

FIRE AND EMERGENCY SERVICES - 22160

The Division of Fire and Emergency Services provides fire and life safety education, fire suppression, rescue, and Emergency Medical Services (EMS) to the community. The combination workforce of volunteer and career personnel is supported in its mission by the Mansfield Firefighters Association. The Division operates out of three strategically placed fire stations and responds to approximately 2,000 calls for service each year.

FY 2014/2015 Accomplishments

- The department received funding for one additional full time firefighter in FY 2014/15. The total number of full time firefighters is now thirteen.
- Received delivery of a replacement Engine Tank. ♦
- Conducted an entry level firefighter hiring process for both part time and full time firefighters. ♦
- Adjusted the membership of the Volunteer Personnel Committee to improve recruitment and retention of volunteer membership. ♦
- Continued to staff the EMS (Emergency Medical Service) Duty Crew Program during select periods and volunteer availability. The program affords greater participation for volunteer members, a reduction in the Division's reliance on mutual aid ambulances, and an increase in ambulance revenue. ♦
- Added a third ambulance to the fleet to ensure adequate EMS response capability. ♦
- Improvements were made to the Department's communication system with the installation of a base station radio at Stations 107 and 207; all three fire stations have now been upgraded. ♦
- Continued the GIS (Geographic Information System) mapping project. The maps provide detailed information on infrastructure critical to service delivery. GIS has enabled the Department to prioritize locations for dry hydrant installations as part of the Water Supply Improvement project. ♦
- Installed four dry hydrants as part of the Water Supply for Fire Protection Improvement project. ♦
- Continued to familiarize members with the on-going changes to Storrs Center through training walkthroughs of the construction site. Walkthroughs improve responders' effectiveness when answering calls for service. ♦

FY 2015/2016 Trends & Key Issues

Multiple and overlapping calls for emergency services will continue to strain the department's ability to provide service in a timely manner, especially during weekday, daytime hours. Staffing improvements, training, mutual aid partnerships, response protocols, and apparatus and equipment needs must be continually assessed. Continued support for the pay-as-you-go capital plan is critical to maintaining reliability of the Division's fleet and to control apparatus maintenance costs. Replacement of Engine Tank 507 with a Tanker will enhance department operations in areas without pressurized hydrants and address one component of the ongoing water supply for fire protection improvement project. The need to improve the Division's rank structure persists as many volunteer officer positions remain unfilled. The Division will address this by providing opportunities for professional development, evaluating position duties and responsibilities, assessing promotional qualifications and seeking financial enhancements to the Volunteer Benefits Program.

FY 2015/2016 Goals & Objectives

Goal: Determine impact on shift staffing following the appointment of the 13th full-time firefighter position for which the department received funding in 2014/15. ♦

Objectives:

- Analyze shift staffing assignments for FY 2014/15.
- Determine how 13th full-time position has impacted salary expenditures.

Goal: Evaluate shift staffing models that provide the efficient assignment of full and part time personnel. ♦

Objectives:

- Investigate fire department staffing models.
- Determine the most efficient assignment of full time and part time personnel.
- Evaluate impact of various staffing models on department operations.

Goal: Review and update existing and identify new Standard Operating Guidelines. ♦

Objectives:

- Standardize response to managing emergency incidents.
- Incorporate safe practices into Division activities.
- Formalize Division expectations of all personnel operating in emergency and non-emergency circumstances.

Goal: Continue development of Geographic Information System mapping. ♦

Objectives:

- Enhance incident management planning.
- Continue on-going assessment of resource allocation and service delivery.
- Link inspection activity and pre-fire planning.
- Identify and prioritize water source improvements.

Goal: Expand and support Volunteer EMS Duty Crew program. ♦

Objectives:

- Maintain up to 3 ambulances in service during times of increased call volume.
- Increase participation in EMS Duty Crew program; maximize response to both EMS and Fire incidents through increased available personnel.
- Promote volunteer ownership of a Department program.
- Improve volunteer recruitment and retention.

Goal: Improve professional development of members through targeted training opportunities. ♦

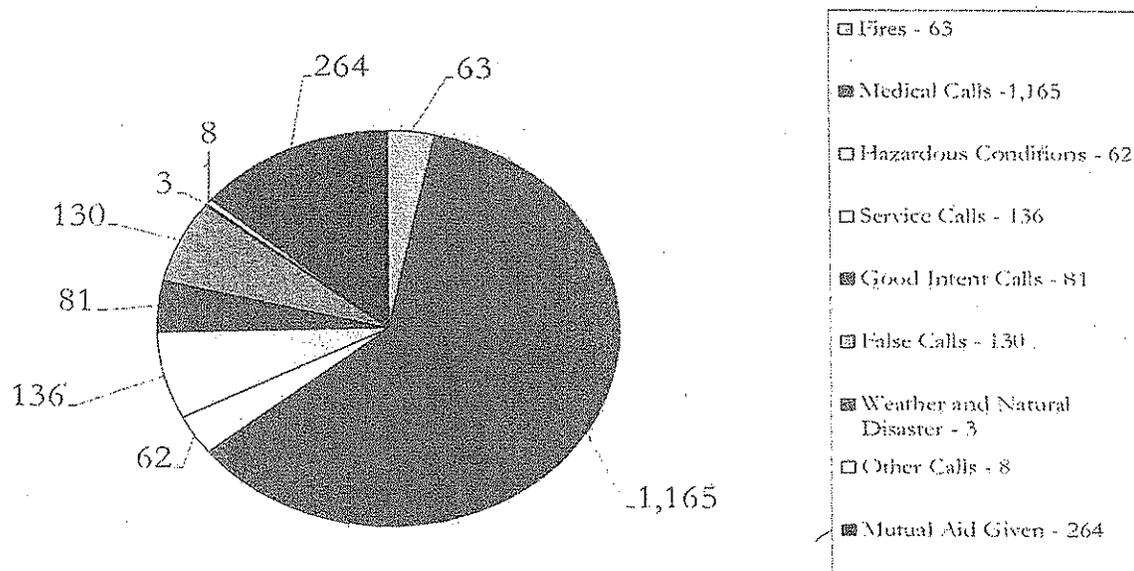
Objectives:

- Provide support to employees and volunteers in achieving their professional goals.
- Prepare personnel to become officers of the Department.
- Conduct officer promotional processes to fill in the Department's rank structure.
- Identify areas of weaknesses to improve capability.
- Improve quality of service to the community.

♦ Denotes accomplishment, goal or objective links to the Town's nine strategic vision points.
Fire and Emergency Services = linkage to Public Safety

Fire and Emergency Services	FY 13/14 Actual	FY 14/15 Projected	FY 15/16 Proposed
Fire Incidents			
Structure fire incidents	22	16	14
1 and 2 family structure fire incidents where flame spread was confined to object or room of origin	9	10	10
1 and 2 family structure fire incidents where flame spread was confined to floor or structure of origin	6	4	4
Percentage of fire calls responded to within 5 minutes from conclusion of dispatch to arrival on scene	36%	38%	38%
Fire incidents involving non-structures	39	30	30
False Alarm Calls	211	200	200
EMS			
EMS responses	1,165	1,370	1,300
Percentage of patients in cardiac arrest from medical causes delivered to a medical center with a pulse	0%	25%	45%
Percentage of EMS emergency responses within 8 minutes from PSAP to arrival on scene	79.8%	78%	78%

**Actual Calls for Fire and
Emergency Medical Services in 13/14**

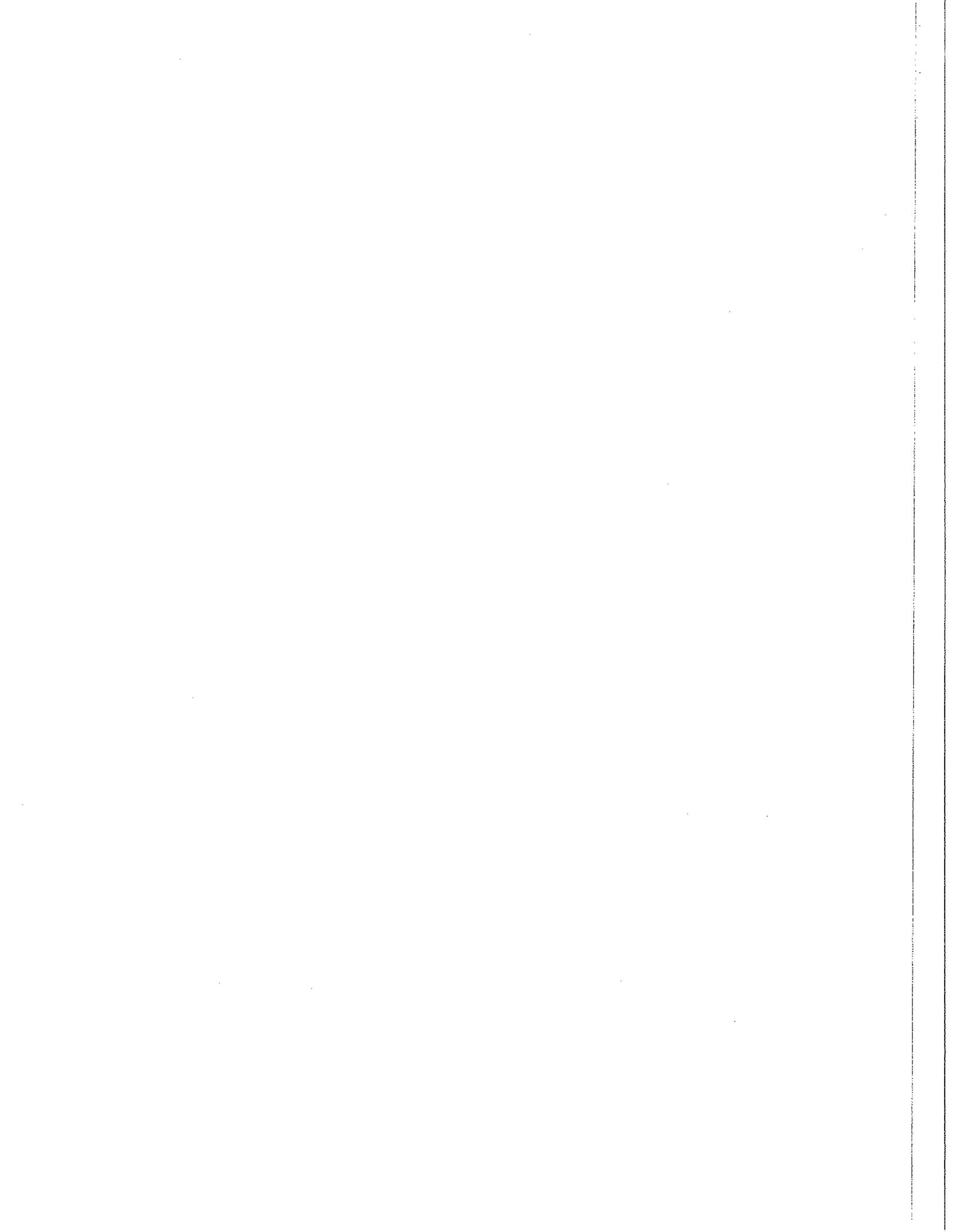


Town of Mansfield
 Department: Fire & Emergency Services Administration - 22155

Description	FY 13/14 Actual	FY 14/15 Adopted	FY 14/15 Amended	FY 14/15 Estimated	FY 15/16 Proposed
Expenditures:					
Salaries and Wages	179,341	198,145	202,875	202,875	207,185
Misc Benefits	2,098	2,000	2,000	1,850	2,000
Prof & Tech Services	1,540	2,000	2,000	2,000	2,310
Other Purch Services	40,500	40,500	40,500	40,500	40,500
School/Library Books		200	200		
Office Supplies	527	750	750	750	750
TOTAL EXPENDITURES	224,006	243,595	248,325	247,975	252,745
TOTAL REVENUES					
EMPLOYEE BENEFITS	67,443	78,212	78,212	76,361	84,242
Positions:					
Fire Chief	1.00	1.00	1.00	1.00	1.00
Administrative Analyst	1.00	1.00	1.00	1.00	1.00
Total Full Time Equivalentents	2.00	2.00	2.00	2.00	2.00
Paid from Other Funds	0.45	0.45	0.45	0.45	0.45
Paid from General Fund	1.55	1.55	1.55	1.55	1.55

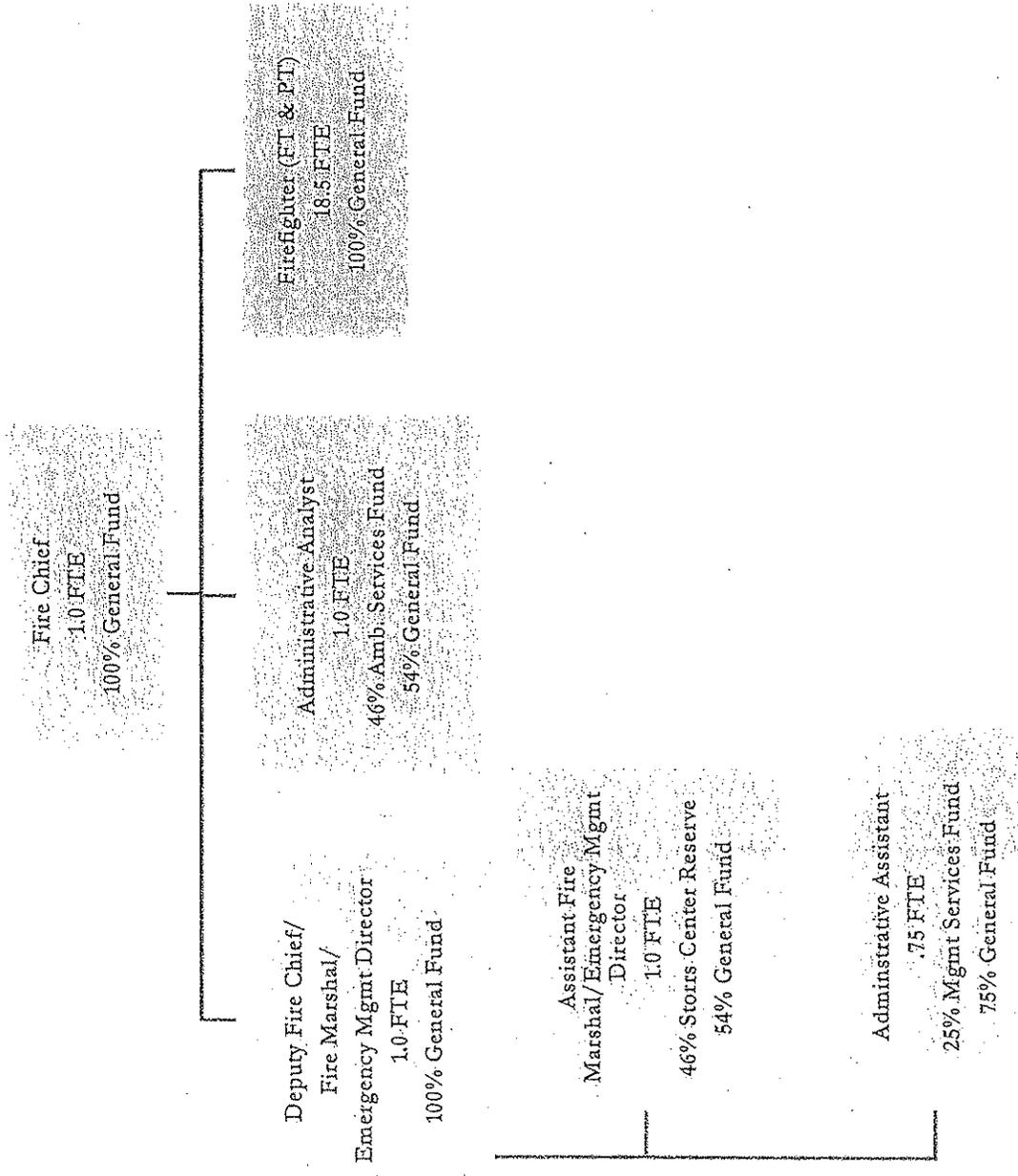
Town of Mansfield
Department: Fire & Emergency Services - 22160

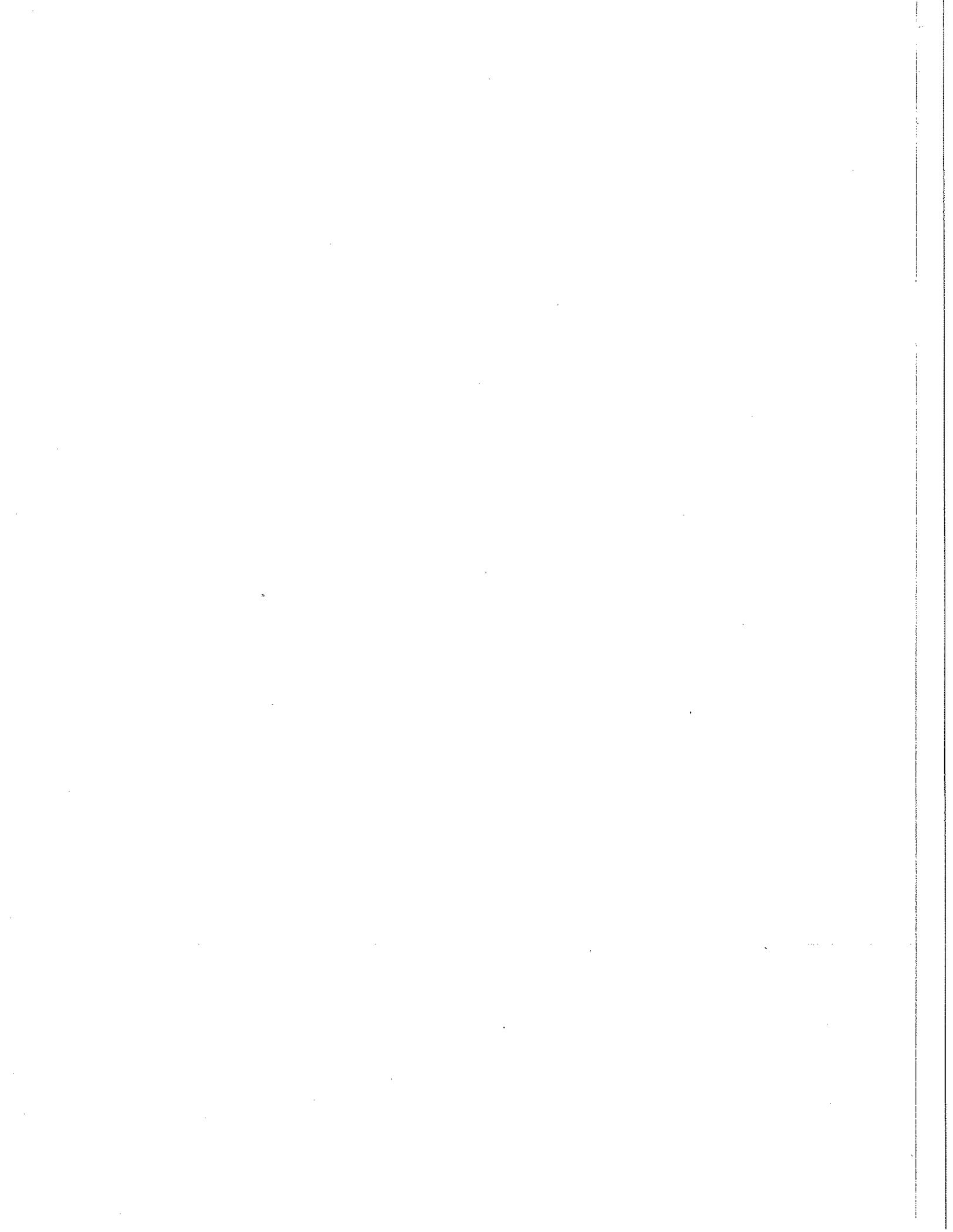
Description	FY 13/14 Actual	FY 14/15 Adopted	FY 14/15 Amended	FY 14/15 Estimated	FY 15/16 Proposed
Expenditures:					
Salaries and Wages	1,284,629	1,316,260	1,316,260	1,379,010	1,349,670
Misc Benefits	37,801	48,780	48,780	46,550	57,540
Prof & Tech Services	13,440	17,500	17,500	17,300	17,500
Repairs/Maintenance	93,319	78,000	78,000	102,690	89,000
Insurance	59,154	62,830	62,830	65,045	7,810
Other Purch Services	56,300	56,590	56,590	56,162	58,710
School/Library Books	15	500	500		500
Office Supplies	26,304	23,500	23,500	22,000	27,500
Energy	180	900	900	900	900
Building Supplies	11,748	14,000	14,000	12,000	12,000
Rolling Stock Supplies	38,303	35,000	35,000	40,000	48,000
Other Supplies	10,649	16,500	16,500	16,000	16,000
Equipment	5,225	8,000	8,000	8,000	8,000
TOTAL EXPENDITURES	1,637,067	1,678,360	1,678,360	1,765,657	1,693,130
TOTAL REVENUES					
EMPLOYEE BENEFITS	483,100	519,556	519,556	519,052	548,780
Positions:					
Firefighters - Fulltime	12.00	13.00	13.00	13.00	14.00
Firefighters - Parttime	4.50	5.00	5.00	5.00	4.50
Total Full Time Equivalent	16.50	18.00	18.00	18.00	18.50
Paid from General Fund	16.50	18.00	18.00	18.00	18.50



Division of Fire and Emergency Services

(Fire Prevention * Fire & Emergency Services Admin * Fire & Emergency Services * Emergency Management)







Mansfield Fire Department Structure & Staffing

Organization
Staffing
Calls for Service
Population / Demographics
Trends
Recommendations



Mansfield Fire Department Structure & Staffing

Factors influencing organization, staffing and resource deployment:

- Response Time
Time to Assemble Appropriate Resources
• Qualified Personnel / Suitable Equipment / Mutual-Automatic Aid
Time to Commit of Resources to Operational Priorities
Calls for Service
• by Volume
• by Type



Staffing Metrics



Fire Service Staffing

National Fire Protection Association (NFPA) 1710, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Deployment to the Public by Career Departments*, 2004 edition:

- "Four on-duty personnel for each fire company"

NFPA 1720, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Deployment to the Public by Volunteer Departments*, 2004 edition:

Demand Zone	Minimum Staff to Respond
• Urban Area (>1,000 people/sq. mi.)	15
• Suburban Area (500 - 1,000 people/sq. mi.)	10
• Rural Area (<500 people/sq. mi.)	6



Combination Workforce

Career Firefighters

Volunteer Members



Fire Service Staffing (cont.)

Occupational Safety and Health Administration (OSHA),
Respiratory Protection Standard, 29 CFR 1910.134:

"Two in / Two out" Rule

- Requires that at least two employees enter the Immediately Dangerous to Life or Health (IDLH) atmosphere and remain in visual or voice contact with each other at all times.
- Requires that at least two employees be located outside the IDLH atmosphere whenever employees are in an IDLH atmosphere.

Fire Service Staffing (cont.)

NFPA Fire Protection Handbook, 20th edition (2008):

Minimum numbers of firefighters / officers at the following type of fires:

- 17 to rural alarms (scattered dwellings, small businesses and industrial occupancies)
- 19 - 23 to low-hazard occupancies (one-, two-, or three-family dwellings and scattered small businesses and industrial occupancies)
- 21 to medium-hazard occupancies (apartments, offices, mercantile and industrial)
- 30+, to high-hazard occupancies (schools, nursing homes and other high-life hazard occupancies)

Fire Service Staffing (cont.)

**International City Management Association (ICMA),
Managing Fire and Rescue Services, 2nd edition, 2002:**

At least four and often eight or more firefighters, each under the supervision of an officer, should respond to fire suppression operations.

If ~16 firefighters are not operating at a working fire in a timely manner dollar loss and injuries are significantly increased.

Effectiveness of firefighting companies:

- ~~five-person~~ fire companies are - 100% effective
- ~~four-person~~ fire companies are - 65% effective
- ~~three-person~~ fire companies are - 38% effective

Fire Service Staffing (cont.)

U.S. Fire Administration (USFA):

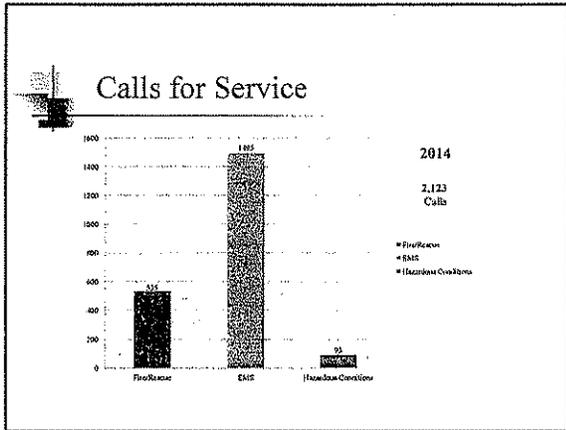
Minimum of four firefighters to respond on or with each fire apparatus.

NFPA 450, Guide for Emergency Medical Services and Systems, 2009 edition:

Four responders are the minimum required for Advanced Life Support.

NFPA Fire Protection Handbook, 19th edition (2003):

Fire department emergency medical service transports need additional personnel to maintain basic firefighting strength.



Questions ?

Department Structure

 Career / Volunteer Membership

Combination Workforce

 Career / Volunteer Membership

Combination Workforce

21 Career Firefighters (Firefighter/EMTs)
13 Full Time
8 Part Time

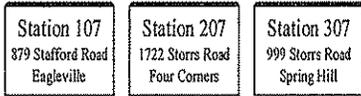
 Career / Volunteer Membership

Combination Workforce

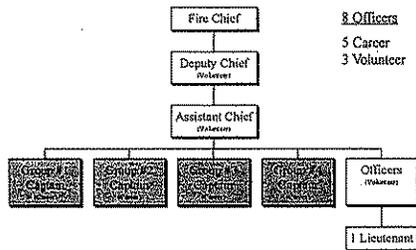
21 Career Firefighters (Firefighter/EMTs)
13 Full Time
8 Part Time

~ 60 Active/Inactive Volunteer Members
Firefighter-EMTs
Firefighters
EMTs
Fire-Police
Support Personnel

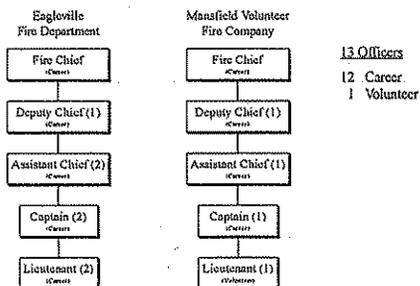
Fire Stations



Officers – Operation Division

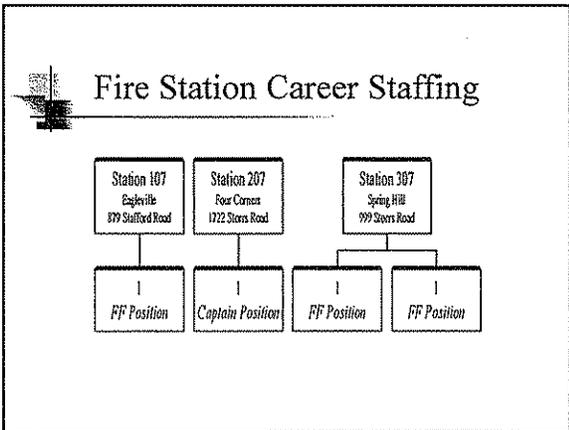


Officers – Pre-Consolidation (2005)



Questions ?

Career Firefighter Staffing



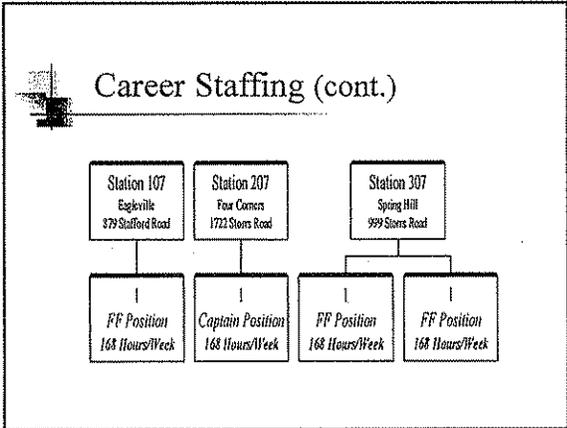
Position vs. Personnel

1 Firefighter *Position*

requires

168 staff hours / week

24 hours/day X 7 days/week = 168 hours
(2-12 hr shifts)



Position vs. Personnel (cont.)

1 Firefighter *Position*

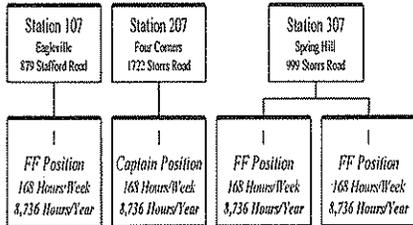
requires

8,736 staff hours / year

168 hours/week X 52 weeks = 8,736 hours

Typical Staff Person @35 hours/week = 1,820 hours/year
 Typical Staff Person @40 hours/week = 2,080 hours/year

Career Staffing (cont.)



Position vs. Personnel (cont.)

1 Firefighter Position
requires
4 Firefighting Personnel
(4-FTE)

Position vs. Personnel (cont.)

4 Firefighting Personnel each work: 42 hours per week
(1 Position = 4-FTE)

4 Firefighting Personnel X 42 hrs. per week = 168 hours
(1 Position = 4-FTE)

Position vs. Personnel (cont.)

1 Full-Time Firefighter (1-FTE) works:

2,184 hours per year
(42 hours per week X 52 Weeks)

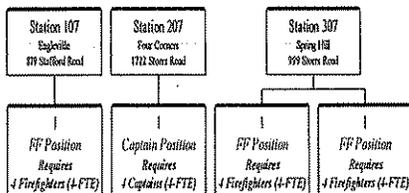
Typical Staff Person @35 hours/week = 1,820 hours/year
Typical Staff Person @40 hours/week = 2,080 hours/year

Position vs. Personnel (cont.)

4 Full-Time Firefighting (*Personnel*)
(1 Position = 4-FTE)
work

8,736 hours per year
(4 Firefighters X 42 hours per week X 52 Weeks)

Career Staffing (cont.)





Questions ?



Staffing by Groups



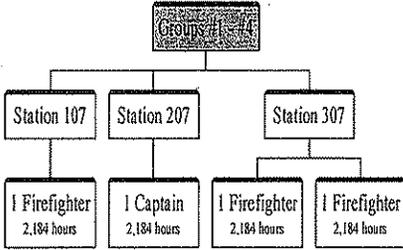
Position vs. Personnel (cont.)

1 Firefighter *Position*

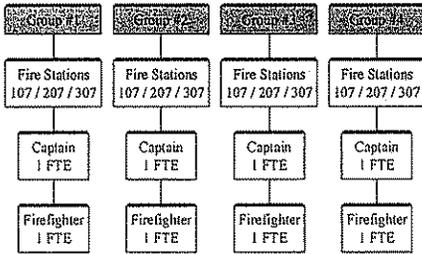
requires

4 Firefighting *Personnel*
(4-FTE)

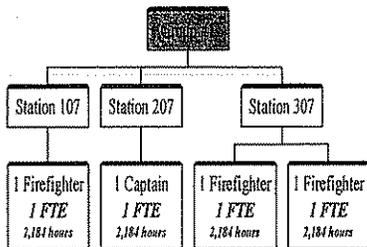
Fire Station / Group Staffing (cont.)



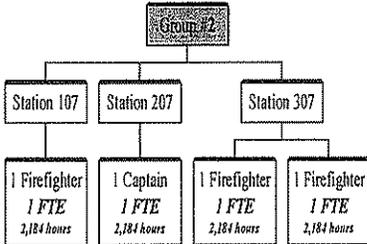
Career Staffing by Group



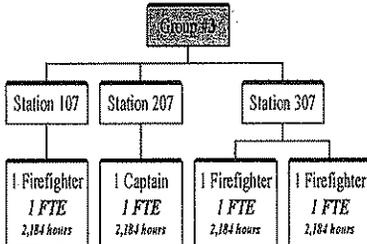
Career Staffing by Group (cont.)



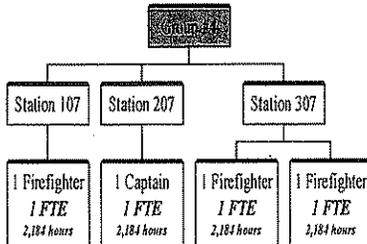
Career Staffing by Group (cont.)



Career Staffing by Group (cont.)



Career Staffing by Group (cont.)



Questions ?

Additional Staffing Considerations

Position vs. Personnel (cont.)

1 Full-Time Firefighter (1-FTE) works:

2,184 hours per year
(42 hours per week X 52 Weeks)

 Position vs. Personnel (cont.)

1 Firefighter *Position*
(4 Firefighters / 4-FTE)
requires

8,736 staff hours / year

2,184 hours/year/firefighter X 4 Firefighters = 8,736 hours

 Position vs. Personnel (cont.)

4 Firefighter *Positions*
Require 16 Firefighters *(Personnel / 4-FTE)*
to Staff all Shifts on all 4 Groups

4 Firefighter Positions X 8,736 hours per year = 34,944 hours
16 Firefighter FTEs X 2,184 hours per year = 34,944 hours

 Shift Coverage for Leave

24 / 7 Staffing

Shift Coverage for Leave (cont.)

Vacation, Sick, Bereavement, Personal, Compensatory,
Training, Special Assignments:

5,742 hours per year

Injury Leave, Resignations, Retirements, etc...:

(Average of Fiscal Years '13/'14/'15)

1,351 hours per year

Total: 7,093 Hours per year

Shift Coverage

To Staff 4 Firefighter *Positions* on all Groups

16 Firefighter FTEs @24/7 Coverage: 34,944 hours

Shift Coverage for Leave: 7,093 hours

Total: 42,037 hours

Department Staffing

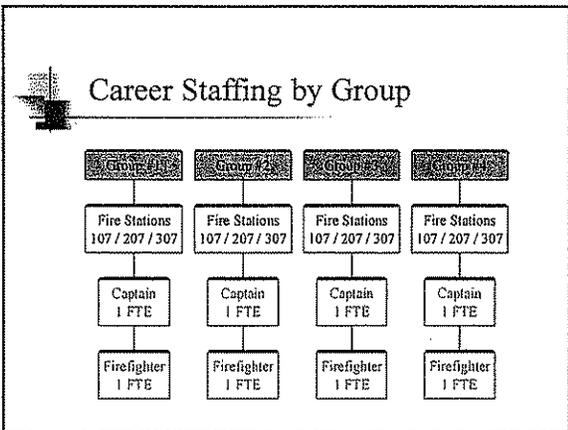
**Career Firefighter
Deployment**
Full-Time / Part-Time

Staffing – Fiscal Year 2013 - 14

16 Firefighter FTEs Required
to Staff all Shifts on all 4 Groups

12 of the 16 Firefighter FTEs are Full Time Employees

4 of the 16 Firefighter FTEs use Part Time Employees



Staffing – Fiscal Year 2013 - 14

3 of 4 Positions Staffed with 12 Full-Time Firefighter FTEs

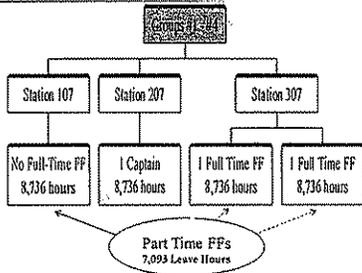
4th Position Staffed with Part-Time Firefighters on Groups #1 - #4
(assumes full staffing with 12 Full-Time Firefighters and peak period / shift coverage / special event staffing with Part-Time Firefighters)

4th Position Staffing: 8,736 hours

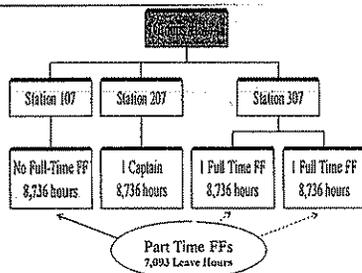
Shift Coverage for Leave: 7,093 hours

Total: 15,829 hours

Staffing – Fiscal Year 2013 - 14

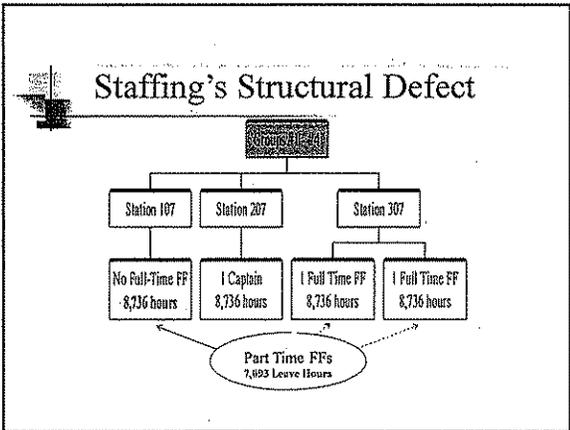


Staffing's Structural Defect



Questions ?

5 / 4 Staffing Model



Staffing – Fiscal Year 2014 - 15

16 Firefighter FTEs Required
to Staff all Shifts on all 4 Groups

13 of the 16 Firefighter FTEs are Full-Time Employees

3 of the 16 Firefighter FTEs use Part Time Employees

Staffing – Fiscal Year 2014 - 15

13 Full-Time Firefighter FTEs (Personnel)

4th Position staffed with Part-Time Firefighters on Groups #1 - #3

4th Position on Group #4 staffed using the 5/4 Staffing Model
(assumes staffing peak period / Leave / special event staffing with Part-Time Firefighters)

5th / 4th Position Staffing: 7,332 hours

Shift Coverage for Leave: 7,093 hours

Total: 14,425 hours

Staffing – Fiscal Year 2013 - 14

RECALL 12 Full-Time Firefighter FTEs (Personnel)

3 of 4 Positions Staffed with 12 Full-Time Firefighter FTEs

4th Position Staffed with Part-Time Firefighters on Groups #1 - #4
(assumes full staffing with 12 Full-Time Firefighters and peak period / shift coverage / special event staffing with Part-Time Firefighters)

4th Position Staffing: 8,736 hours

Shift Coverage for Leave: 7,093 hours

Total: 15,829 hours

Questions ?

Break ?

Part-Time
Firefighter
Hiring

Part-Time Firefighter Hiring

Part-Time Firefighter hiring has been conducted seven times since consolidation in 2005:

2005
2007
2008
2009
2011
2013
2014

Part-Time Firefighter Hiring Tasks / Expenses

Job Posting	HR / Manager's Office	30	\$1,470
Written Exam	Chief's Office	5	\$ 355
Oral Exam	HR/Manager's Office	30	\$1,470
Eligibility List	HR/Manager's Office	20	\$1,025
Chief's Interview	Chief's Office	22	\$1,270
Job Offer	HR / Manager's Office / Trooper's Office	36	\$3,170
	Exam costs		\$2,145
			Total - \$5,315
Orientation	Chief's Office / RO Training Staff / New P/Ts	227.5	\$23,055
Employment	New PT Firefighters	900	\$18,050
Uniforms & PPE	Chief's Office/ PPE Coordinator / Fire Marshal Office	14	Staff - \$385 Uniforms - \$4,190
			Total - \$4,575
Total Cost		1,285.50	\$54,595
Cost to Hire 1 PT FF			\$10,919

Part-Time Firefighter Hiring (cont.)

Part-Time Firefighters Hired Since 2005:

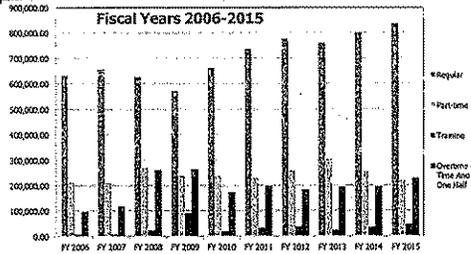
27

Part-Time Firefighter Retention Rate:

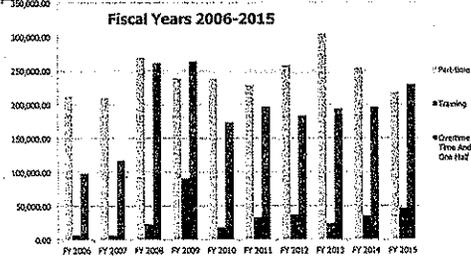
19.5%

Salary Expenditures

Salary Expenditures



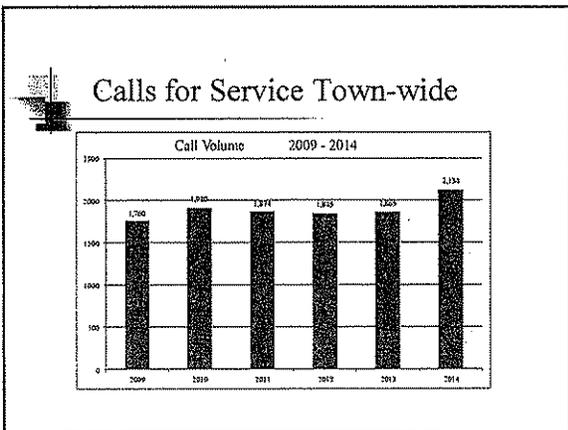
Salary Expenditures



Calls for Service
Town-wide

Calls for Service (cont.)

In Progress
vs.
Post Event





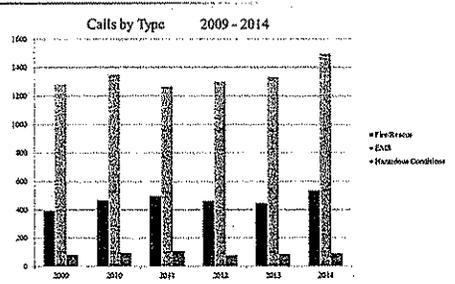
Calls for Service Town-wide (cont.)

Calendar Year 2015

All Call Types projected > 2,200



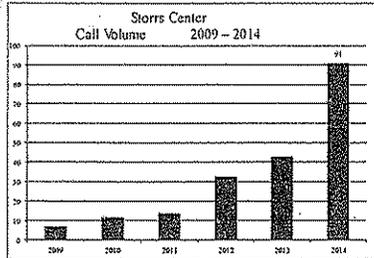
Calls for Service Town-wide (cont.)



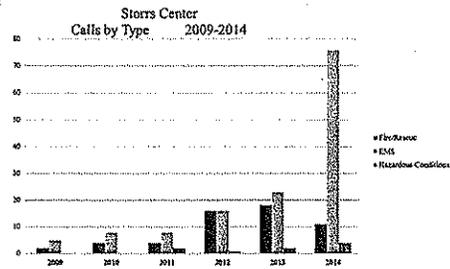


Calls for Service Storrs Center

Calls for Service Storrs Center (cont.)



Calls for Service (cont.)



Calls for Service Storrs Center (cont.)

Calendar Year 2015
 Storrs Center
 All Call Types projected >100



Calls for Service Storrs Center (cont.)

Calendar Year 2016 +
Storrs Center

Phase 2

- 204 Additional Residential Units (Studio - 3 Bedroom)
- Commercial and Retail Occupancies

Phase 3

- 20 Townhouses / 20 Condos



Questions ?



Overlapping & Multiple Calls



Overlapping / Multiple Calls

27.2% of all calls for service involve overlapping or multiple calls

31.3% of calls for service during weekend peak periods involve overlapping or multiple calls

* Based on a 12-week analysis of calls from July 27th to October 19th, 2014



Ability to Assemble Resources (personnel and equipment)

Commitment of Resources to Operational Priorities



Mutual Aid

Mutual
vs.
Automatic

Mutual Aid

	Given	Received
FD #1	85%	15%
FD #2	75%	25%
FD #3	23%	77%
FD #4	70%	30%

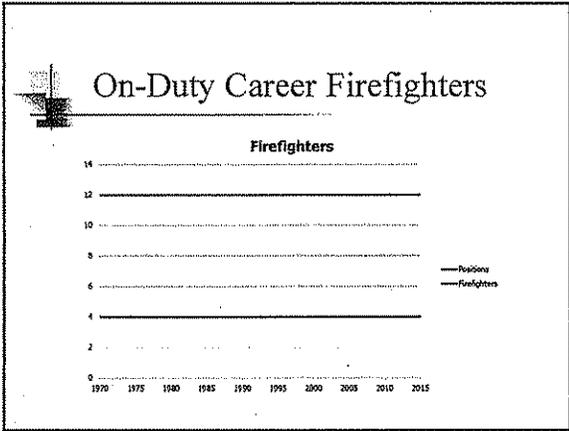
Mutual Aid

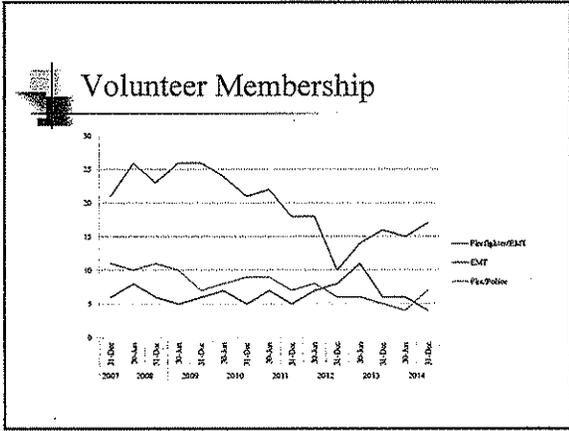
2009 - 2014

Given to another department by the Mansfield Fire Department: 1,435

Received by the Mansfield Fire Department from another department : 1,437

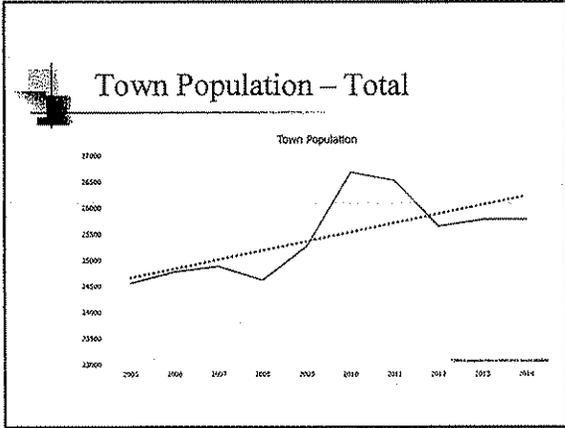
Career Staff Volunteer Membership

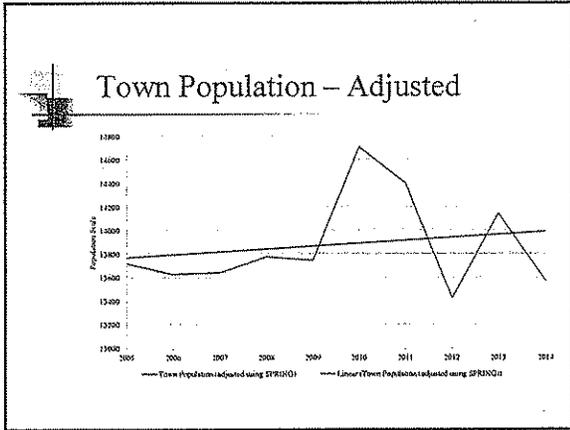


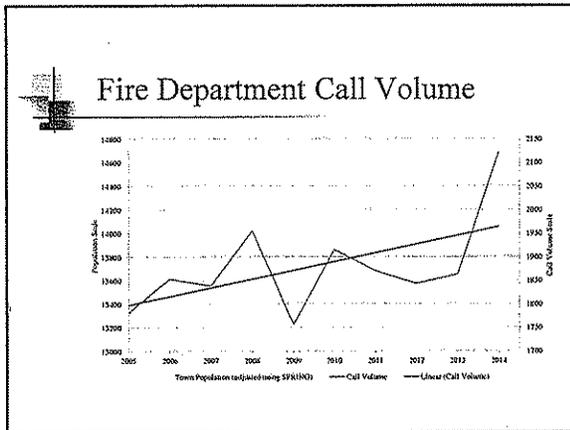


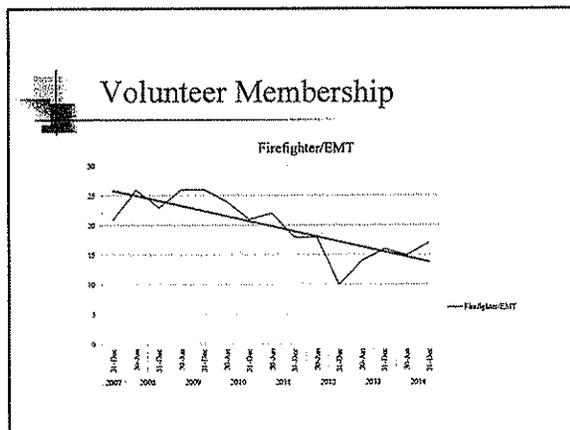
Population
and
Calls for Service

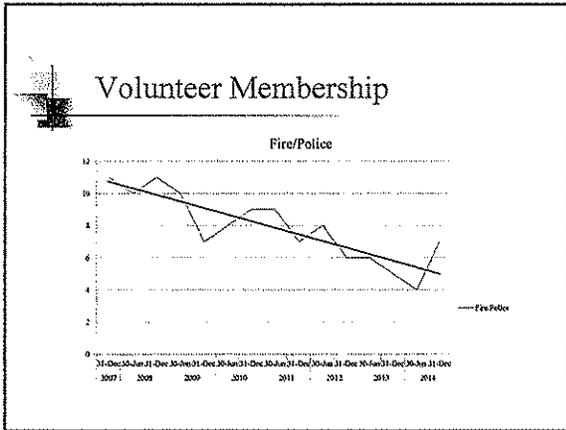
TRENDS

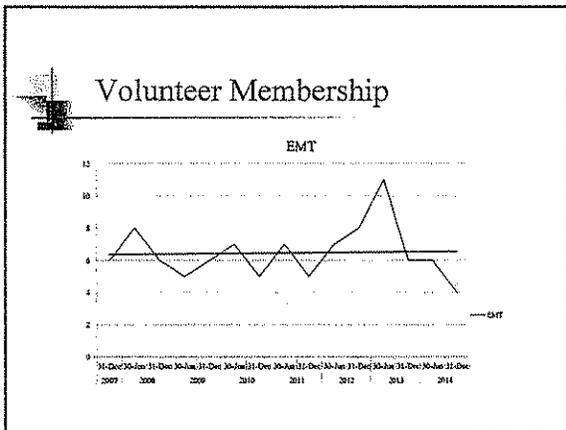


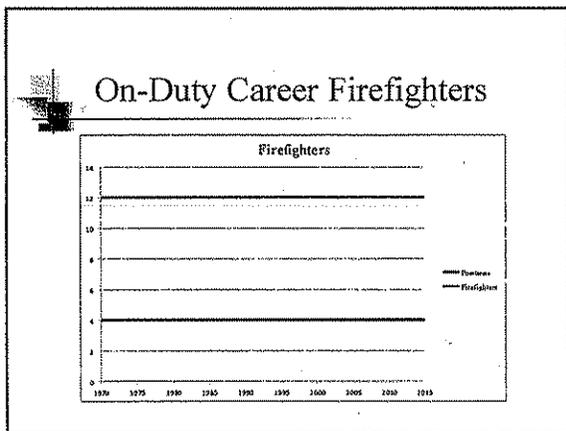














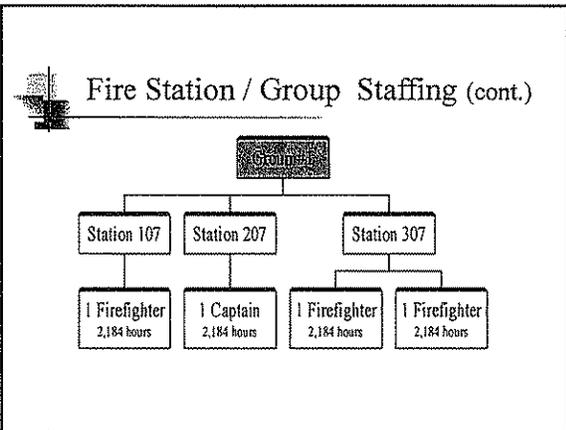
Recommendations



Career Firefighter Staffing

Continue a multi-year program to stabilize career firefighting personnel and fully implement the 5/4 staffing model

- Add one full-time career firefighter each fiscal year until staffing reaches 16 full-time career firefighters
- Stop routine staffing of Full-Time Firefighter positions with Part-Time personnel except for:
 - Peak Call Volume periods
 - Shift Coverage for Leave
 - Special events



Position vs. Personnel (cont.)

Personnel Required to Staff 1 Full-Time Firefighter Position

1 Full-Time Firefighter working 42 hours per week X 52 Weeks = 2,184 hours

4 Full-Time Firefighters (Personnel) X 42 hours per week X 52 Weeks = 8,736 hours
(1 Position)

Staffing Proposal

Fiscal Years 2016 - 18

Staffing Shifts using the 5/4 Model

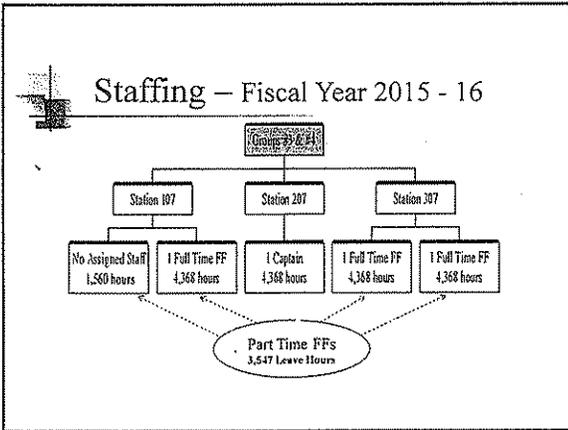
Fiscal Year 2015 - 16 14 Full-Time Firefighting Personnel

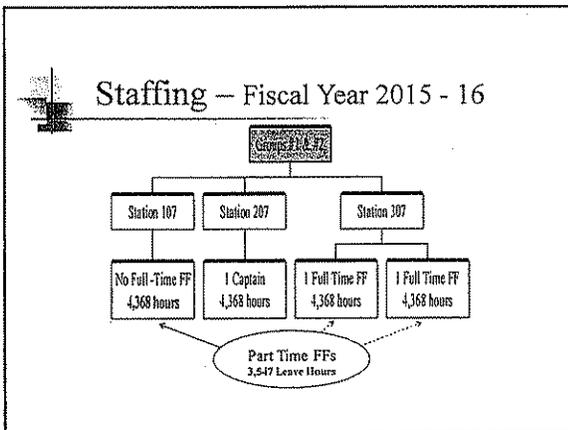
- 5/4 Staffing on Groups #3 & #4
 - Staff with Part-Time Firefighters on Groups #1 - #2
- (assumes full staffing with 14 Full-Time Firefighters and peak period / special event staffing with Part-Time Firefighters)

5th / 4th Position Staffing: 5,928 hours

Shift Coverage for Leave: 7,093 hours

Total: 13,021 hours





Staffing Shifts using the 5/4 Model

Fiscal Year 2016 – 17 15 Full-Time Firefighting Personnel

- 5/4 Staffing on Groups #2, #3 & #4
- Staff with Part-Time Firefighters on Group #1

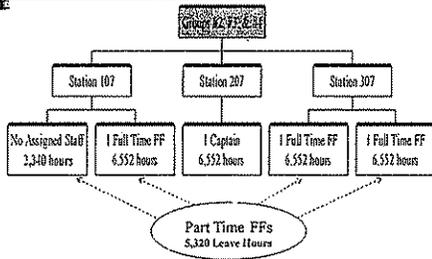
(assumes full staffing with 15 Full-Time Firefighters and peak period / special event staffing with Part-Time Firefighters)

5th / 4th Position Staffing: 4,524 hours

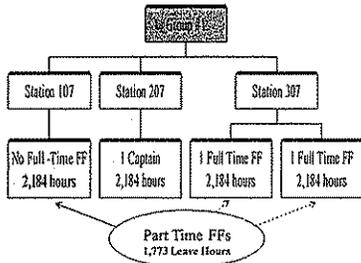
Shift Coverage for Leave: 7,093 hours

Total: 11,617 hours

Staffing – Fiscal Year 2016 - 17



Staffing – Fiscal Year 2016 - 17



Staffing Shifts using the 5/4 Model

Fiscal Year 2017 – 18 16 Full-Time Firefighting Personnel

- 5/4 Staffing on all Groups
- Staff peak periods / Shift Coverage / Special Events with Part-Time Firefighters:

(assumes full staffing with 16 Full-Time Firefighters)

5th Position Staffing: 3,120 hours

Shift Coverage for Leave: 7,093 hours

Total: 10,213 hours



Staffing Shifts Using Overtime



Firefighter Hourly Rates

The hourly range for the **BASE** rate, with the full benefits package applied is as follows:

- Firefighter/EMT: \$40.55 - \$43.47 per hour
- Captain: \$44.94 - \$48.03 per hour

The hourly range for the **BASE** rate, with only payroll taxes and MERS applied is as follows:

- Firefighter/EMT: \$33.26 - \$36.14 per hour
- Captain: \$37.60 - \$40.66 per hour

The hourly range for the **OVERTIME** rate, with only payroll taxes and MERS applied is as follows:

- Firefighter/EMT: \$49.89 - \$54.22 per hour
- Captain: \$56.40 - \$60.99 per hour



Staffing Shifts Using Overtime

Health & Safety

Pension Liabilities



Volunteer Membership

Support Volunteer Recruitment and Retention programs

- Volunteer Benefit Programs
- Length of Service Award Program
- MFFA Annual Awards Dinner



Fire Prevention

Support and enhance Fire and Life Safety Education programs



Questions ?

