

Fire Operational Staffing



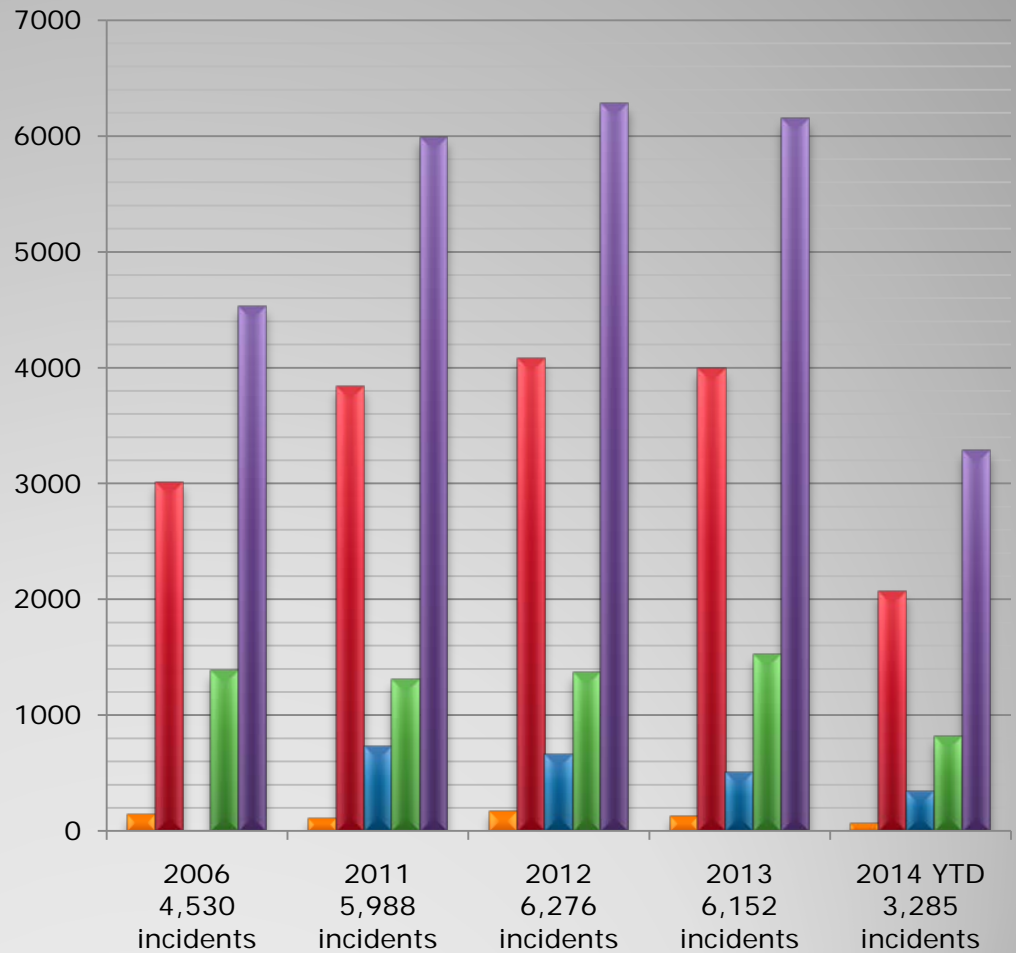
Rochester Hills Fire Department

- History of Rochester Hills Fire
- Review of 2011 Insurance Service Organization Public Protection Class Report.
- Statistical Information from Fire Records Management System (CLEMIS)
 - Response Times
 - Time of Day
 - Day of Week
 - Number of Responders
 - Incident Types
- Review of current NFPA Standard
- Comparison of local departments
- Facts and Statistics
- Options and Benefits
- Review

- In 1975, the Brooklands and Avondale Fire Departments merged to create the Avon Township Fire Department.
- The Meadowbrook Station was built in 1976 and the Stoney Creek Station was built in 1981. The final fire station, Station No. 1 on Horizon Court, was built in the center of our community in 1988.
- The Avon Township Fire Department became the Rochester Hills Fire Department in November 1984 when our community officially changed names and government style from a Township to a City.

History of RHFD

- In 1975, the Avon Township Fire Department responded to a total of 174 incidents of which 14 were medical emergencies
- In 2013, the department responded to 6,152 incidents of which 4,504 were medical emergencies in 2013.



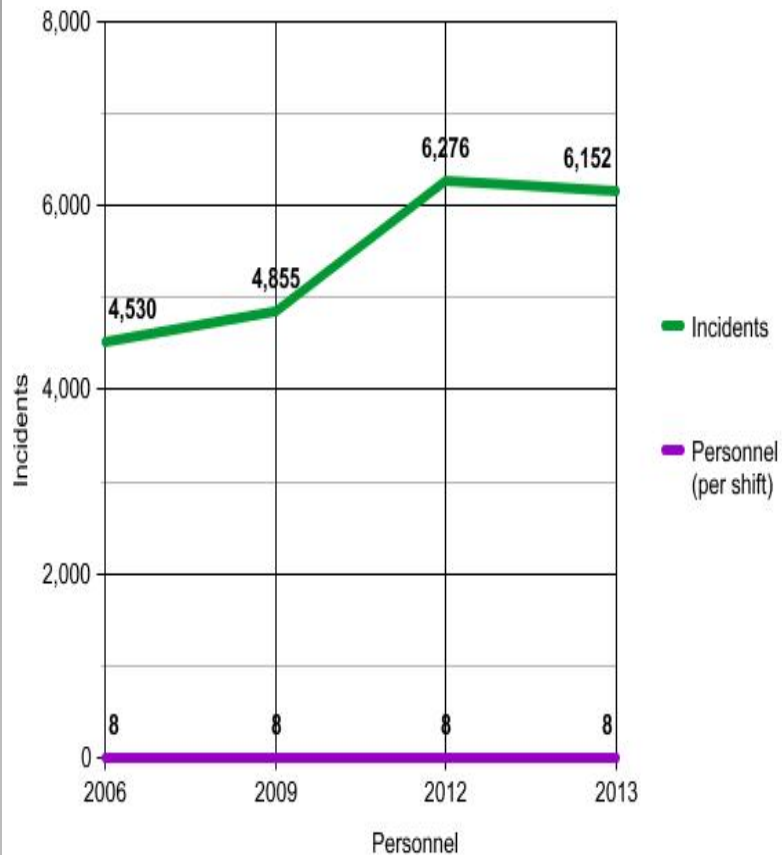
History of RHFD

■ Fire
 ■ EMS
 ■ Transfers
 ■ Other
 ■ Total Calls

- Sept. 1, 2000 - Expanded full-time coverage; from five 10-hour shifts Monday thru Friday (07:00 - 17:00 hours) to seven 12-hour shifts (06:00 - 18:00 hours).
- April 8, 2001 - Full 24-hour shifts begin with a staff of 18 full-time Firefighter/Paramedics, with 6 personnel per shift.
- April 1, 2006 - Hired additional 6 Firefighter/Paramedics Full-time staff of 24 Firefighter/Paramedics, with 8 personnel per shift. ***(Last time additional staffing was added)***

History of RHFD

Full-Time Suppression Personnel Compared to Incident Numbers



- In 2006, RHFD hired six (6) additional Firefighter/Paramedics to allow for eight (8) full-time personnel per shift.
- Since that time the run volume has increased approximately 27% or 1600 additional incidents.

History of RHFD

- June 6, 2007 - Staffed Station No. 4 with 2 Firefighter/Paramedics 12-hour shift. (24-hour shift beginning in 2008).
- June 2, 2010 - Station 2 staffed w/ FT EMT's and Paid On Call members 0500-2300. Station 3 staffed 24/7 with Paid On Call FF/EMT's.
- June 14, 2010 – Personnel moved from Station 2 to Station 5 for staffing medical response 0500 - 2300.

History of RHFD

- April 9, 2012 - Staffed Station No. 2 with 2 Firefighter/Paramedics 24-hour shifts.
- February 3, 2013 - Started midnight Paid On Call shift at Station No. 5, 23:00 - 06:00.
- June 29, 2013 - Stopped midnight Paid On Call shift at Station No. 5 due to low manpower. (Station currently un-staffed from 23:00 to 06:00).

History of RHFD



Process



Department Evaluation

- Who is ISO?
 - ISO collects information on municipal fire-protection efforts in communities throughout the United States.
 - By classifying communities' ability to suppress fires, ISO helps the communities evaluate their public fire-protection services.

Department Evaluation

- How does ISO evaluate the Fire Dept.?
 - ISO analyzes relevant data and assigns a Public Protection Classification.
 - This classification system ranges from 1 to 10. Class 1 represents superior property fire protection, and Class 10 indicates that the area's fire suppression program does not meet minimum criteria.

Department Evaluation

- How often does ISO evaluate the Fire Dept.?
 - ISO usually performs a full evaluation of the fire department every ten years, with follow-up surveys approximately every two years.
 - Rochester Hills was last evaluated in 2011 and received a Public Protection Classification of 4.

Department Evaluation

- Items that were evaluated by ISO included:
 - Our Dispatch Center
 - 911 service
 - Operators (Call takers and Dispatchers)
 - Dispatch Circuits
 - Total possible points- 10.00
 - Rochester Hills- 8.40

Department Evaluation

- Items that were evaluated by ISO included:
 - Our Water Supply
 - Water System
 - Hydrants
 - Inspection and Condition
 - Total possible points- 40.00
 - Rochester Hills- 38.48

Department Evaluation

- Items that were evaluated by ISO included:
 - Our Fire Department
 - Engine Companies (front line and reserve)
 - Ladder Companies (front line and reserve)
 - Pump Capacity
 - Distribution of Apparatus
 - **Staffing (2.92 / 15.00)**
 - **Training (3.66 / 9.00)**
 - Total possible points- 50.00
 - Rochester Hills- 28.63

Department Evaluation

Grading Sheet For: Rochester Hills, Michigan
 Oakland County
 Public Protection Class: 04 Surveyed: May, 2011

<u>Feature</u>	<u>Credit Assigned</u>	<u>Maximum Credit</u>
Receiving and Handling Fire Alarms	8.40%	10.00%
Fire Department	28.63%	50.00%
Water Supply	38.48%	40.00%
*Divergence	-7.79%	
Total Credit	<u>67.72%</u>	<u>100.00%</u>

The Public Protection Class is based on the total percentage credit as follows:

<u>Class</u>	<u>%</u>
1	90.00 or more
2	80.00 to 89.99
3	70.00 to 79.99
4	60.00 to 69.99
5	50.00 to 59.99
6	40.00 to 49.99
7	30.00 to 39.99
8	20.00 to 29.99
9	10.00 to 19.99
10	0 to 9.99

*Divergence is a reduction in credit to reflect a difference in the relative credits for Fire Department and Water Supply.

The above classification has been developed for use in property insurance premium calculations.

• Divergence Factor

- The divergence factor identifies that the fire department and water supply scores are incompatible.
- What does this mean for Rochester Hills?
 - That while Rochester Hills has a great water supply system, the ability of the fire department to deliver it is reduced.



Staffing

- Staffing

- Nine (9) Administrative Staff
- Twenty-four (24) Full-time suppression members. (eight per shift)
- Forty-nine (49) Paid-on-Call members (Assigned to one of five stations)

Department Evaluation



- Station 1
 - Assigned four (4) full-time FF/P
 - Staffed 24-hours a day with a minimum of two (2) full-time FF/P.
 - Eight (8) Paid on Call Members Assigned

Department Evaluation

- Station 2
 - Staffed 24-hours a day with a minimum of two (2) full-time FF/P.
 - Thirteen (13) Paid on Call Members Assigned



Department Evaluation



- Station 3
 - Staffed 24-hours a day with a minimum of two (2) Paid on Call FF/EMT.
 - Eight (8) Paid on Call Members Assigned

Department Evaluation

- Station 4
 - Staffed 24-hours a day with a minimum of two (2) full-time FF/P.
 - Fifteen (15) Paid on Call Members Assigned



Department Evaluation



- Station 5
 - Staffed 16-hours a day with a minimum of two (2) members
 - EMS Only Staff
 - Unstaffed hours
 - Five (5) Paid on Call Members Assigned

Department Evaluation



Response Times

- Response Times

- Information was retrieved through the Oakland County CLEMIS Fire Records and Reporting System for the Rochester Hills Fire Department.
- Measured RHFD against established national response time criteria.

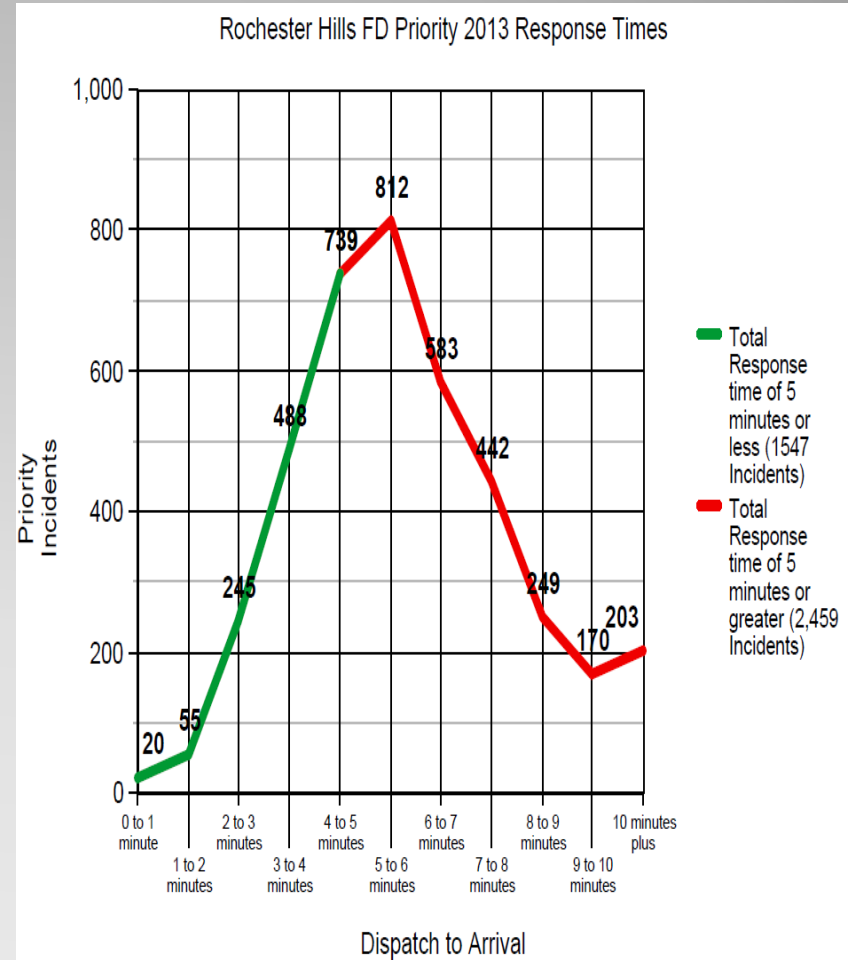
Department Evaluation

- Terms

- Alarm to Dispatch- This is the time it takes for the dispatch center to process the call and dispatch the appropriate resources.
- Dispatch to Enroute- This is the time it takes for units to leave the station once the incident is dispatched.
- Dispatch to Arrival- This is the time it takes for units to leave the station once dispatched and arrive on scene.
- Alarm to Arrival- This is the time it takes from the beginning to the end of the above processes.

Department Evaluation

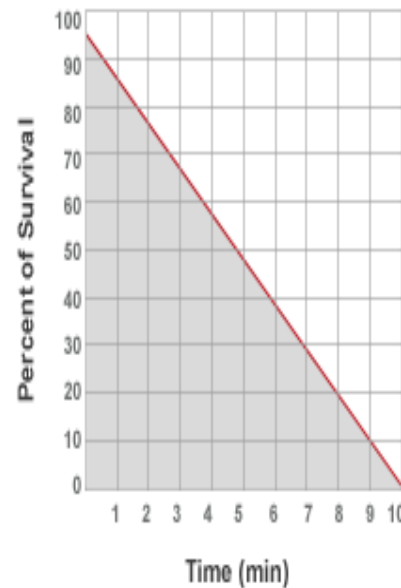
- It was found that out of the 4,006 priority incidents RHFD responded to in 2013, that 61% of the time RHFD total response (dispatch to arrival) time exceeded five (5) minutes



Department Evaluation

- Why are response times so important?
 - Time is of the essence.
 - Statistics show that patients who receive timely defibrillation, ALS care, and immediate transport to a definitive care facility have a more likely chance of a positive outcome.

PERCENT OF SURVIVAL



Survival rates after VF cardiac arrest decrease approximately 7% to 10% with every minute that defibrillation is delayed. p 1-61

Guidelines 2000 for Cardiovascular Resuscitation and Emergency Cardiovascular Care. Circulation; 102 (suppl)8. August 22, 2000.

Department Evaluation

2012 Cardiac Arrest (Time of Day)

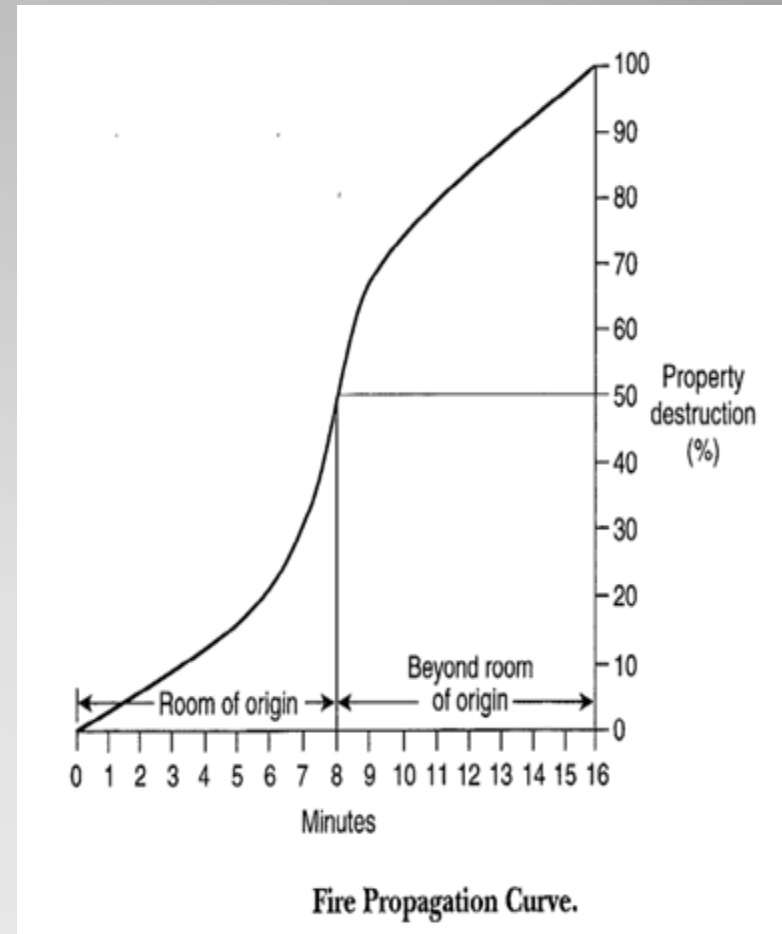
Time Of Day	Number Of Incidents	Pct Of Total
00:00 - 03:59	6	9.68
04:00 - 07:59	6	9.68
08:00 - 12:59	18	29.03
13:00 - 16:59	10	16.13
17:00 - 20:59	16	25.81
21:00 - 23:59	6	9.68

2013 Cardiac Arrest (Time of Day)

Time Of Day	Number Of Incidents	Pct Of Total
00:00 - 03:59	4	5.71
04:00 - 07:59	7	10.00
08:00 - 12:59	21	30.00
13:00 - 16:59	15	21.43
17:00 - 20:59	15	21.43
21:00 - 23:59	8	11.43

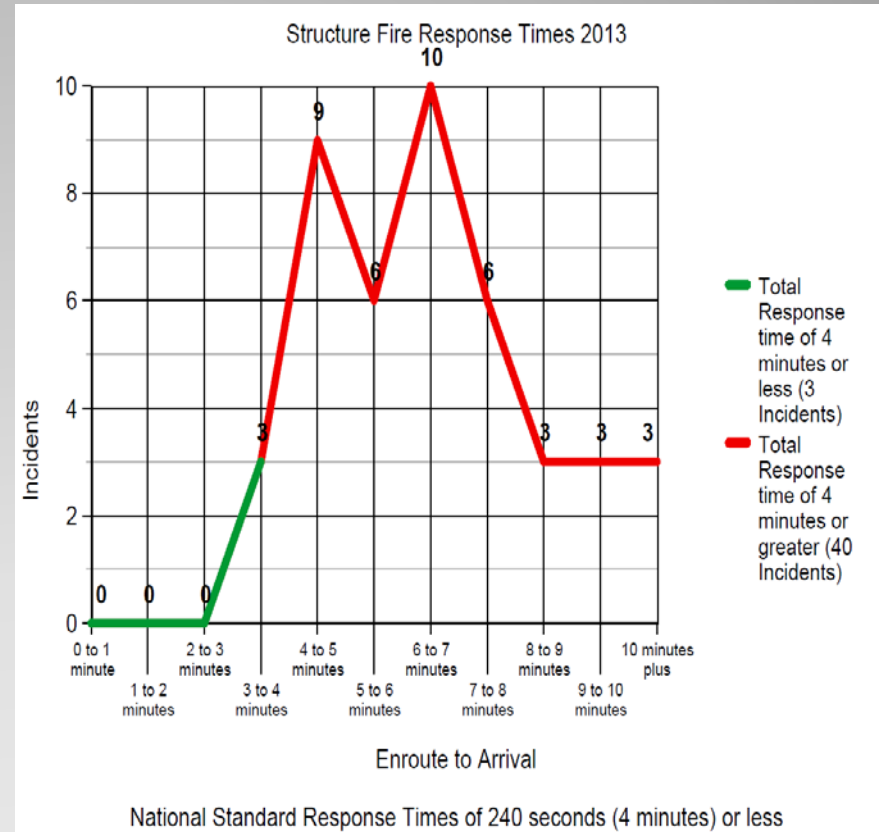
Department Evaluation

- Why are response times so important?
 - Time is of the essence.
 - Two of the most important elements in limiting fire spread are the quick arrival of sufficient number of firefighters and equipment to attack and extinguish the fire as close to the point of origin as possible.



Department Evaluation

- In 2013, the Rochester Hills Fire Department (RHFD) responded to 43 reported structure fires. Out of those 43 incidents, the RHFD arrived at 40 incidents outside of the acceptable response criteria.
- Out of the 40 incidents, nine (9) incidents took eight (8) minutes or longer.



Department Evaluation



Standards

- What is the NFPA?
 - The **National Fire Protection Association** (NFPA) is a trade association that creates and maintains private, copyrighted, standards and codes for usage and adoption by local governments.

Standards

- NFPA 1710

- This standard specifies requirements for effective and efficient organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by career fire departments to protect citizens and the occupational safety and health of fire department employees.

Standards

- NFPA 1710 establishes acceptable response time criteria to include:
 - **240 seconds or less** travel time for the arrival of first arriving engine company at a fire suppression incident and **480 seconds or less** of travel time for the deployment of an initial full alarm assignment at a fire suppression incident.
 - **240 seconds or less** travel time for the arrival of a unit with first responder with an automatic external defibrillator (AED) or higher level capability at an emergency medical incident.
 - **480 seconds or less** travel time for the arrival of an advanced life support (ALS) unit at an emergency medical incident, where this service is provided by the fire department *providing a first responder with an AED or basic life support (BLS) unit arrived in 240 seconds or less travel time.*

Standards



Fireground Operations

- NFPA 1710 establishes acceptable staffing criteria to include:
 - On-duty fire suppression personnel shall be of the numbers necessary for fire-fighting performance relative to the expected fire-fighting conditions.
 - The fire department shall have the capability to deploy an initial full alarm assignment within a ***480 second travel time to 90 percent*** of the incidents.

Standards

- How many Firefighters does it take to extinguish a structure fire?
 - The initial full alarm assignment to a structure fire in a typical 2000 sq. ft, two story single family dwelling without basement and with no exposures shall provide for **fifteen (15) firefighters on scene within eight (8) minutes.**
 - These firefighters perform the following:

Fireground Operations



- Establishment of incident command outside the hazard area for overall coordination and direction of units- one (1) member

Fireground Operations

- Establishment of an effective water flow application from two (2) hand lines flowing a minimum of 100gpm- two (2) members per line for four (4) total personnel.



Fireground Operations



- Provision of one support person to provide hydrant hook-up, assist in laying attack lines, utility control and forcible entry- two (2) members;

Fireground Operations

- Provision of at least one victim search and rescue team- two (2) members;



Fireground Operations



- Provisions of at least one team to raise ground ladders and perform ventilation- two (2) members;

Standards

- If an aerial device is used, one (1) member to function as the aerial operator



Fireground Operations



- Establishment of an Firefighter Rescue Team consisting of a minimum of two (2) properly trained members.

Fireground Operations



Emergency Medical Services

- NFPA 1710 establishes acceptable criteria for Emergency Medical Services to include:
 - On-duty EMS Units shall be staffed with minimum personnel necessary for emergency medical care relative to the level of EMS provided by the fire department.
 - The fire department shall adopt service delivery objectives based on time standards for the deployment of each service component for which it is responsible.

Emergency Medical Services

The Rochester Hills Fire Department provides Advanced Life Support (ALS) and Basic Life Support Care to the citizens of the community.



So what is the
difference?

Emergency Medical Services

EMT- Basic Life Support Initial Training- 194 hours

- Basic airway management
- Basic Patient Assessment (Medical and Trauma)
- Basic Pharmacology
- CPR/AED
- Basic Trauma care
- Basic Medical care
- EMT- Basics have a general understanding of the functions and operations of the body

Paramedic- Advanced Life Support Initial Training- 1249 hours

- Basic, Advanced Airway and Surgical airway
- Patient Assessment (Medical and Trauma)
Basic and Advanced Pharmacology
- Cardiac Monitoring including 12 lead electrocardiograph (EKG) for heart attack identification
- Advanced cardiac rhythm therapies including cardiac pacing and defibrillation
- Trauma Care - including shock care (IV therapy), pharmacological pain management
Medical care - treatment of many medical conditions with expanded knowledge, therapies, and procedures
- Paramedics have a greater understanding of the functions and operations of the body.

Emergency Medical Services

- How many personnel does it take to respond to a medical call?
 - This depends on the severity of the incident. Dispatch categorizes the incident by the information they receive.
 - There are five categories of medical incidents ranging from a cut finger to a cardiac arrest.
 - At a scene of a cardiac arrest Firefighter Paramedics perform the following (as identified by the AHA):

Emergency Medical Services



- Early **cardiopulmonary resuscitation (CPR)** with an emphasis on effective chest compressions

EMS Operations- Cardiac Arrest

- Rapid
defibrillation



EMS Operations- Cardiac Arrest



- Effective **advanced life support**



EMS Operations- Cardiac Arrest

- Rapid Transport and integrated **post-cardiac arrest care**



EMS Operations- Cardiac Arrest



Facts and Statistics

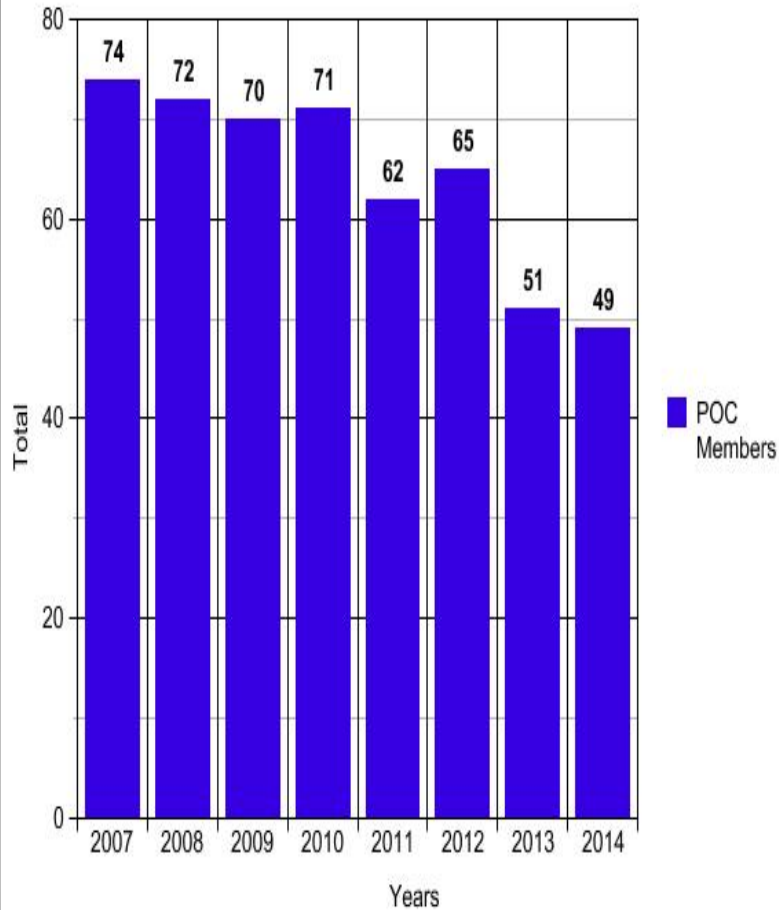
- The incident volume of the Rochester Hills Fire Department continues to grow.
- For example, in 2013 the twelve (12) nursing and assisted living facilities already operational accounted for almost **25%** of the total incidents for the year.
- The department estimated that for each current bed (1456 total) the RHFD responded to 1.025 incidents per bed for a total of 1498 incidents in 2013.

Facts and Statistics

- The department has tracked since 2010 that a new POC member historically stays with the department approximately 14 months.
- The department lost 24 POC members in the year 2013 with 15 excepting a full-time job elsewhere in fire and emergency services delivery.
- There is a continued national trend of declining volunteer and Paid on Call Recruitment and Retention.

Facts and Statistics

Paid on Call Membership



- The number of Paid on Call members within the Rochester Hills Fire Department continues to decline.

Facts and Statistics

- Comparison of neighboring communities that are similar in population, demographic, and department structure to Rochester Hills

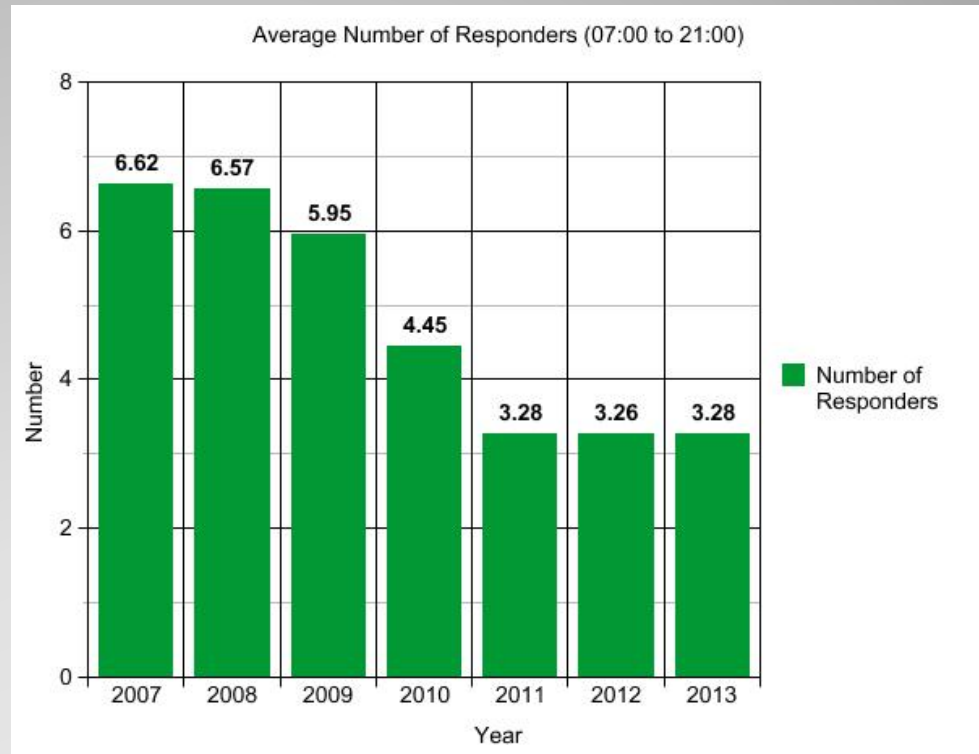
- Farmington Hills
 - 39 Full-Time Suppression
 - 88 Paid-on-Call
 - **Number of Calls 2012-** 8,003
 - **Number of Calls 2013-** 8,539
- Rochester Hills
 - 24 Full-Time Suppression
 - 49 Paid-on-Call
 - **Number of Calls 2012-**6,276
 - **Number of Calls 2013 -**6,152
- Royal Oak
 - 60 Full-Time Suppression
 - **Number of Calls 2012-** 5,665
 - **Number of Calls 2013-** 6,100
- Shelby Twp.
 - 59 Full-Time Suppression
 - **Number of Calls 2012-** 5,650
 - **Number of Calls 2013-** 5,891
- Southfield
 - 96 Full-Time Suppression
 - **Number of Calls 2012-** 12,631
 - **Number of Calls 2013-** 12,926

Comparison

- In 2013, approximately **75%** of the incidents that RHFDD responded to were between the hours of 07:00 and 20:00, while **73%** were during the weekdays (Monday through Friday).
- This is the time when the majority of our Paid on Call members are at their full-time employment.
- Overall member response numbers continue to decline.

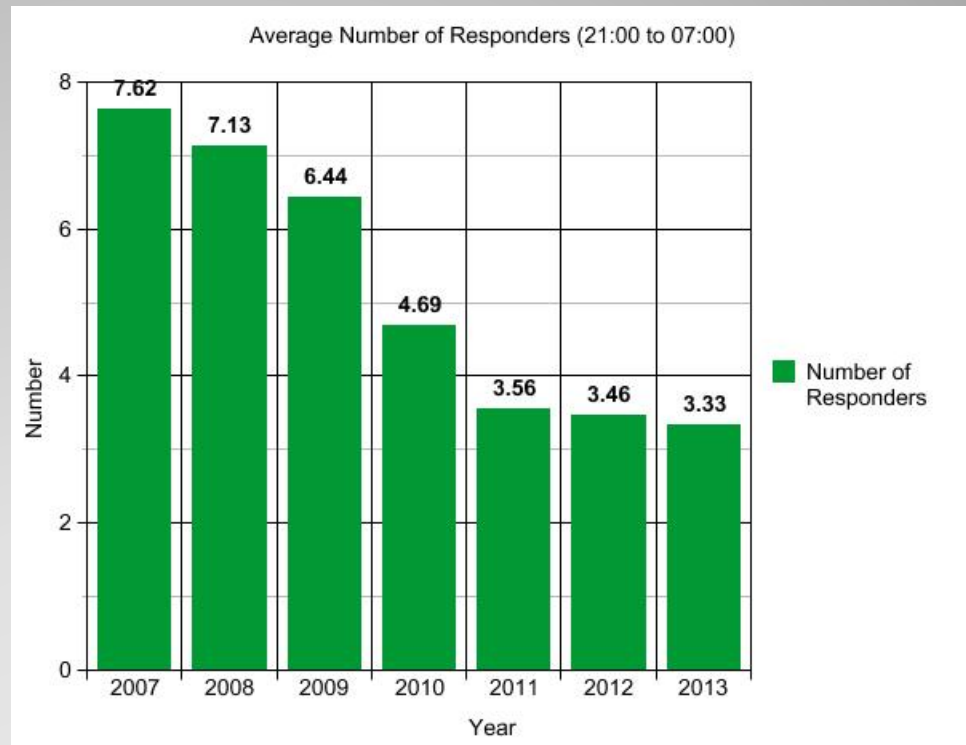
Facts

- Comparison of responders from 07:00 to 21:00



Facts and Statistics

- Comparison of responders from 21:00 to 07:00



Facts and Statistics

- More incidents are being dispatched concurrently.
 - Forces us to rely more frequently on our neighbors.
 - Our lack of staffing creates a ripple effect through other organizations.
 - Results in increased response times to a priority incident.
 - Neighboring resources could already be utilized.
 - Our neighbors are already encountering issues within their own staffing and response.

Facts and Statistics

- Firefighting is a physically demanding task that requires accomplishing specific actions in a demanding, rapidly changing environment.
- Time is of the essence for emergency incidents (fire and EMS), which could be the determining factor for a positive outcome.

Facts and Statistics



Options and Benefits

- The current staffing model of the Rochester Hills Fire Department needs an infusion of additional staffing to address the increasing call volume.
- This can include a mixture of hiring additional full-time Firefighter/Paramedics and utilizing part-time Firefighter/EMTs.

Options

Hire nine (9) additional firefighter/paramedics (Option 1)

- This will allow for an additional cross-staffed Fire Company / ALS unit. (six (6) new positions)
- An additional Firefighter/Paramedic to staff an Engine Company (three (3) new positions)

Hire fifteen (15) additional firefighter/paramedics (Option 2)

- This will allow for two additional cross-staffed Fire Company / ALS unit. (twelve (12) new positions)
- An additional Firefighter/Paramedic to staff an Engine Company (three (3) new positions)

Options

What would this give us ? Option 1

- Total on-duty strength of sixteen (16) cross trained Firefighter/EMS personnel to include:
 - 11 Full-Time Firefighter/Paramedics
 - 5 Part-Time Firefighter/EMTs

What would this give us? Option 2

- Total on-duty strength of nineteen (19) cross trained Firefighter/EMS personnel to include:
 - 13 Full-Time Firefighter/Paramedics
 - 6 Part-Time Firefighter/EMTs

Options

- Convert Paid-on-Call Firefighters to true “Part-Time” employees with set hours and shifts.
- Benefits include:
 - Consistent Reliable Staffing
 - Ease of Affordable Care Act compliance
 - Easier to manage
 - Allows for outside of city applicants
 - Except only trained FF/EMT (no initial training cost)

Additional Changes



Benefits

- ***Consistent, Reliable level of service***
 - Recent studies by the National Institute for Standards and Technology have shown that firefighter staffing directly affects how quickly and effectively a fire department can perform the critical fireground functions
- ***Potential quicker response times which result in:***
 - Incident being stabilized quicker resulting in less property damage.
 - More positive outcome for citizens and patients.
 - Enhanced life safety
- ***Possibility of lower insurance premiums.***

Benefits to Community

- ***Having the needed resources for an ever growing diverse department which provides all-hazards emergency response.***
- ***Firefighter Safety***
 - The quicker the needed amount of firefighters arrive, the quicker the fire can be contained limiting the dangers that firefighters are exposed too.
 - Maintain safe working conditions for our firefighters, who deserve nothing less than our best efforts to ensure they can perform their duties as safely and effectively as possible.

Benefits for Department



Review



Rochester Hills
Innovative by Nature

Questions