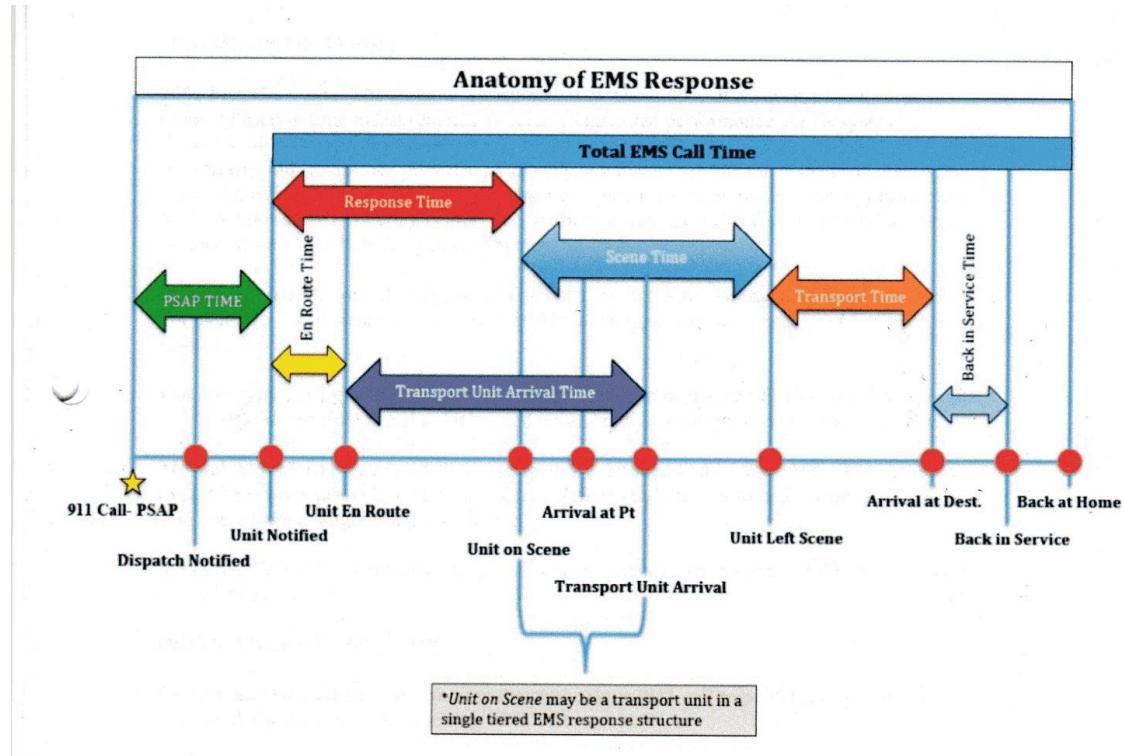


EMS Response Fact Sheet - Oakland Township

The purpose of this letter is to summarize what I think are many essential facts about the current state of EMS Responses, both time and quality. The importance of this is that improvement requires OTFD and BOT to agree on the basic facts of where we are now. If you find any of these facts to be in error, please let me know and I will correct this report and re-send it.

#1 - The response standard for time and required equipment and personnel is set by OCMCA in Protocols 6-1 and 6-18. The key chart is here:



#2 - Dave Piche implies, but does not explicitly state (page 8) that our standard is 6 minutes (suburban/urban, >500 population per square mile)

#3 - Some BOT members feel 8 minutes is the standard (rural, <500 population per square mile)

#4 – I do not know, nor do I know anyone who knows what should trigger our re-classification from rural to suburban/urban. Is it the Federal census; SEMCOG estimates; our own estimate?

#5 – Oakland Township area is 36.8 square miles; not 36.

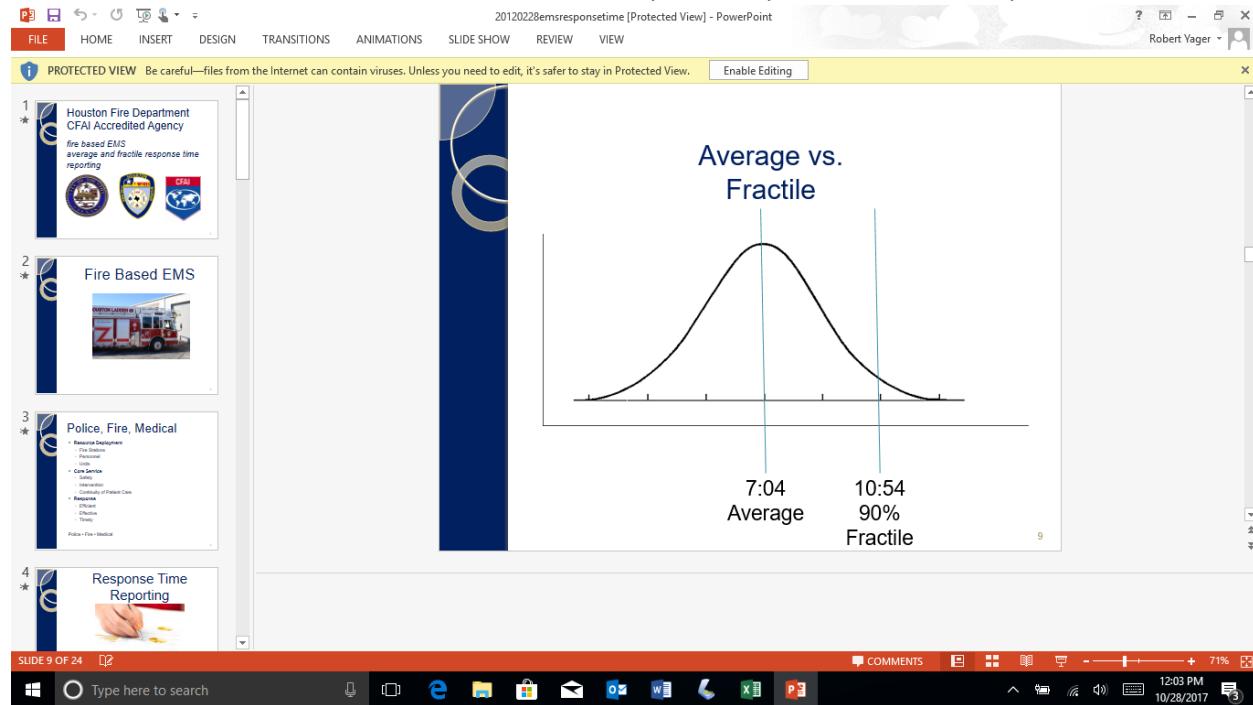
#6 – OCMCA Protocol 6-18 requires measuring the time from “Unit Notified” until “Unit Arrives on Scene”

#7 – A unit means a Licensed ALS Unit in our case which is one properly equipped ambulance and two paramedics

#8 – We have been and still are incorrectly measuring the shorter time when the “first person with a radio arrives on scene”.

#9 – The time we now measure is about 2-3 minutes shorter than the true response time. So we mislead ourselves and OCMCA by that increment of time.

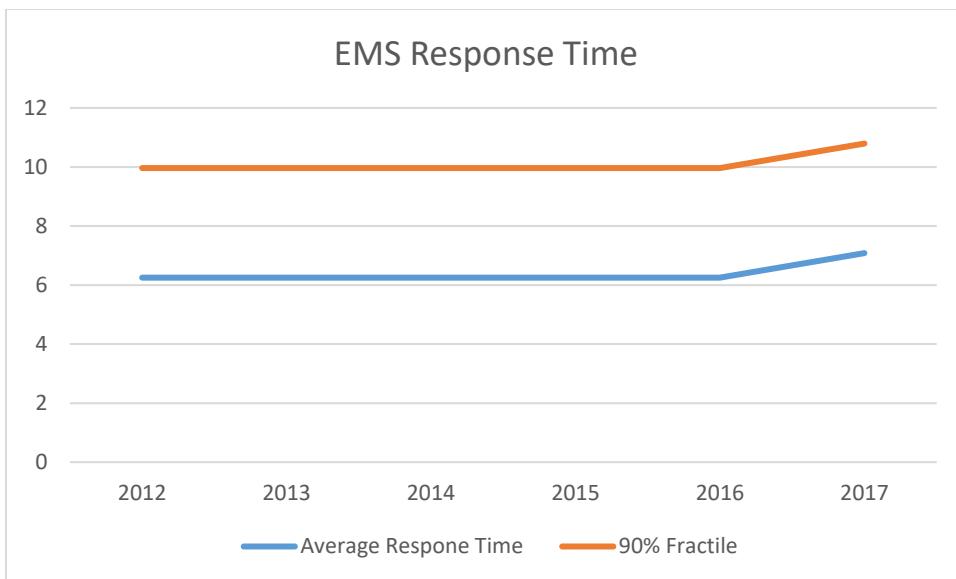
#10 – The 90% fractile response time is determined by determining the average and standard deviation of a set of data and then using this formula: 90% response time = average response time + 1.29 x standard deviation. This chart from a Houston Fire Dept. Powerpoint illustrates this point:



(A count method is sometimes used to arrange the data from fastest to slowest and count down to the response at 90%. The count method yields longer times and is not recommended.)

#11 – EMS response time calculation methods vary from place to place; so comparisons require knowing details. In Houston they start measuring the time from the initial 911 call. This adds about 2 minutes to their time vs the Oakland County method.

#12 Dave Piche's conclusion that *"EMS response over the last five and half years for the most part has been in compliance with the OCMCA standards"* is incorrect. (page 9 of report). Using the average data he provides for response time (pages 8 and 9) and assuming a standard deviation of 2.9 minutes, the response times are actually ten minutes and above during that period.



#13 – I have done detailed analysis for two periods

Period	Average (minutes)	Standard Deviation (minutes)	90% Fractile (minutes)	Data Collection Method
Calendar Year 2013	6.13	2.29	9.08	Incorrect (first radio on scene)
10/1/15-5/31/17	7.69	2.93	11.5	Correct (first unit on scene)
10/1/15-5/31/17	6.18	2.29	9.13	Incorrect (first radio on scene)

I would be happy to do a detailed analysis of any year if provided the data.

#14 – On our Performance Dashboard we do not track EMS 90% fractile response time. We track average fire and EMS combined. The latest number reported is 6.52 minutes

#15 – When we are notified of a medical emergency, ambulances from both Station #1 and Station #2 respond with one paramedic in each ambulance most of the time, except Station #2 may have two paramedics if available.

#16 – Annually we certify our compliance. I have our 2017 letter.

Additional detail is available on my website here:

<https://oaklandtownshipsentinel.com/fire-department-reports/ems-response-time-improvement-project/>

Bob Yager

11/25/2017

Oakland County Medical Control Authority
System Protocols
AGENCY AND EMS PERSONNEL CRITERIA FOR PARTICIPATION

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Agency and EMS Personnel Criteria for Participation

The Oakland County Medical Control Authority serves as the designee of the Michigan Department of Health and Human Services (MDHHS) pursuant to Act 368 of 1978, as amended in 2000, to serve as medical control authority for the Oakland County emergency medical services system. Pursuant to Sec. 20919(a) the medical control authority shall develop protocols and policies for the acts, tasks, and function that may be performed by EMS personnel and life support agencies.

NEW AND UPGRADING AGENCIES

(see New or Upgrading EMS Agency Policy)

RENEWING AGENCIES (ANNUALLY)

Renewing EMS Agencies will be eligible to be designated as a life support agency in Oakland County and receive Medical Control upon annual submission to the Professional Standards Review Organization (PSRO) of:

1. Evidence of licensure with the State EMS Division;
2. Evidence of compliance with OCMCA criteria for practice by completion of the Letter of Compliance;
3. List of current personnel including level of licensure, expiration dates, and current ACLS certification; and
4. Approval of the PSRO, MCC and Board of Directors.

AGENCY CRITERIA TO PARTICIPATE IN THE OCMCA

The Oakland County Medical Control Authority has an approval process in place to designate a life support agency in Oakland County to be eligible for Medical Control. This approval will be based on the PSRO review and approval; and MCC and Board of Directors approval. The criteria to operate as an OCMCA agency includes:

1. Licensed by the Michigan Department of Health and Human Services (MDHHS), or license pending.
2. The ability to comply with the Oakland County EMS Response Time Standards (6-18).
3. Medical supplies, communications, equipment, procedures and protocols utilized meet criteria as established by MDHHS and Oakland County Medical Control Authority.
4. Agency/Personnel will follow the OCMCA Medical Control Hospital Policy.
5. The agency designates the OCMCA (including its PSRO) to perform professional practice review functions on behalf of the agency, including review of pre-hospital care provided in Oakland County and recommendations for improvement of such care.
6. The agency agrees to participate in PSRO studies, and abide by the PSRO Incident Investigation Procedure.

MCA Oakland County
MCA Board Approval Date: December 2, 2016
MDHHS Approval Date: January 27, 2017
MCA Implementation Date: February 1, 2017

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7. Agency has designated a medical control hospital and medical control hospital physician.
8. Units are identified through standard terminology and uniform numbering system, administered by the Oakland County Medical Control Authority. The OCMCA unit number will be documented on each run form and/or e-PCR and used in all radio communications.
9. The agency has designated an EMS Coordinator and a State Licensed Instructor Coordinator.
10. The agency has Emergency Medical Dispatch (EMD) protocols to ensure the appropriate dispatching of a life support agency based upon medical need and capability of the emergency medical services system. All calls have access to pre-arrival instructions through an approved MCA EMD program that meets the standards of the American Society for Testing and Measurement (ASTM).
11. The agency has a policy to ensure that use of lights and sirens is based on EMD protocols and patient condition. The agency is responsible for completing and forwarding the necessary quality improvement data, approved by the OCMCA Board of Directors, to the OCMCA office on a monthly basis.

ALS Agencies Only

1. Provide a minimum of one paramedic and one EMT staffing an ALS unit at all times.
2. Personnel shall be trained and licensed in accordance with appropriate statutes, rules, and criteria and maintain current ACLS, with recommendations to include a nationally recognized pediatric program.
3. Contract for staffing services shall only be rendered with OCMCA approved Life Support Agencies.

BLS Agencies Only

LICENSED NON-TRANSPORTING BLS AGENCY

Must provide a minimum of one (1) EMT to staff BLS unit at all times. Assigned personnel shall maintain current BCLS with training and license in accordance with the appropriate statutes and criteria.

OR

LICENSED TRANSPORTING BLS AGENCY

A transporting BLS agency must provide a minimum of one EMT and one MFR to staff a BLS unit for transport. Assigned personnel shall maintain current BCLS with training and licensed in accordance with the appropriate statutes, rules and criteria.

MFR Agencies Only

Personnel be trained and licensed in accordance with appropriate statutes, rules criteria and maintain current BCLS.

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EMS Response Time Standards

Purpose

Quality pre-hospital emergency care is directly related to high performance life support agencies with unified EMS response standards. The purpose of this protocol is to establish unified and consistent EMS response expectations for the Oakland County Life Support Agencies.

GLOSSARY OF TERMS

90% Fractile Value: The value or measurement at which 90% of all events occur. This is typically used in time measurements to better standardize performance across systems.

Automatic Aid: assistance provided by one agency to another that the dispatch center, without a command officer's input, can send or request equipment based on the information from the call to the public safety answering center. The intent of automatic aid is for day-to-day, pre-arranged, protocol driven, pre-hospital care deployment.

Cold Response: A normal traffic speed response (no lights and sirens) to or from an EMS event. For example, "cold" response may include Alpha, Omega, and occasionally a Charlie or Bravo response level.

Hot Response: A lights and sirens, emergent response to or from an EMS event. For example, "hot" response may be an Echo, Delta, and occasionally a Charlie or Bravo response level.

Mutual Aid: assistance provided by one agency to another and in return the other agency can expect help when needed; requires an agency's command officers to make a specific request for assistance from a neighboring jurisdiction.

Response Time Measurement: Response time is measured from Unit Notified by Dispatch to Unit Arrived on Scene.

DEFINITION OF EMS TIMES

PSAP Call Date/Time: The date/time the phone rings (911 call to public safety answering point or other designated entity) requesting EMS services.

Dispatch Notified Date/Time: The date/time dispatch was notified by the 911 call taker (if a separate entity).

Unit Notified By Dispatch Date/Time: The date/time the responding unit was notified by dispatch.

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Unit En Route Date/Time: The date/time the unit responded; that is, the time the vehicle started moving.

Unit Arrived on Scene Date/Time: The date/time the responding unit arrived on the scene; that is, the time the vehicle stopped moving.

Arrival at Patient Date/Time: The date/time the responding unit arrived at the patient's side.

Transfer of Patient Care Date/Time: This is the time the patient was transferred from one EMS agency to another EMS agency for care.

Unit Left Scene Date/Time: This is the time the responding unit left the scene (started moving).

Patient Arrived at Destination Date/Time: This is the date/time the responding unit arrived with the patient at the destination or transfer point.

Arrival Time of Transport Unit: The time that the transporting unit has arrived on scene; that is, the time the vehicle stopped moving.

Unit Back in Service Date/Time: This is the date/time the unit is back in service and available for response (finished with the call, but not necessarily back in the home location).

Unit Back at Home Date/Time: The date/time the responding unit was back in their service area. In agencies that utilized Agency Status Management, home location means the service area as assigned through their agency status management protocol.

EMS RESPONSE OPERATIONS

Tiered Response Configurations

The Oakland County EMS System has two types of response structures.

Single tier - one agency provides response and transport at one level of care. It is expected that a single tier system meet the Primary Unit Response Time Requirement.

Primary Response Unit: a MDCH licensed vehicle that is dispatched as part of an initial EMS response in a single tier deployment.

Multi-tier - EMS systems with **multiple** organizations providing varying levels of response or care. It is expected that life support agencies with multi-tiered response configurations meet the Primary Unit and Transport Unit Response Time Requirements

First Response Unit: a MDCH licensed vehicle that is dispatched in a multi tiered response to provide initial patient care.

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Transport Unit: a BLS or ALS MDCH licensed vehicle that is dispatched in a multi tiered response to provide transportation to the hospital.

Examples of **Multi-tiered** response configurations include:

Primary First Response Unit	Transport Response Unit
*Primary Unit Response Time Requirement	*Transport Unit Response Time Requirement
MFR	ALS/BLS transport
BLS	ALS/BLS transport
ALS	ALS/BLS transport

Scene Arrival

The time of arrival on scene for "hot" responses for both single and multi-tier systems is considered the arrival of a licensed EMS Unit.

Individual licensed EMS responders responding with an unlicensed vehicle or personal operating vehicles (POV) should report their on-scene time to dispatch. However, the MCA is only collecting the response time of licensed EMS units.

GEOGRAPHIC SERVICE AREA DESIGNATION CRITERIA

GSA Designation	Demographics	Primary Unit Emergency Response Time Requirement*	Transport Unit Emergency Response Time Requirement*
Urban area	>1000 people/sq mi	6 mins 0 secs	10 mins 0 secs
Suburban area	500–1000 people/sq mi	6 mins 0 secs	10 mins 0 secs
Rural area	<500 people/sq mi	8 mins 0 secs	14 mins 0 secs

* 90% of the time, fractile.

GEOGRAPHIC SERVICE AREA

1. LSAs authorized to operate within the OCMCA will have a defined geographic service area (GSA) within the OCMCA.
2. The minimum service area defined for any Advanced Life Support (ALS), Basic Life Support (BLS), or Medical First Response (MFR) agency will be a municipality jurisdiction. Municipality jurisdictions will be designated by the township, village, city, or county governmental body authorized to designate public safety contracts whether subsidized or unsubsidized.
3. LSAs shall provide the OCMCA with written verification of all geographic service area agreements.

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4. The geographic response area shall be explicitly declared on the Michigan Department of Community Health (MDCH) Life Support Agency License application (form BHS/EMS - 180).
5. The LSA will maintain 24 hour, 7 day per week availability and respond or assure a response to all requests for emergency assistance occurring in their designated geographic service area.
6. LSAs providing ancillary non-emergent and/or inter-facility transport services shall provide sufficient coverage through extra staffing and vehicles to maintain emergency availability.
7. When a LSA is responding outside of its designated GSA to a non-emergency run (e.g. nursing home, urgent care, physicians office, private residence, etc.) for a patient with a potentially life threatening condition, EMS personnel, the LSA or the LSA dispatcher must activate the LSA responsible for that geographic service area.

EMS EMERGENCY "HOT" RESPONSE TIME REQUIREMENTS

Urban And Suburban Geographic Service Areas

When providing Single Tiered emergency response for an urban and suburban geographic service area, assure a response time not to exceed six (6) minutes, 90% of the time, from receipt of call (unit notified time) to time of arrival on scene for the Life Support Agency's Primary Response Unit, when responding to emergency ("hot") calls.

When providing Multi Tiered emergency response for an urban and suburban geographic service area, assure a response time not to exceed six (6) minutes, 90% of the time, from receipt of call (unit notified time) to time of arrival on scene for the Life Support Agency's First Response Unit, when responding to emergency ("hot") calls. Additionally, assure a response time not to exceed eight (10) minutes, 90% of the time, from receipt of call (unit notified time), to time of arrival on scene for the Life Support Agency's Transport Response Unit, when responding to emergency ("hot") calls

Rural Geographic Service Areas

When providing Single Tiered emergency response for an urban and suburban geographic service area, assure a response time not to exceed eight (8) minutes, 90% of the time, from receipt of call (unit notified time) to time of arrival on scene for the Life Support Agency's Primary Response Unit, when responding to emergency ("hot") calls.

When providing Multi Tiered emergency response for an urban and suburban geographic service area, assure a response time not to exceed eight (8) minutes, 90% of the time, from receipt of call (unit notified time) to time of arrival on scene for the Life Support Agency's First Response Unit, when responding to emergency ("hot") calls. Additionally, assure a response time not to exceed fourteen (14) minutes, 90% of the time, from receipt of call (unit notified time), to time

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of arrival on scene for the Life Support Agency's Transport Response Unit, when responding to emergency ("hot") calls.

Response Time Exceptions

1. Severe weather conditions that would provide reason to believe that attempting to comply with the response time performance would be hazardous to the responders or others, or where the road or other weather conditions would not allow safe driving.
2. During disaster situations within the primary service area or neighboring communities.
3. Response time compliance should not include Automatic or Mutual Aid Responses.

Compliance

The OCMCA will address individual compliance issues in accordance with the PSRO Due Process and Disciplinary Procedures Protocol (6-22.3).

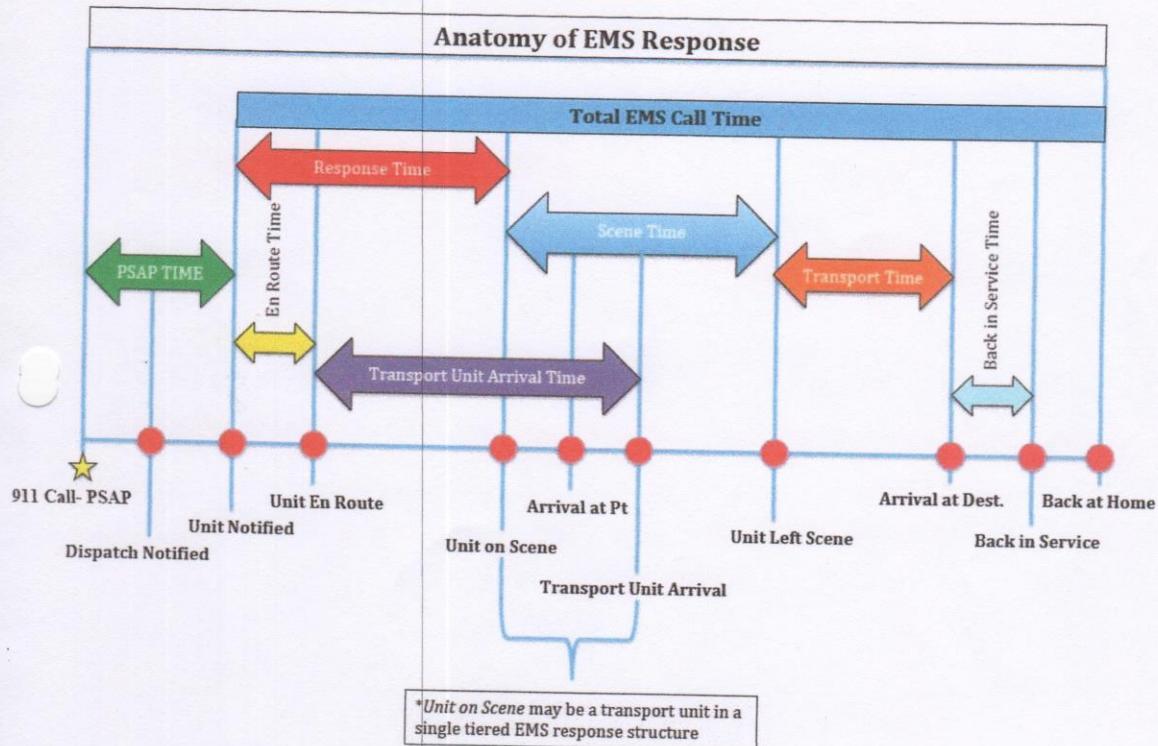
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Section 6-18

This initial review of the Oakland Township Fire Department relative to its overall operational platform, the current Collective Bargaining Agreement, mileage rate and future options the community may want to consider was authorized by the Oakland Township Elected Officials. The following review focused on some current issues and concerns the Elected Officials are faced with and are defined by the following 11 questions provided by them:

1. Review the Master Plan and projected population/development increases to determine the future fire department needs (personnel, buildings and equipment).
2. Provide an analysis on how to avoid increasing full time staffing and, if staffing increases are necessary, how to do so one at a time (on an as need basis), as opposed to increasing by groups or multiple employees.
3. Review shift data and patterns to offer advice and options on reducing and/or eliminating overtime.
4. An overall analysis of reducing Fire Department Costs in light of our current and future projected number of calls.
5. An analysis of the Fire Department's response time as compared to generally accepted standards.
6. The Fire Department's reliance on part-time and/or paid on call and the reliability of doing so into the future.
7. A review of the Township's current fire mileage level and a review of the Fire Department's budget to determine whether the revenue is sufficient.
8. A review and comment on the past five years of Department expense reports, payroll reports, and annual reports.
9. An analysis of how to reduce response time without increasing staff and particularly fulltime staff.
10. A review of the Collective Bargaining Agreement terms and provide an analysis and recommendation of management improvements; such as, appropriateness of applying sickness and vacation hours for purposes of calculating overtime, the advantages of a swing shift, savings from limits on HAS accounts, language to increase shift flexibility (i.e. 24 on/24 off vs. 48 on/48 off) and comment on the pros and cons of a wage increase tied to nonunion staff and the length of the Agreement (2,3, or 4 years).
11. Comment and provide an open analysis of the appropriateness of the current level of services and number of personnel given the Township's size, population, and financial commitment.

1. Review the Master Plan and projected population/development increases to determine the future Fire Department needs (personnel, buildings and equipment).

The population of the Township will continue to grow at a moderate pace throughout the next ten years. Based on the residential building permits being acquired over the past five years, the Township is adding approximately 100 new homes each year and about 200-250 new residents. If this trend

continues, the Township will see their population levels reaching the 20,000 mark during the next five years.

Effects of the increase in population on emergency services:

1. Demand for fire and EMS services will naturally increase.
2. The increase in calls for service will create a need for additional supplies and equipment, as well as replacement of current equipment sooner.
3. With the increase in calls for service, the Fire Department will experience more concurrent incidents, causing a strain to the current staffing model.
4. Road traffic will continue to increase, providing more opportunity for vehicle accidents. The increased traffic load will also have an effect on emergency response times.
5. The increase in calls for service will also cause changes to the daily business operations of the Fire Department.

Future fire equipment:

1. As a best practice to follow, the Fire Department should avoid purchasing multiple large vehicles of the same type, brand, style and year. The reason for this being that the new vehicles may not serve the Fire Department as well as projected, or the vehicles may have inherent mechanical or technical issues that will plague the Fire Department for years to come. It is a large financial burden to purchase emergency vehicles, and the Township should be cautious to not get caught in a difficult position with unsatisfactory equipment.
2. The purchase of a ladder truck in place of another new pumper should be a priority in the future for the Fire Department and Township. The Fire Department needs to have the capabilities that a ladder truck can provide but a fire engine cannot, on all of their fire scenes. The ladder and master stream capabilities are paramount to making difficult rescues and efficient fire extinguishment. Today's ladder trucks are extremely efficient, needing minimal staff to make significant impact on fire attack and will provide the firefighters the best opportunity at saving lives and property.
3. All future fire pumpers or ladders should be equipped with a CAFS/Foam Extinguishment System. These foam delivering systems will greatly aid in the quick extinguishment of fires. It can also help alleviate the amount of fire personnel and water needed to fully extinguish a fire.
4. All front-line fire pumpers and ladder trucks should be equipped to have a fixed mounted master stream and portable master stream devices (Blitz Fire Type) on each of the vehicles. This will aid in providing a large volume of water with the least amount of fire personnel to extinguish large fires.
5. All front-line vehicles should be equipped with at least one "Thermal Imager Camera" for fire personnel to use. The thermal imager camera provides firefighters the ability to see heat projection in smoke filled environments. This technology allows firefighters to quickly locate the seat of the fire for quicker extinguishment, and aids in the location of potential victims within a smoked-filled structure as well.

Establish the priority, culture and policy of preventing fires and injuries in Oakland Township

The Township should endear the concept of preventing fires and emergencies from occurring community wide. A proactive approach to the prevention of fires and injuries will help reduce the frequency and severity of emergency calls and keep the community safer overall.

Some ideas to consider to help achieve this:

1. Consider establishing and assigning the Assistant Chief, and or, the EMS Coordinator the additional title and functions of Fire Marshal for the community.
2. Require all new commercial buildings to install fire/smoke alarms and fire sprinklers. The success of the Fire Department's ability to preserve and protect property is directly proportional to its quick arrival on scene during the incipient phase of a fire. Fire/smoke alarms allow this advantage. Buildings with working sprinkler systems are able to hold fires in check, not allowing them to grow out of control and engulf the structure. This allows first arriving firefighters better opportunity to quickly enter the structure and extinguish the fire and preserve property. Furthermore, buildings that are protected with working sprinkler systems can reduce the amount of fire personnel and equipment needed to extinguish a fully engulfed commercial structure. The potential saving of lives, property, and providing additional safety to the firefighters and civilians cannot be overstated.
3. Begin a program of conducting Annual Fire Inspections of all commercial occupancies in the Township to ensure fire/injury safety and fire code compliance. Conduct thorough Plan Reviews (Fire Marshal or private contractor) with follow-through fire inspections of all new and remodeled construction to ensure fire and life safety compliance from the beginning to the end of these projects.
4. Consider the use of on-duty personnel to help conduct the Annual Fire Inspections. You might also consider using part-time help to complete these inspections.
5. Consider establishing a cost recovery fee program for all service related Plan Reviews, Inspections and Code compliance.
6. Educate the public on when to call and not to call for EMS services. The EMS system is the most abused of the services due to lack of proper education to the public.
7. Put into place an aggressive AED/CPR/First Aid Programs for the public and all Township employees.

Future fire stations and placement:

The Township will continue to grow and expand over the next ten years, as stated earlier. With that, the need for an additional fire station or stations may become necessary. The Township should never feel that it is absolutely necessary to build additional fire stations as areas further develop in the community. Rather, the approach should always be to monitor community growth, gather accurate data, and continue to analyze whether the addition of a fire station is actually warranted.

However, before a decision is actually made to build a fire station, the Township may consider an alternative to building a fire station with the use of a "Duty Crew" first. A Duty Crew is comprised of two firefighters staffing an emergency vehicle that can provide the township an alternative to deploying fire resources without committing to the expense of building a fire station. The Duty Crew is a mobile deployment model instead of a fixed model platform. It allows the Fire Department the flexibility to strategically place the crew in the appropriate areas of the community where calls for service are increasing or can be predicted based on trends and data. Private ambulance companies have used this operational platform for many years with success. Many Fire Departments have also begun to use this concept as a way to handle increased call volumes without having to add additional fire stations.

2. Provide an analysis on how to avoid increasing full-time staffing and, if staffing increases are necessary, how to do so one at a time (on an as needed basis), as opposed to increasing by groups or multiple employees.

The Township should consider increasing the staffing of the Fire Department to meet the current demands and growth of the community. As it stands right now, the staffing and deployment model create a situation where the Fire Department finds itself in an overtime situation when one employee takes Leave Time. There are no extra employees on duty to absorb a vacancy caused by the use of Leave Time. Additionally, the staffing model is challenged when one emergency call occurs as both on-duty firefighters respond from their respective fire stations to mitigate the one call, thus leaving the Township without coverage until Paid on Call firefighters arrive at the station.

An option to improve the current staffing situation is to maintain three (3) firefighters on-duty everyday as a maximum, and two (2) firefighters on-duty everyday as a minimum. The third firefighter creates the buffer needed to replace a firefighter using Leave Time, thus eliminating the need to call back for overtime. On days when no firefighters are using Leave Time, the Fire Department will be better served having one station staffed with two (2) firefighters and the other with one (1) firefighter. For instance, when a run (EMS or low priority) occurs in the district where two (2) firefighters are staffed, they will respond by themselves, while the other station staffed with one (1) firefighter is ready for the next possible run. The station that is staffed with one (1) firefighter should be augmented during the daytime (when run volume is at its peak) by having the EMS Coordinator/Assistant Chief respond with the one (1) firefighter whenever possible, creating a two-person crew.

Advantages gained by changing to this staffing model:

- Increased safety to the fire personnel while responding and working on scene.
- Ability to meet the 2in/2out Federal Law during the daytime hours.
- More effective deployment of services and increase opportunities for positive outcomes.
- Reduced overtime costs.
- Reduced cost of paying Paid on Call firefighters-less need and reliance on them.
- Flexibility of day-to-day operations, greater productivity, and efficiencies.
- Ability to complete other vital functions such as- Annual Fire Inspections, fire hydrant maintenance, community education and building pre-plans.

Two options to accomplish this staffing level:

Option 1: Hire six (6) part-time firefighters to each work approximately twenty-eight (28) hours per week to cover the (168) hours each week. The six (6) firefighters at a pay rate of \$18.00 per hour x 168 hours = \$3024.00 per week and \$157,248.00 per year. They will be non-union employees with limited benefits. This staffing model can also become your "Grow your Own Program" as potential future fulltime firefighters for the township.

Option 2: Hire three (3) full-time firefighters, one (1) for each of the three (3) shifts. These three (3) firefighters will each cost approximately \$115,000.00 (wages/benefits) per year for a cumulative yearly total of approximately \$345,000.00.

3. Review shift data and patterns to offer advice and options on reducing and/or eliminating overtime.

The answer to this question lies mostly in what I offered as a solution in the previous question. Changing the staffing model will significantly reduce the amount of overtime that is currently being experienced. The savings from reduced overtime can help offset the financing of hiring new firefighters.

Additionally, after reviewing the data within the payroll records and within the Collective Bargaining Agreement (CBA), I believe the method in which the use of Sick Time and Personal Business are being used causes the need for additional overtime. The CBA provides a benefit of (144) hours per year of Sick Time/Personal Business with no language distinguishing between the two. It is my understanding that the amount of sick and personal time was in existence prior to the fire department unionizing and was subsequently codified in the CBA. There is also no language or rules as to how either Leave Time can be used by the employee. The issue is that after the employee banks away their (240) maximum hours allowed, the CBA as written, essentially incentivizes the employee to use up (take time off) the (144) yearly hour allowance. This system has created these Sick Time/Personal Business hours to be used as additional vacation time off for the employees thus causing more opportunity for the need of overtime.

In an effort to reduce the amount of overtime experienced per year, you need to gain control over the usage of these two Leave Times. The Township should consider negotiating new language in the CBA to separate Sick Time and Personal Business Time. Each clause should stand alone, and each should have their own explicit language as to how an employee is allowed to use it. Neither of these two Leave Times should be used nor be regarded in similar fashion as Vacation Leave.

4. An overall analysis of reducing Fire Department Costs in light of our current and future projected number of calls and (question #8) A review and comment on the past five years of Department expense reports, payroll reports, and annual reports.

As with all Fire Departments, personnel wages and benefits to operate the Department remain the largest expense, generally 90% of the entire budget. This is no different for Oakland Township. Equipment purchase/maintenance, training, and facility maintenance rounds out the rest of the large expenses within the budget.

After review of five years of Fire Department budgets, I do not see anything completely out of order relative to the operational platform that is being used. As explained earlier, there is room for reducing the current overtime expense by instituting changes in staffing and with language changes to the CBA.

One item of note in the budget was the increased Volunteer Firefighter Salary and training expense over the past five years. This line item in 2012 was \$125,000.00 and in 2017 is \$217,000.00, an increase of \$92,000.00. As of this writing, I do not have the data and information needed to determine why this increase has been experienced. I would suggest that it be further researched to identify why this has increased so significantly.

Some additional cost saving practices the Fire Department could consider if they are not already doing so, is to aggressively go after all opportunities for grant funds, more specifically, to always write for the Assistance to Firefighters Grant (AFG). This is a federally funded grant offered yearly to Fire Departments who qualify and apply. The department may even consider contracting a proven grant writer to help assist in this process. The cost for this service will more than pay for itself if a grant is awarded to the department.

The Fire Department should always seek out opportunities to group or consortium purchase items. There are both local and national opportunities to purchase in this manner to receive the benefit of group pricing.

The practice of reevaluating and rebidding established contracts with vendors, contractors, and suppliers should also be completed on a regular basis to ensure the Township is receiving the best services for a competitive cost.

The Fire Department should also establish a comprehensive vehicle and equipment replacement plan that projects out the next 25 years. Having a plan in place will assist the department administration and township officials with planning and forecasting future financial needs.

For the most part, the 2016 Fire Department Annual Report hit the basics of the fire department and was good. A suggestion for future reports would be to have the Fire Chief provide detail of major accomplishments of the past year and forecast their goals for the upcoming year on how they are going to improve the fire department.

A position the Township might consider looking at is not how to reduce the current Fire Department budget costs, but how to reassign current expended funds more effectively. For example, if overtime costs and the cost of maintaining the Paid On-Call firefighters program could be reduced, then these savings could go towards, or be reassigned to hiring either part-time or full-time firefighters as addressed in question #2. A different approach to the use of current funds to provide a more reliable and effective service to the community may prove to be a better vision of where to take the Fire Department.

5. An analysis of the Fire Department's response time as compared to generally accepted standards.

A nationally accepted standard and recommendation of fire/EMS response is provided by the National Fire Protection Agency (NFPA) code 1710.

To summarize it:

- It states that the Fire Department shall have an assembly of a minimum of four (4) firefighters on the scene of a fire in four (4) minutes or less 90% of the time.
- It further states that the Fire Department shall have an assembly of a minimum of fifteen (15) firefighters on scene of a fire within nine (9) minutes 90% of the time.
- It allows 80 seconds for the firefighters to receive the call from dispatch, get into their turn-out gear, and get into their truck to begin response. This is called "Turn-out time."

A local standard for EMS response for area agencies is set and governed by Oakland County Medical Control Authority (OCMCA). This standard does have a governing body that oversees compliance and disciplinary procedures to this standard. It should also be noted that the Fire Department signs a yearly agreement with the OCMCA to adhere and meet the response protocol within the standard.

To summarize the OCMCA Standard:

"When providing Single Tiered emergency response for an urban and suburban geographic service area, assure a response time not to exceed six (6) minutes, 90% of the time, from receipt of call (unit notified time) to time of arrival on scene for the Life Support Agency's Primary Response Unit, when responding to emergency calls."

"Individual licensed EMS responders with an unlicensed vehicle or personal operating vehicle (POV) should report their on-scene time to dispatch. However, the OCMCA is only collecting the response time of licensed EMS units."

Oakland Township Fire Department Average Response Times from 1/1/2012 to 8/1/2017 were:

- Fire – 112 responses with an average response of (06:39)
- EMS – 2503 responses with an average response of (06:15)

Over the past five and half years, fire response has not met NFPA 1710 as it pertains to the arrival of the first company on scene time recommendation. It should be noted that as of this writing, I have not received additional Incident Reports requested that will provide the data detailing the individual arrival times of each fire vehicle dispatched to a fire scene. **This data will be important to review to know the exact time it takes to assemble 15 firefighters on the scene of a fire.** It will also provide great clarity to how long the response for additional apparatus and personnel are actually taking to get on-scene to begin various fire attack operations.

EMS response over the last five and half years for the most part has been in compliance with the OCMCA response standards. However, it is important to note that the EMS response data is reviewed by calendar year relative to agency compliance to the standard. The data below represents response times for the Fire Department during the first seven months of 2017. You will notice both fire and EMS average response times are taking significantly longer during this time period than all previous years back to 2012. Neither fire nor EMS responses comply with NFPA 1710 recommendations, nor OCMCA standard. Further data and information from the Fire Department should be reviewed to determine why this is occurring, before further recommendations can be made.

Oakland Township Fire Department Average Response Times from 1/1/2017 to 8/1/2017

Fire – 11 responses with an average response of (09:49)

EMS – 308 responses with an average response of (07:05)

*Incident Response Reports detailing the individual response times of all fire apparatus and personnel to a fire scene need to be analyzed to provide exact clarity of the entire fire response.

6. The Fire Department's reliance on part-time and/or paid on call and the reliability of doing so into the future.

The reliability of paid on call (POC) firefighters will always be in question not just for Oakland Township, but for all communities who rely on this platform. Research has shown that the use of POC's throughout the country has become more and more difficult for communities to rely on.

Communities are finding that most of their residents have their days taken up with their own careers, family obligations before and after work to tend to, and a multitude of other functions not allowing them the extra time to serve their local Fire Department in that capacity. Other factors that have reduced the amount of people interested, has come by way of increased required trainings, certifications and continuing education requirements that have been imposed both locally and nationally to serve as a POC firefighter. The amount of time one must set aside to serve their community has become out of reach for most that would have any interest. It is also documented that POC's generally serve a community from 1 to 5 years on average before losing interest in the position creating large turnover and a lack of experience with the POC's. Additionally, the fire service has experienced a drastic shift in interest nationally to serve as a fulltime firefighter as a career. The career as a firefighter

is not as attractive as it once was for many reasons and most communities are presently having difficulties in hiring full-time and POC firefighters.

I reviewed documents provided showing data of the rate of response of the POC's for Oakland Township. It appears that the POC's on average respond to approximately 26-28% of the calls. Of the 20 POC's on the report, eleven (11) of them respond less than 20% of the time, while the remaining nine (9) respond to 20% and above. These response percentages are not favorable and demonstrate the reliability issue present within the POC ranks of the Fire Department.

With that, the Township currently finances approximately \$217,000.00 per year in wages to fund the POC program, not including the cost of benefits. The rate of return of this program should be reviewed and perhaps reorganized to be more effective operationally and more efficient fiscally.

So, moving forward, Oakland Township should not rely on POC's to any large extent, but may rely on them for extra staffing well into the emergency, if in fact they respond at all. I am certain as the calls for emergency services increase, it will further strain the response percentages of the POC's.

7. A review of the Township's current fire millage level and a review the fire department's budget to determine whether the revenue is sufficient.

8. A review and comment on the past five years of Department expense reports, payroll reports, and annual reports. (This question was combined and answered with question #4.)

9. An analysis of how to reduce response time without increasing staff and particularly fulltime staff.

The make-up of a "response time" is extremely diverse that has many elements that affect the speed of a response. Responding properly to this question will require additional data and analysis of all the elements.

The current deployment and staffing platform being used does provide challenges to emergency response. As I understand, the department responds both fulltime firefighters on two separate vehicles on most emergency calls. When this occurs, the department is temporarily out of service until these two firefighters are clear from the call or POC's arrive and backfill the fire stations anticipating the next call. If the POC's are delayed or not available then the next emergency call will experience a longer response from a mutual aid partner.

A one firefighter response in a vehicle to an emergency can be less efficient than a two-firefighter response. Having two firefighters provides for one to concentrate solely driving safe in an emergency mode while the other firefighter is able to read a map and navigate the best route of response. When one firefighter responds by themselves they must read the map and memorize the route before responding from the station. This type of response mode can be more cumbersome and less efficient relative time response time. Additionally, the second firefighter serves as another pair of hands and eyes for the operation of emergency lights and sirens to help ensure vehicle safety.

It should be noted that an efficient response is not just focused on how fast one vehicle can arrive on scene, but more importantly, how fast an appropriate number of firefighters can arrive on scene to affect an operation. As I stated earlier in this report the township needs to analyze the response times off all responding vehicles to an emergency call and determine if the resources needed are arriving within acceptable standards.

The best approach would be to conduct a comprehensive review of all the facets and data that go into establishing an emergency Response Time and compare that to what the Oakland Township Fire Department has been experiencing to draw out possible options for improvement.

- 10. A review of the Collective Bargaining Agreement terms and provide an analysis and recommendation of management improvements; such as, appropriateness of applying sickness and vacation hours for purposes of calculating overtime, the advantages of a swing shift, savings from limits on HSA accounts, language to increase shift flexibility (i.e. 24 on/24 off vs. 48 on/48 off) and comment on the pros and cons of a wage increase tied to nonunion staff and the length of the Agreement (2,3, or 4 years).**

The Fair Labor Standards Act (FLSA) requires employers to pay nonexempt employees time and one half of the employees' regular rate of pay for all hours worked over 40 hours in a workweek. Employers do not have to count paid holidays, paid time off, vacation, personal and sick leave hours taken by an employee toward the calculation of the overtime requirement, because these hours are not actually "worked" and are therefore not considered as hours counted toward overtime under the FLSA. Again, it is my understanding that this practice was in existence prior to the fire department unionizing.

In terms of staffing options, I detailed my recommendations in earlier questions within this document. I feel those options are better suited and will provide greater consistency to staffing than using a "Swing Shift" for your department.