), and the 90th percentile turnout time was 365 seconds (six minutes and 5 seconds). Whereas when duty crew was not available, the average turnout time when duty crew was 288 seconds (four minutes and 48 seconds), and the 90th percentile turnout time was 532 seconds (eight minutes and 52 seconds). We also looked at the mean and 90th percentile turnout and travel time excluding DCFD and HLFD in Table 35. In addition, we also investigated the response time performances of the 10 volunteer fire departments for the 15 hours period from 1700 until 0800 in Table 36.

Table 34: DCFD, HLF and WSFD: Mean and 90th Percentile Turnout and Travel Time

Hours (Duty Crew)	Agency	Mean			90th Percentile			Sample Size
		Turnout Time	Travel Time	Turnout and Travel Time	Turnout Time	Travel Time	Turnout and Travel Time	
0800 to 1600 (Y)	DCFD	2.1	6.7	8.8	4.7	11.6	14.3	76
	HLFD	2.4	5.3	7.8	6.1	10.4	14.0	100
	Total	2.3	5.9	8.2	5.3	11.1	14.3	176
1700 to 0700 (N)	DCFD	5.6	5.4	11.0	9.2	11.7	18.7	59
	HLFD	4.1	5.6	9.7	8.0	10.9	16.6	64
	Total	4.8	5.5	10.3	8.9	11.1	17.3	123

Table 35: Mean and 90th Percentile Turnout and Travel Time by Agency

Agency	Mean			90th Percentile			Sample Size
	Turnout Time	Travel Time	Turnout and Travel Time	Turnout Time	Travel Time	Turnout and Travel Time	
HPFD	6.5	5.9	12.4	17.4	20.9	21.6	16
LLFD	5.1	5.1	10.3	8.8	10.0	15.8	64
LOFD	3.8	10.8	14.6	12.0	25.2	30.5	98
LPFD	5.2	4.0	9.2	10.0	9.6	16.6	100
PLFD	7.0	3.4	10.4	10.4	10.2	16.3	49
SLFD	3.6	5.5	9.1	7.1	9.9	15.9	83
VEFD	9.8	5.6	15.4	13.2	15.3	27.4	8
WSFD	3.9	5.6	9.6	7.6	10.7	16.7	307
Total	4.5	5.9	10.4	9.2	11.7	17.7	725

Table 36: Mean and 90th Percentile Turnout and Travel Time by Agency from 1700 to 0800

Agency	From 1700 to 0800						Sample Size
	Mean			90th Percentile			
	Turnout Time	Travel Time	Turnout and Travel Time	Turnout Time	Travel Time	Turnout and Travel Time	
DCFD	5.6	5.4	11.0	9.2	11.7	18.7	59
HLFD	4.1	5.6	9.7	8.0	10.9	16.6	64
HPFD	5.4	3.4	8.8	17.4	14.6	18.3	8
LLFD	5.7	5.6	11.4	9.6	10.8	18.0	35
LOFD	2.5	8.6	11.1	4.2	22.3	25.2	60
LPFD	5.8	4.1	10.0	10.3	9.5	16.3	45
PLFD	6.1	3.3	9.4	9.1	6.7	12.9	21
SLFD	4.6	5.2	9.8	8.4	9.7	16.4	33
VEFD	9.1	4.1	13.2	13.2	11.4	19.6	6
WSFD	4.5	5.5	10.0	8.1	10.5	17.3	146
Total	4.7	5.6	10.3	9.1	11.1	17.4	477

GEOSPATIAL ANALYSES

Emergency Medical Services

Geospatial analyses were completed to determine the quantity and location of EMS stations for the current system design as well as several alternatives for policy exploration. These analyses utilized a standardized measure of travel time on the actual existing roadways with the average impedance for traffic and time of day influences. Results are presented in Tabular and Map forms for clarity.

Three years of historical data (2012-2014) were utilized to map locations of EMS calls in the creation of a heat map. When referring to Figure 31 below, the darker the shading the higher frequency and density of calls occurred in that area.

In addition, comparative analyses were completed to assess the impact of selecting alternative system performance benchmarks. For example, the current system is performing at 10-minutes travel time for EMS calls. What if the desired policy was to respond in 6 minutes, 8 minutes, or 12 minutes? Table XX summarizes these analyses by comparing the optimized station locations. In each scenario, the system design goal is to cover 90% of the calls in the desired time frame.

Table 37: System Design Comparisons for Alternative Travel Time Performance

Desired Travel Time in Minutes	Percentage of Calls Captured in Desired Time Frame	Optimal Number of Stations to Achieve the Desired Performance
6	91%	20
8	91%	10
10	91%	6
12	93%	4

At a minimum of one unit per station facility, the constant fixed costs applied to each level of performance is significant between potential alternatives. Assuming the policy option of maintaining current performance, the optimized locations for the EMS stations is provided as Figure 32.

However, the optimize locations only provide a 3% improvement (less than one call per day) in performance over the current six (6) facilities. Therefore, it would be our recommendation that the optimized locations are only considered for future sites and are weighed against the capital costs of adjusting station locations, purchasing new land, and engineering costs of different lot sizes. As is evident by a 3% adjustment in performance, siting station locations has built in flexibility for close proximity of two optimal locations.

Figure 31: EMS Incident Heat Map (2012-2014)

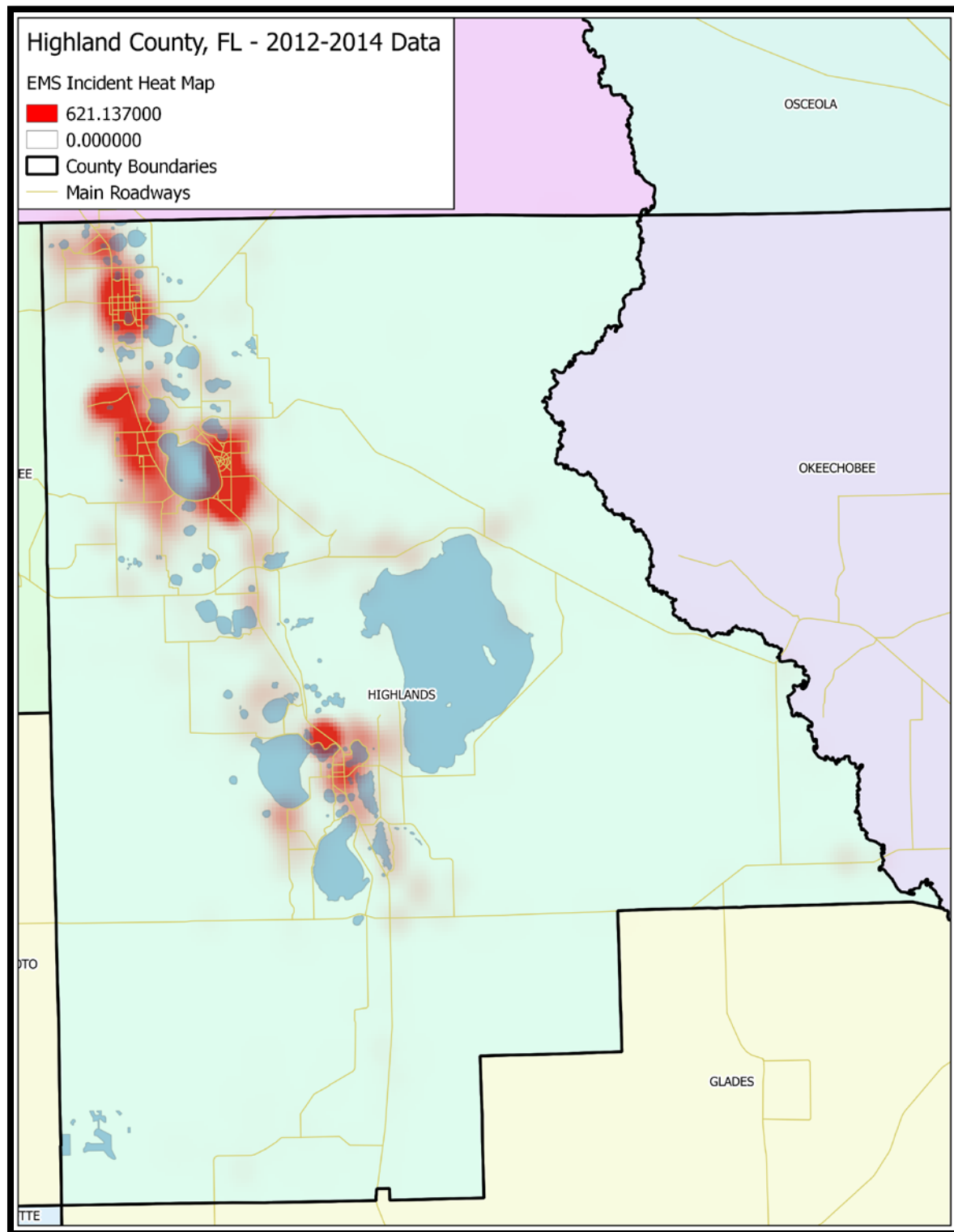
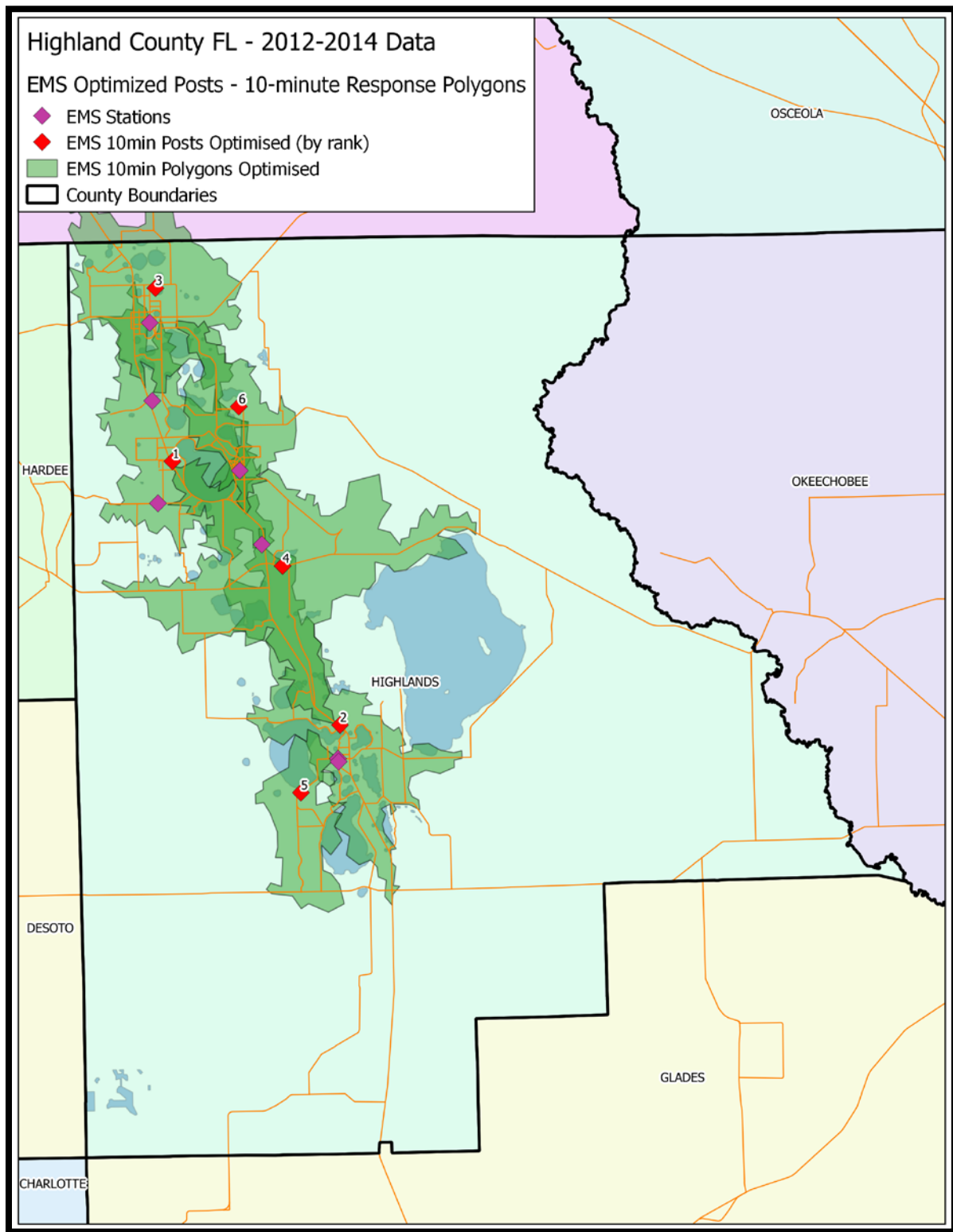


Figure 32: Optimized Station Locations for 10-Minute Travel Time to EMS Incidents



Fire Services

Geospatial analyses were completed to determine the quantity and location of fire stations for the current system design as well as several alternatives for policy exploration. These analyses utilized a standardized measure of travel time on the actual existing roadways with the average impedance for traffic and time of day influences. Results are presented in Tabular and Map forms for clarity.

Three years of historical data (2012-2014) were utilized to map locations of fire calls in the creation of a heat map. When referring to Figure 33 below, the darker the shading the higher frequency and density of calls occurred in that area.

Currently, the total number of fire stations utilized in the system is 17. Geospatial analyses reveal that to achieve a 10-minute travel time that is commensurate with EMS services, the county would need five (5) of the existing fire stations and four (4) stations if the locations were optimized. Interestingly, the marginal benefit of the sixth (6th) fire station through the 17th fire station improved service by a total of 5.63%. The 17th station was not listed because it did not contribute to the overall performance. When referring to the table below, the results may be interpreted as follows; the station that contributes the most coverage to the system (Rank 1) is Fire Station 9 and is able to capture 50.17% of all of the fire related calls in the county in a 10-minute or less travel time. Results of the marginal utility of each fire station are provided in Table 38 below.

Table 38: Marginal Utility of Existing Fire Stations - 10-Minute Travel Time

Rank	Station Number	Class	Station Capture	Total Capture	Percent Capture
1	9	U	11346	11346	50.17%
2	1	U	4264	15610	69.02%
3	19	U	3247	18857	83.38%
4	36	U	1224	20081	88.79%
5	10	U	445	20526	90.75%
6	39	U	241	20767	91.82%
7	41	U	235	21002	92.86%
8	24	U	225	21227	93.85%
9	17	U	161	21388	94.57%
10	29	U	142	21530	95.19%
11	30	U	72	21602	95.51%
12	45	U	67	21669	95.81%
13	2	U	45	21714	96.01%
14	25	U	42	21756	96.19%
15	33	U	32	21788	96.33%
16	18	U	10	21798	96.38%

GIS mapping for existing fire stations and optimized location of fire stations to achieve a 10-minute travel time are presented below as Figures 34 and 35, respectively.

Figure 33: Fire Related Incident Heat Map (2012-2014)

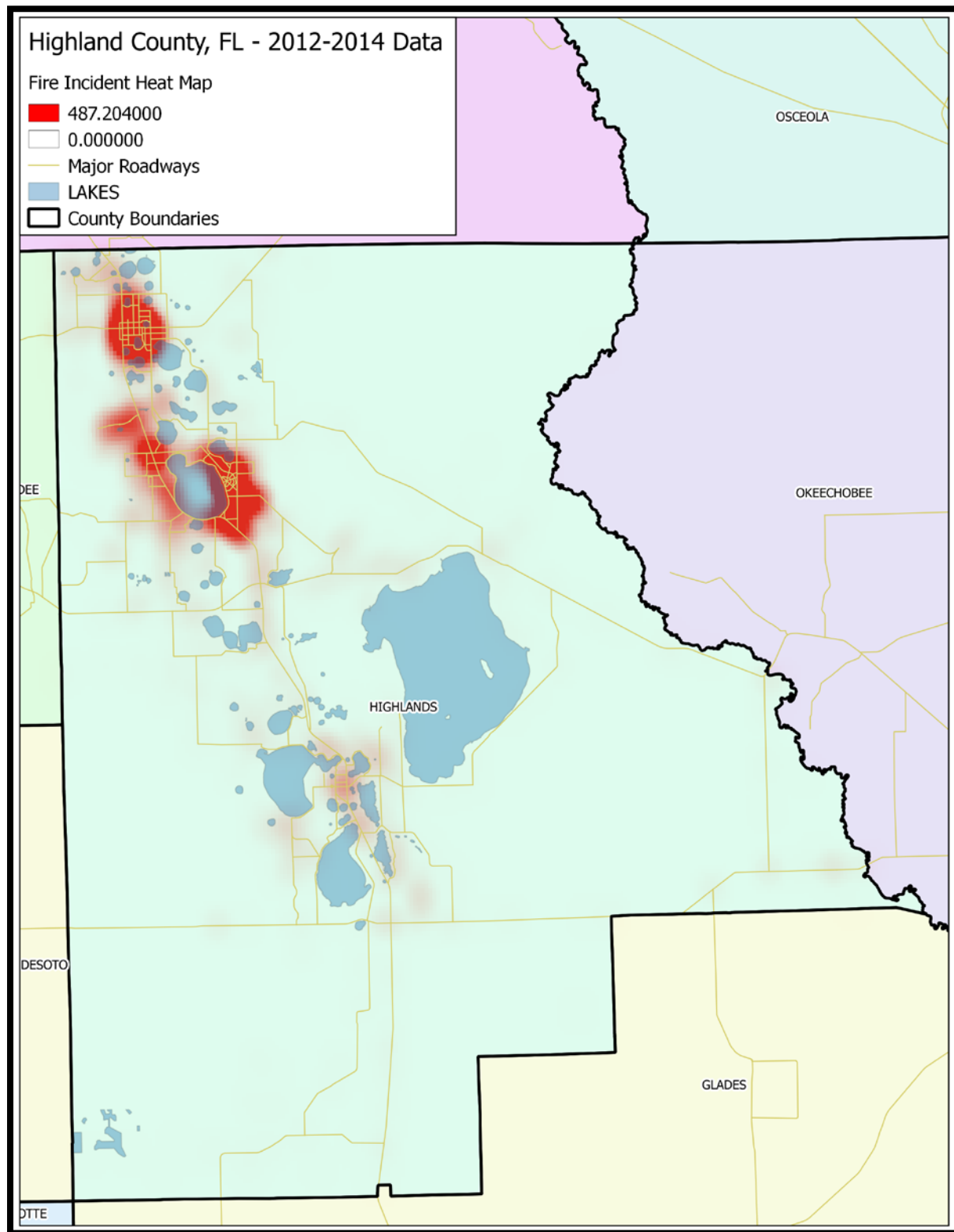


Figure 34: Existing Fire Station Locations to Achieve a 10-Minute Travel Time for Fire Related Incidents

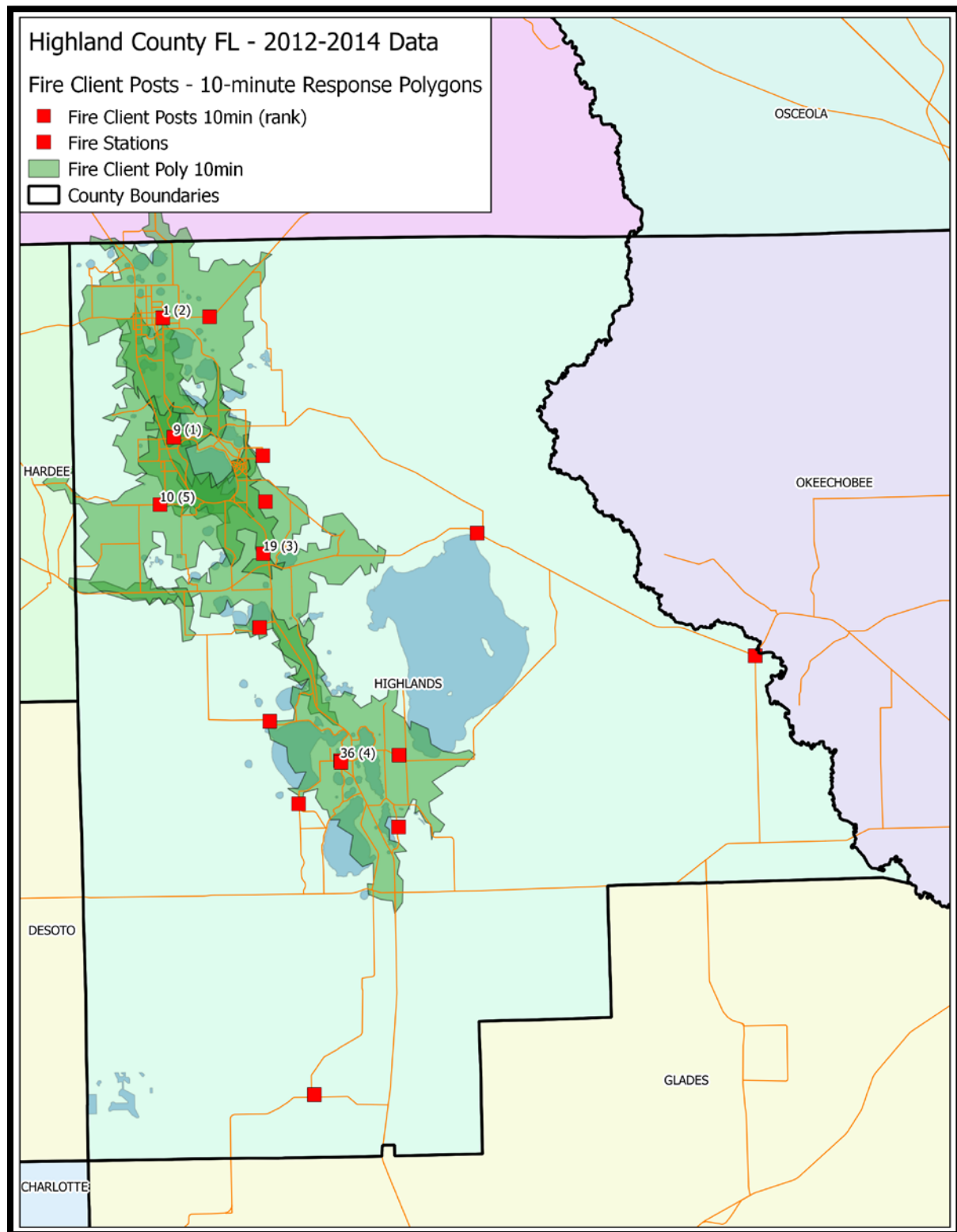
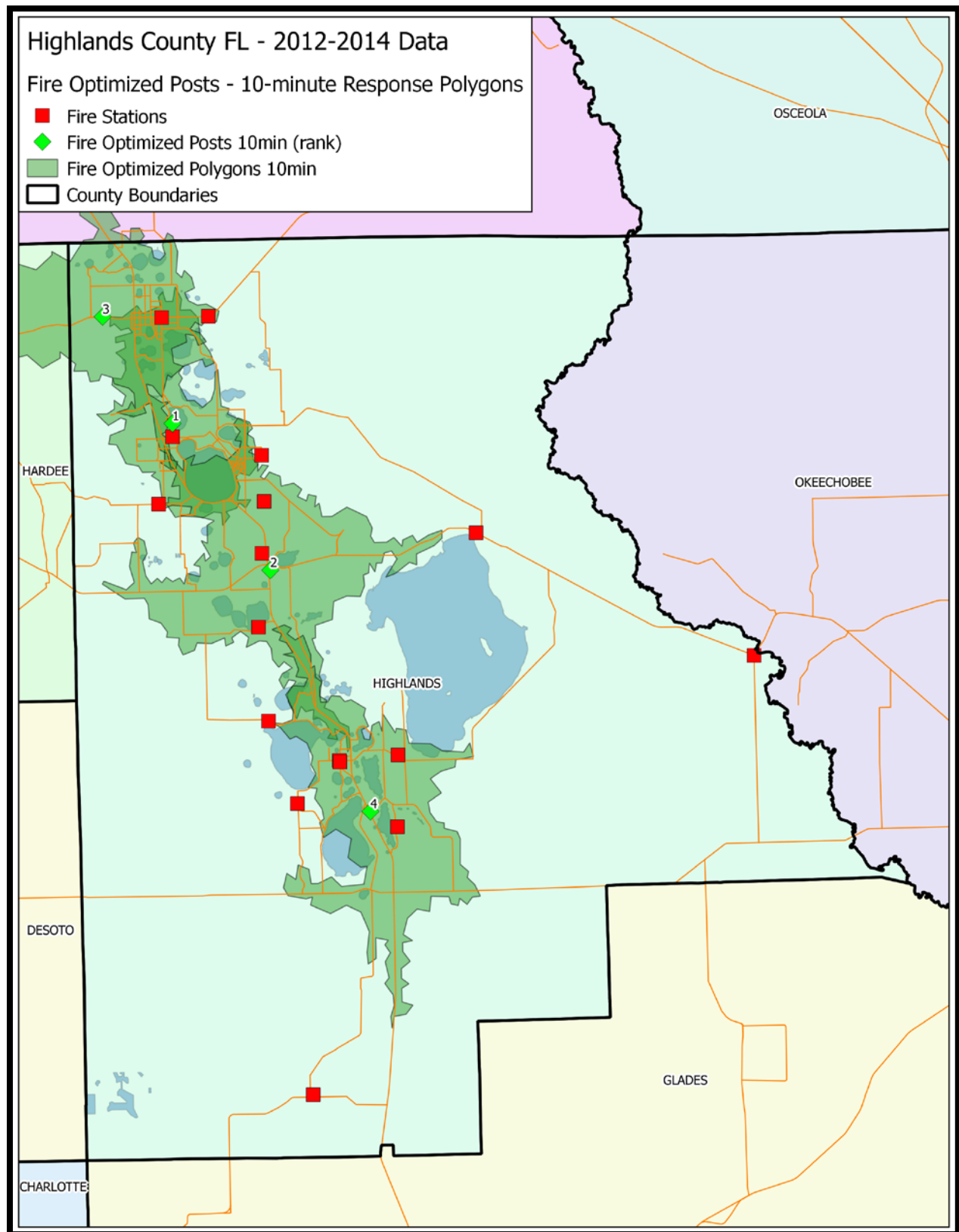


Figure 35: Optimized Fire Station Locations to Achieve 10-Minute Travel Time



Consolidated EMS and Fire Services

Geospatial analyses were completed to determine the quantity and location of fire/EMS stations for a consolidated system design. These analyses utilized a standardized measure of travel time on the actual existing roadways with the average impedance for traffic and time of day influences. Results are presented in Tabular and Map forms for clarity. Three years of historical data (2012-2014) were utilized to complete these analyses. Assuming that the County would operate and have unfettered access to all of the fire and EMS facilities, these analyses leveraged the facilities to the County's best advantage.

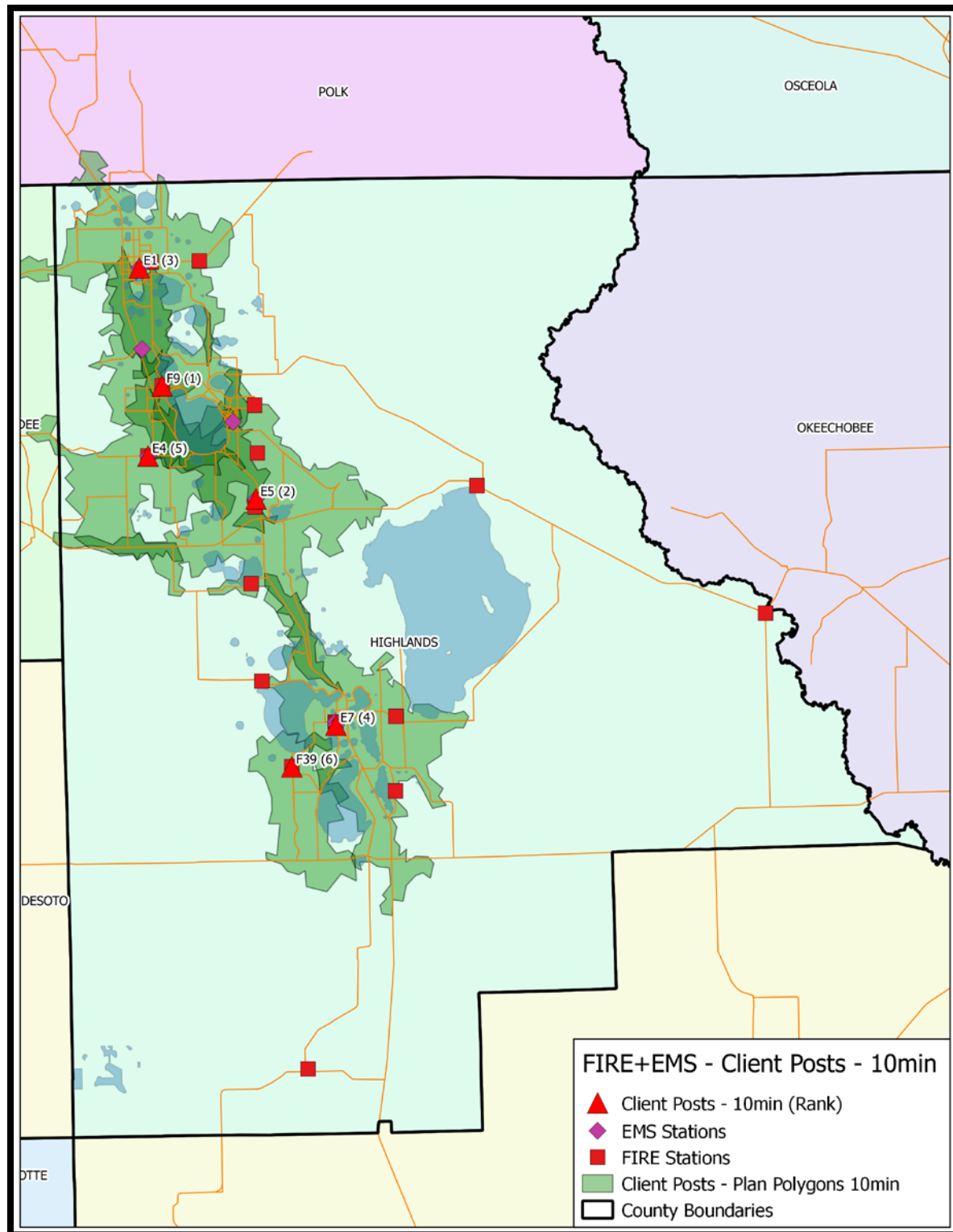
Currently, the total number of fire and EMS stations utilized in the system is 22: 17 fire stations and 5 stand-alone EMS stations. Geospatial analyses reveal that to achieve a 10-minute travel time that maintains current EMS performance and simultaneously improves fire performance by 6 minutes, the county would need a combination of six (6) of the existing fire and EMS stations and five (5) stations if the locations were optimized. Interestingly, the marginal benefit of the seventh (7th) station through the 19th station improved service by a total of 5.89%. The 20th, 21st, and 22nd stations were not listed because they did not contribute to the overall performance. When referring to the table below, the results may be interpreted as follows; the station that contributes the most coverage to the system (Rank 1) is Fire Station 9 and is able to capture 45.92% of all of the calls in the county in a 10-minute or less travel time. Results of the marginal utility of each station are provided in Table 39 below.

Table 39: Marginal Utility of Existing Fire and EMS Stations - 10-Minute Travel Time

Rank	Station Number	Class	Station Capture	Total Capture	Percent Capture
1	F9	U	23431	23431	45.92%
2	E5	U	7937	31368	61.48%
3	E1	U	7856	39224	76.88%
4	E7	U	4723	43947	86.14%
5	E4	U	1308	45255	88.70%
6	F39	U	989	46244	90.64%
7	F24	U	734	46978	92.08%
8	F29	U	418	47396	92.90%
9	E3	U	393	47789	93.67%
10	F41	U	359	48148	94.37%
11	E2	U	262	48410	94.88%
12	F2	U	222	48632	95.32%
13	F30	U	217	48849	95.74%
14	F33	U	149	48998	96.03%
15	F45	U	126	49124	96.28%
16	F25	U	107	49231	96.49%
17	F1	U	10	49241	96.51%
18	F18	U	5	49246	96.52%
19	E6	U	3	49249	96.53%

GIS mapping for existing fire and EMS stations required to achieve a 10-minute travel time are presented as Figure 36 below.

Figure 36: Fire and EMS Station Locations to achieve a 10-Minute Travel Time to All Calls



STAKEHOLDER INPUT - DRAFT REPORT FEEDBACK

Fitch & Associates presented the draft report findings to the Highlands County Board of County Commission on January 19, 2016. An important element to successful projects is to provide opportunity for an ongoing dialogue from the system experts and stakeholders pertaining to the draft results. Therefore, subsequent to the BOCC meeting on January 19, 2016, 14 days were provided for review, feedback, and inquiry.

In total, representatives from eight agencies provided feedback through the County Administrator (six fire departments, County Emergency Management, and the Sherriff's Office) and were forwarded to Fitch & Associates for review. Individual respondents are not identified, but the agencies that provided feedback are listed. The majority of the feedback was associated with the draft reports calculations for missed or "no-show" responses. Much of the remaining feedback was general observations and/or position statements that are summarized. Finally, responses are provided for all specific questions.

Table 40: Agencies that Provided Draft Report Feedback

Responding Agency
Desoto City Fire Department
Highlands Park Fire Department
Lake Placid Fire Department
Venus Fire Department
West Sebring Fire Department
Highlands Lakes Fire Department
Sherriff's Department (during BOCC presentation)
Highlands County Emergency Management

General observations and positions statements have been categorized as either generally supportive or positively oriented comments and those that have constructive criticism and/or dissenting opinions. Every effort was made to provide quotations as they were provided as received without alteration. When feedback was altered or summarized for greater clarity or readability it is clearly identified. Results are presented as Tables 41 and 42 below.

Table 41: Generally Positive or Supportive Feedback

Generally Positive or Supportive Feedback
1. "As to the recommendations of the EMS/Fire Study, I believe the County should consider a consolidated volunteer-wide system to be labeled as Highlands County Volunteer Fire Department."
2. "This will ensure all gear, equipment, and apparatus will match through the County."
3. "... I would like to commend you and the commissioners for taking steps to help improve the fire service in Highlands County."
4. "I am in support of a full consolidation of all the fire districts in the county under one county fire department."
5. "There is some very good points in each of the recommendations in the report. I would urge the Commissioners to look into some of the different options"
6. "Not only should the assessments be equalized across the county, but we should look at increasing them to levels that will address the increased costs of newer equipment/apparatus into the future."
7. "Correcting these data element (sic no shows) issues does not change the fact that the study is right on scope."
8. "I have always found the independent Districts with the "Inc." and their blended relationship with the County a bit challenging – for the very reasons Fitch states."
9. "Having us all under "Highlands County Fire Service" instead of independent districts is something to discuss, and there is the process of eliminating districts, etc."
10. sic (dispatch information is in narrative)... "this does not negate the fact that the CAD still needs replaced."
11. sic (updated CAD and/or process)... "This will make accountability and ALL responder safety more precise."
12. "There is an overabundance of apparatus, as pointed out in the study."
13. "I do agree it will reduce capital expenditures, provide better utilization of fund balance and improve fire and EMS delivery, but not before some of the fund balance is used to expand/update some of the stations to be able to handle both fire and EMS equipment and crews."
14. "The CAD should track the arrival at hospital time and then in service time once the unit is put back together and ready for a call."

Table 42: Constructive Criticism and/or Dissenting Opinions

Constructive Criticism and/or Dissenting Opinions	Outcome
1. “In the <i>FITCH</i> Report it lists that some of the departments have a surplus of funds saved up. This could be misleading to citizens. A new fire engine costs around \$250,000 to \$350,000. There is no way that my department would be able to purchase a new fire truck without saving funds from our annual budget.”	Report Language Updated.
2. “I recognize that the Commission has a timetable, as does <i>FITCH</i> . But I feel that needs to be balanced with a well-vetted review process by the Chiefs, and a “rush to judgment” to meet an arbitrary deadline may not be the best approach...the devil is always in the details”	Report recommends a 3-year implementation period to allow for a measured approach.
3. “Please note that the info the Fitch report listed is totally wrong. If it matters, West Sebring is against the recommendations 100% that they are proposing to the BOCC!”	As with all agencies, references to “no-show” data has been updated in the report as appropriate. A comparison of the West Sebring data provided to us by West Sebring and Fitch’s report shows 98.6% agreement.
4. Fitch summary (not verbatim) – dispatch and CAD captures all unit responses, outcomes, etc. in the narrative that the dispatcher enters manually... the report suggested that the information was not captured.	The salient point was that the information was not effectively captured for data analyses without excessive labor involvement to extract data from each call individually rather than the database. Report Language Updated.
5. “Study suggests that the prevention staff reached 3,800 folks and they may have but not alone...and assistance of volunteers and EOC staff.”	Report Language Updated.
6. “EMS units are not available until they mark with dispatch that they are in service.”	Our understanding of the process is as we stated in the report and was derived from our interaction with the dispatch center and EMS. We confirmed our understanding with the EMS Director.

No-Show Responses

Since the majority of the feedback was oriented to the accuracy of the draft report data on no-show or missing responses, we wanted to specifically address this issue with greater detail. First, the CAD does not capture a distinct data point for “cancelled” calls. In addition, the individual departments fire reporting systems are not integrated with the CAD system. However, the dispatchers are capturing that level of data in their narrative entries. Since the data is not readily available without searching the entire call set incident by incident, the process utilized in the draft report was to capture calls that had a responding time and no arrival time.

The degrees to which the individual fire agencies capture their data and the quality assurance and review processes across the agencies vary. While it is FITCH’s opinion that the data at the individual department level is too variable to utilize as a system review, the agencies that have an accurate accounting of “cancelled” calls and “cancelled enroute” calls provided sufficient data to demonstrate that the process utilized in the draft report is not accurate.

Without identifying any specific agencies, we are confident that missed calls or “no show” events are relatively infrequent overall. Therefore, the report language is updated to appropriately and more accurately describe the issue.

What remains is an opportunity to develop a credible, systematic, and consistent manner to capture and identify calls that went un-served or un-served by “first due” units or agency.

Validation of the Baseline Data

The previous discussion on no-show events provides an opportunity to compare and contrast the data provided by the individual fire departments with the baseline CAD level data provided by the Sheriff’s Department. We received data from five of the six fire departments that provided feedback. Overall, there is a high degree of agreement between the CAD data and the individual fire department’s internal records. Typically, there is some variability between the two data sets; a high level of agreement lends credibility and validity to the baseline data utilized in this report. Of the departments providing data, the overall degree of agreement is 94%. In all cases, the CAD had more events than the individual fire departments’ records. While there are several factors that could contribute to this finding, from a planning perspective the report ensures a more conservative approach to the community’s demand for services and the overall workload of each of the departments. The results are provided as Table 43 below.

Table 43: Percentage of Agreement between CAD and RMS Data

Agency	Cad Incidents	Fire Department RMS	Percentage of Agreement
Desoto City Fire Department	447	369	82%
Highlands Park Fire Department	337	329	98%
Lake Placid Fire Department	102	96	94%
Venus Fire Department	33	31	94%
West Sebring Fire Department	910	897	99%
Total	1,829	1,722	94%

Responses to Specific Questions or Clarifications

Responses to specific questions and/or clarifications are provided below. Questions are presented as direct quotes unless specifically identified that it is summarized. The order of the questions presented is random and not prioritized.

1. How will the future budgetary needs to support full time staffing conflict with the need to replace or purchase new equipment going forward? Where will the money come from?

Alternatives 2 and 3 each handled differently. In Alternative 2, the expansion of personnel services is captured in the increased budget requirement of approximately \$1.1 million. There should be little to no correlated impact between the fire budgets and the full-time career staffing because the budget has been increased for the EMS cross-staffed element and the fire budget (as with Alternative 1) would remain status quo with current operations.

Alternative 3, has several policy decisions that will need to be determined as the leadership and stakeholders begin to move forward. The system design will cover 90% of the calls for service within 10 minutes travel time. Public input, policy decisions, etcetera will determine how many and which stations are to be maintained and how many volunteers are available and/or desired to provide collaborative services. Finally, the capital footprint may be significantly reduced from the current delivery model relieving capital liabilities.

2. Will volunteers still be assigned to specific stations? How will calls be paged out and will volunteers be able to respond to ANY call that they are able throughout the County?

The report did not delineate this level of operational components, as that is a policy decision as any potential models may gain traction. It is better for the system providers and leadership to have the greatest flexibility in design elements under the broad framework provided.

With that said, as fire professionals, we would imagine that you might have both conditions working together. For example, remote areas like Venus may have crews from that area that are primarily

dedicated to assisting in that community as it is today, but maintain the flexibility to respond to any call in the County if they are in the vicinity. In essence, it would be an adaptation of borderless service delivery that is a growing trend across the country.

3. How many stations could potentially be closed down due to the restructuring and consolidation efforts?

Again, this is a policy decision for the Board and system leadership as you move forward. Fire stations are placed in communities for a wide variety of reasons including political or economic reasons that may not be directly correlated to planning efforts. *FITCH* believes that expectations for service and the related policy to meet those community expectations are set at the local level.

The planning analyses that we completed do suggest that (Figure 34) for 3- years of data (2012-2014) 90% of all of the fire related incidents could be responded to within 10 minutes travel time from five (5) existing fire station facilities. While this an accurate statement, it is important to understand that if you maintain a volunteer service without duty crews or career staff, you would still have account for the turnout or muster time for volunteers to respond to the station. If current turnout time remained consistent, at the 90th percentile, system service delivery would be approximately where it is today for fire related services.

Consolidated models, Alternatives 2 and 3, would require six (6) stations (Table 39 and Figure 36) to cover 90% of all of the communities requests for service for both fire and EMS incidents within 10 minutes travel time or less. This would maintain current EMS performance and improve fire related services by six (6) minutes.

Therefore, the policy decision that remains is how does the system account for the last 10% of the calls. Maintaining volunteer forces in those remote areas with extremely low call volume would be the most cost effective manner.

4. What will Venus see under a County “volunteer” department or under another operational model?

Please refer to the response provided under Question 3 above for any consolidated models with EMS. With respect to a countywide volunteer agency (Alternative 1), our suggestion did not include any changes to the existing deployment model but rather focused on improving oversight, accountability, and coordination and support for the volunteer forces. In addition, it would distribute the revenue generated throughout a countywide assessment rather than the multiple districts. Our proposal, which is a starting point for the policy makers, would generate the same revenue that the current system generates.

5. Would a model with more unity be beneficial to all Districts?

There is a distinction between a system that benefits the system or community and those that specifically benefits the individual perspective of each district. Our approach was to evaluate the needs of the system as a whole and make recommendations that provide the highest level of service within the available funding. From a system perspective, the design provides commensurate service levels throughout the county based on service design rather than available funding restricted to an individual district.

Overall, it is our expert opinion that a countywide approach is most advantageous to meet the community's demands for services as well as provide for long-term sustainability and publicly accountable services. It is also the most advantageous to provide for greater support, standardized equipment, standardized training, and firefighter safety.

6. Would it increase response time?

This response assumes that "increase" means improve. The system design will improve the response time to 90% of the fire related incidents by approximately 6 minutes. The response time to EMS incidents will maintain current performance and a marginal improvement are expected.

7. Would it see upgraded equipment and facilities?

One of the intended outcomes from the Alternatives presented is that expenditures will be spent based on need rather than restricted to the individual district's capability to generate revenue. From this perspective, we would imagine that overtime equipment is standardized, and in many jurisdictions, that will be a considerable upgrade. Second, with the opportunity to consolidate the capital requirements throughout the system, there may be more funds available to distribute across the facilities required for each alternative.

It is our assumption that significant capital investment in the fire and EMS services is necessary regardless of the model. For example, the BOCC is currently moving forward with several EMS station rebuilds or upgrades. Finally, our recommendations encourage the BOCC to build larger stations capable of maintaining 24/7 operations and both fire and EMS services to have the greatest flexibility for the future.

Estimates were provided in the presentation for Estimated System Startup and Conversion Costs on pages 56 and 57 only for those stations identified in our modeling. However, capital planning and investment remains a policy decision as the providence of the BOCC.

8. How would the tax assessment be affected? More? Less?

There were minor variations in the tax assessment across the communities. We provided a table in the Presentation on page 59. This table can be utilized to establish what, if any, changes may occur within any specific district.

Again our proposal generates the same revenue as is currently generated at approximately \$1.6 million.

9. If the EMS personnel were also firefighters, when enroute, do they pick up an apparatus?

This is a policy decision for the BOCC and system leadership. This level of detail is left to the system experts to establish policy. As designed, unit availability should be highly reliable for the majority of the fleet at any one time. The design is to have apparatus available onsite for the crews to take the appropriate apparatus to the appropriate call. In conditions where units were on the road already, a mixture of units would be acceptable as once the pumping capacity has been satisfied it is more about personnel than the apparatus they arrived on.

The point is excellent, as systems that have cross-staffed units must maintain shift supervisory command to identify unique situations and ensure an effective response.

10. If they (sic EMS) are additional personnel onscene, will that reduce our EMS response personnel?

The system is designed to handle the typical demand for services so it should not have an adverse impact on either service with 10 full time units. When the rare events occur that require long-duration events, EMS response capabilities will be reduced for that time period. That is why it is suggested that the volunteer forces remain an integral part of the system, regardless of the alternative, so that the volunteers can relieve the on-duty crews for longer-duration events and maintain EMS services. Across the nation, actual structure fires are typically a very small percentage of the overall call volume (1%). Units can be relieved within a reasonable timeframe where the system may only be impacted for an hour or two on those rare occasions.

From a policy perspective, the system could set a bottom threshold for units when those events occur. For example, two or three units remain available for EMS responsibilities. In addition, more robust aid agreements could be developed with the private ambulance company to handle overflow 911 calls during those rare occasions.

11. Alternative 2, has a manpower short fall. (Summarizing...) How can two-additional cross-trained personnel handle the demand for services?

The ability to cross-staff apparatus and optimally utilize personnel provides for an efficient and effective manner to staff and deploy. A synergistic effect occurs that allows the system to utilize the full scope of the EMS services to assist in the delivery of fire related responses. For example, when referring to Figure 34 of the data report, as previously discussed, the most efficient use of stations would be five (5) stations to cover 90% of all fire related requests for service with a 10 minute travel time. The five (5) stations cover the geographic requirements. In addition, when referring to Table 27 and Figure 22 of the data report, it illustrates that volunteer department requests for service do

not exceed 0.35 calls per hour on average. Therefore, at a maximum it would require one unit to cover the demand for services. The summation of the geographic requirements (5 stations) plus the demand (1 unit) would require 6 units to respond to 90% of all of the fire related calls that occur in Highlands County with a 10 minute travel time. As cross-staffed units, this is well within the 10 units recommended.

Since Alternative 2 and 3 are consolidated efforts between Fire and EMS it is most efficient to combine the two demands (EMS and Fire) to determine the total community demands for service. When combining both EMS demand and Fire related demand for services the demand for services remains beneath the four (4) additional units recommended. For example, when referring to Figure 36, either of the consolidated alternatives would require six (6) stations to respond to 90% of all requests for service with a 10 minute travel time or less. An additional four (4) units allocated specifically to cover the demand would bring the total resources to 10.

The explanation is provided in graphical form as well to illustrate the resource allocation and capacity of the alternatives as described. When referring to Figure 37, the red line is the average combined demand with all fire and EMS incidents for 2014. The blue line is indicative of the number of resources allocated specifically to handle the demand for services. The green line is the total number of resources available in the system when combining the six (6) geographical units to cover the travel time objective of 10 minutes to 90% of all requests for service added to the four (4) demand units.

In other words, when the system is at an average demand or less, there will be a minimum of six units still available to answer calls. This analysis includes all of the requests for service for the fire departments as well as the requests for service for EMS and includes approximately 880 incidents where both EMS and Fire co-responded. Finally, since approximately 1% of the system demand is afforded to brush, vehicle, and structure fires combined, capacity resides in the system to handle multi-unit responses.

Figure 37: Average Consolidated System Demand by Hour of Day

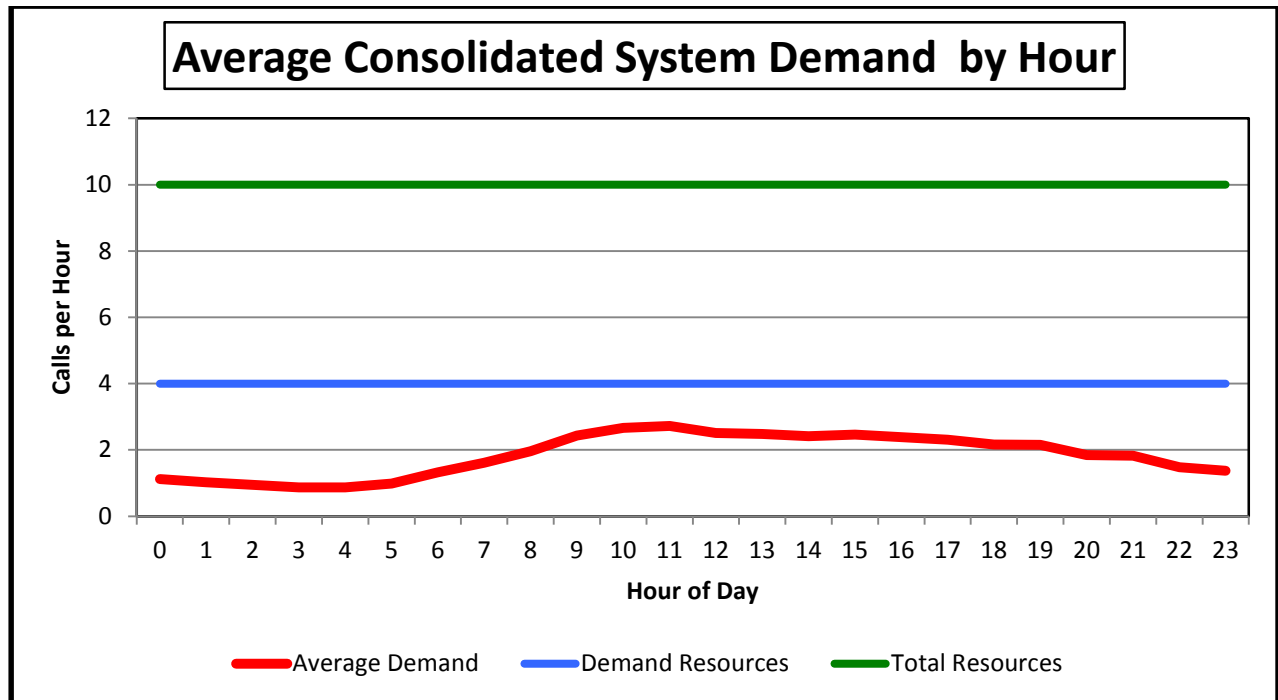
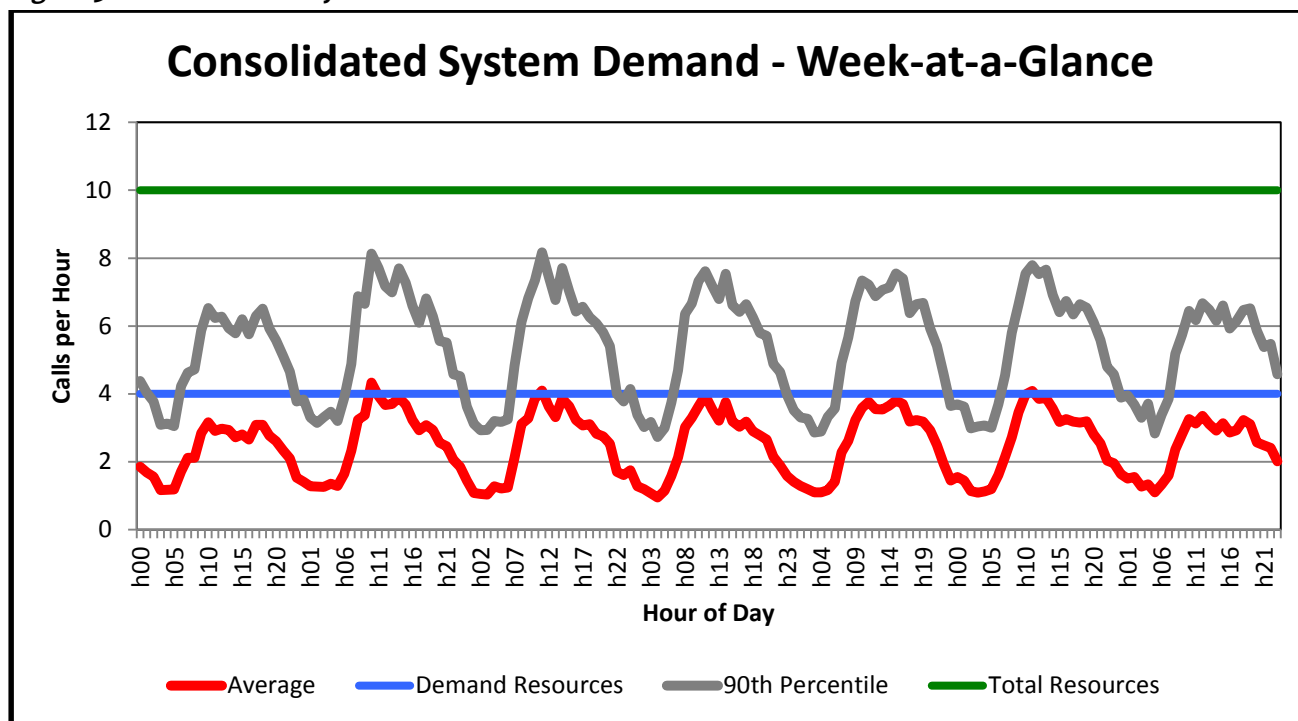


Figure 37 assumes that the annual calls are equally distributed across each of the 24 hours of a day. However, some variation does occur when examining by each specific day of the week. In essence, the results are the average “high” for this daily variance by day of week and hour of day. Therefore, a week at a glance from the actual call volumes is created to demonstrate the validity of system design. In this example, the busiest days are the weekdays and the busiest hours are approximately between 0800 and 1400. The maximum average demand resides at four units (the red line). In addition, 90% of the busiest efforts reside at approximately eight (8) units (the grey line). In other words, at average demand there are six (6) units available for calls and at the busiest times, there are still two (2) units available to handle calls. This is a conservative approach that assumes that all calls occur concurrently. Please refer to Figure 38 below:

Figure 38: Consolidated System Demand - Week at a Glance



12. How can Alternative 3 be cost neutral and cover 1,100 square miles of the County?

This is an incremental cost estimation from Alternative 2 to Alternative 3. In Alternative 2, the entire county is designed to respond to 90% of all of the requests for service within 10 minutes or less travel time. This analysis and projection is based on three years of actual historical call volume in the county including 2012, 2013, and 2014. Alternative 2 suggested recurring costs of approximately \$1.1 million to cover the increased staffing and salaries associated with the model.

Alternative 3 has suggested that the costs could be *near* neutral because policy decisions and additional stakeholders may influence how robust the volunteer component remains. For example, in Alternative 3 the countywide ordinance is suggested (as a starting point) to generate the equivalent dollars that is generated today; approximately \$1.6 million. The new system would require \$1.1 million leaving approximately \$500k per year to support the volunteer programs or any of the additional personnel suggested for the County structure.

The system is designed to handle the call volume, with some assistance from the volunteer forces to assist on longer duration events, natural disasters, etc. What remains a policy decision moving forward is defining the appropriate and desired number of volunteer positions, apparatus, and stations. Those decisions will drive and/or control costs. If the assumption were to maintain status quo regarding the volunteer services, then the revenue generated would be dedicated to the fire service, which is Alternative 2.



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