City of Medford Fire – Rescue
Oregon

Emergency Service Master Plan

2011

Emergency Services Consulting International

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Executive Summary

This document identifies Medford Fire-Rescue's Emergency Service Master Plan for the City of Medford and Medford Rural Fire Protection District No. 2, Oregon. Response resources, deployment strategies, operational elements, and overall community risks have been evaluated in this document. It establishes response time objectives and standards for measuring the effectiveness of resources within the department and the deployment of those resources. The document is segregated into components generally based on the format recommended by the Center for Public Safety Excellence, *Standards of Cover 5th Edition,* which will be referenced elsewhere in this document.

The Medford Fire-Rescue (MFR) is a direct operating department of City of Medford and provides fire protection and emergency medical services to the community. The department's service area encompasses all of the area within the governmental boundaries of Medford and Medford Rural Fire Protection District No. 2 (a contractual service area).

The City of Medford has a resident population of 74,907 based on the 2010 census. Population in the Medford Rural Fire Protection District No. 2 is estimated to be 11,326 for a total resident population of 86,233. It is estimated that employment brings an additional 11,632[1] people into the city, raising the MFR's daytime service population to approximately 97,865.

The department serves an area of approximately 26 square miles within the City of Medford and an additional 30 square miles for Medford Rural Fire Protection District No. 2. The department operates five fire stations and 20 apparatus. Emergency Communications of Southern Oregon (ECSO) provides emergency call receipt and dispatch service.

The Insurance Services Office (ISO) reviews the fire protection resources within communities and provides a Community Fire Protection Rating system from which insurance rates are often based. The rating system evaluates three primary areas: the emergency communication and dispatch system, the fire department, and the community's pressurized hydrant or tanker-based water supply. The overall rating is then expressed as a number between 1 and 10, with 1 being the highest level of protection and 10 being unprotected or nearly so. As of the latest rating, ISO

[1] Source: City-data.com

gave the City of Medford a rating of Class 4. Within Medford Rural Fire Protection District No. 2 the rating is also Class 4. This rating was conducted in 2005.

In the typical SOC process, potential service area classifications are broken down into five categories:

- **Metropolitan** - geography with populations of over 200,000 people in total and/or a population density of over 3,000 people per square mile. These areas are distinguished by mid-rise and high-rise buildings, often interspersed with smaller structures.
- **Urban** - geography with a population of over 30,000 people and/or a population density of over 2,000 people per square mile.
- **Suburban** - geography with a population of 10,000 to 29,999 and/or a population density of between 1,000 and 2,000 people per square mile.
- **Rural** - geography with a total population of less than 10,000 people or with a population density of less than 1,000 people per square mile.
- **Wilderness/Frontier/Undeveloped** - geography that is both rural and not readily accessible by a publicly or privately maintained road.

An analysis of the City of Medford's population density reveals that it is primarily of one classification; urban. Medford Rural Fire Protection District No. 2 is primarily rural.

A Performance Statement and Objectives for the services provided by the Medford Fire-Rescue to the City of Medford and Medford Rural Fire Protection District No. 2 have been developed. These further define the quality and quantity of service expected by the community and consistently pursued by the Medford Fire-Rescue.

Overall Performance Statement

The Medford Fire-Rescue has adopted the following Performance Statement:

Performance Statement (Mission Statement)

The mission of the Medford Fire-Rescue is to serve,
educate, and protect its citizens from the effects of...
HOSTILE FIRE
MEDICAL EMERGENCIES
HAZARDOUS MATERIAL EXPOSURES
NATURAL AND MANMADE DISASTERS
This mission will be accomplished through integrated efforts and
using our available funding creatively and effectively.

In addition to the overall performance statement, the following response-specific performance objectives have been established by Medford Fire-Rescue and will be analyzed as part of this report. These objectives are based on the department's current resources, capability and performance. As noted previously, the City of Medford is primarily urban and Medford Rural Fire Protection District No. 2 is primarily rural. Thus the territory addressed by each objective can be defined by the political boundaries of each jurisdiction.

Dispatch Performance Objective:

- *Response resources shall be notified of a priority emergency within 60 seconds of receipt of the call at the dispatch center, 90 percent of the time.*

Turnout Time Performance Objective:

- *Response personnel shall assemble on apparatus and initiate movement towards a priority emergency within 90 seconds of notification by the dispatch center, 90 percent of the time.*

First-Due Response Performance Objective:

1. *Urban - The first response unit capable of initiating effective incident intervention shall arrive at a priority emergency within six minutes 30 seconds from receipt of the call at the dispatch center, 90 percent of the time.*

2. *Rural - The first response unit capable of initiating effective incident intervention shall arrive at a priority emergency within 10 minutes from receipt of the call at the dispatch center, 90 percent of the time.*

Concentration Performance Objective:

1. *Urban - For moderate risk incidents, the Medford Fire-Rescue shall assemble an Effective Response Force (ERF) consisting of personnel sufficient to effectively mitigate the incident based on risk within 14 minutes from receipt of the call at the dispatch center, 90 percent of the time.*

2. *Rural - For moderate risk incidents, the Medford Fire-Rescue shall assemble an Effective Response Force (ERF) consisting of personnel sufficient to effectively mitigate the incident based on risk within 17 minutes from receipt of the call at the dispatch center, 90 percent of the time.*

It is recommended that the Medford City Council and Medford Rural Fire Protection District No. 2 Board of Directors adopt response performance goals describing its desired level of response performance. These are goals to be achieved in the future as funding is available to provide the necessary resources.

Dispatch Performance Goal:

- *Response resources shall be notified of a priority emergency within 60 seconds of receipt of the call at the dispatch center, 90 percent of the time.*

Turnout Time Performance Goal:

- *Response personnel shall assemble on apparatus and initiate movement towards a priority emergency within 90 seconds of notification by the dispatch center, 90 percent of the time.*

First-Due Response Performance Goal:

1. *Urban - The first response unit capable of initiating effective incident intervention shall arrive at a priority emergency within six minutes 30 seconds from receipt of the call at the dispatch center, 90 percent of the time.*
2. *Rural - The first response unit capable of initiating effective incident intervention shall arrive at a priority emergency within 10 minutes from receipt of the call at the dispatch center, 90 percent of the time.*

Concentration Performance Goal:

1. *Urban - For moderate risk incidents, the Medford Fire-Rescue shall assemble an Effective Response Force (ERF) consisting of personnel sufficient to effectively mitigate the incident based on risk within 14 minutes from receipt of the call at the dispatch center, 90 percent of the time.*
2. *Rural - For moderate risk incidents, the Medford Fire-Rescue shall assemble an Effective Response Force (ERF) consisting of personnel sufficient to effectively mitigate the incident based on risk within 17 minutes from receipt of the call at the dispatch center, 90 percent of the time.*

The analysis conducted during the evaluation phase of this process identified a number of opportunities to improve service (performance goals). The following performance goals are offered for consideration. These goals and specific recommendations for each are described in more detail at the end of this report (Component H).

- ***Performance Goal A: Formally adopt Response Performance Goals***
- ***Performance Goal B: Improve dispatch call processing performance***
- ***Performance Goal C: Improve turnout time performance***
- ***Performance Goal D: Reduce incident travel time***
- ***Performance Goal E: Improve current response capability with additional staffed response apparatus.***
- ***Performance Goal F: Implement opportunities to provide an overall increase in community fire and life safety.***

Recommendations

During the course of this study a number of issues, concerns, and opportunities were identified. The following recommendations are intended to accomplish three primary objectives:

1. Defining clearly the expected level of performance provided by Medford Fire-Rescue.
2. Improve service delivery with no or minimal expenditure of funds.
3. Identify service level improvement opportunities that can be implemented as funding becomes available.

The recommendations are described as performance improvement goals and should be implemented as funding allows. Each will improve the Medford Fire-Rescue's ability to provide effective service to the community.

Performance Goal A: Formally Adopt Response Performance Goals

A community's desired level of service is a uniquely individual decision. No two communities are exactly alike. Performance goals must be tailored to match community expectations, community conditions, and the ability to pay for the resources necessary to attain the desired level of service.

Levels of service and resource allocation decisions are the responsibility of the community's elected officials, in this case the City of Medford City Council and the Board of Directors of Medford Rural Fire Protection District No. 2. The policy making bodies must carefully balance the needs and expectations of its citizenry when deciding how much money to allocate to all of the services each provides.

With this in mind the following are recommended as the Medford Fire-Rescue fire and life safety response performance goals. These are not levels of service that must be achieved immediately but, instead, are targets for achievement when resources are available to do so.

Call-Processing Performance Goal

In many areas of the country, call handling or call processing are not functions under direct control of the fire department. This is the case in Medford. MFR is provided communications and dispatch services by Emergency Communications of Southern Oregon (ECSO), an independent agency. The dispatch center is the primary Public Safety Answering Point (PSAP) and dispatch center for Medford and other area emergency service providers.

Call processing time is the first phase of overall response time. Though much information must be gathered to properly identify the resources needed to respond to the emergency, keeping this time as short as possible has a direct impact on response time.

ECSO has established the following performance objective:

- Priority incidents shall be processed and dispatched to the appropriate agency(s) within 60 seconds, 95 percent of the time. (Initiate to dispatch time)

ECSO is meeting its performance objective for MFR 65 percent of the time. Call processing time is within two minutes eight seconds, 95 percent of the time.

The following Call Processing Performance Goal is recommended. It measures performance more consistently with the other response performance measures to be discussed below.

- ***Response resources shall be notified of a priority emergency within 60 seconds of receipt of the call at the dispatch center, 90 percent of the time.***

Current performance, based on this Performance Goal is within one minute 40 seconds, 90 percent of the time. Call processing time of within 60 seconds is achieved 65 percent of the time.

Turnout Time Performance Goal

Turnout time is one area over which the fire department has total control and is not affected by outside influences. Turnout time, or the time between when the call is received by the response units (dispatched) and when the unit is actually en route to the scene (responding), can have dramatic effects on overall response times. Reducing this response time component reduces total response time.

A national standard[6] recommends turnout time performance objectives of 80 seconds or less for structure fire response and 60 seconds or less for all other priority responses. MFR is not meeting the turnout time recommended in the national standard for either structure fires or other incidents. Given that turnout time is one area in which field personnel can improve overall response time, an aggressive objective is recommended.

[6] National Fire Protection Association *Standard 1710*.

Current turnout time performance for all priority incidents in the MFR service area is within one minute 59 seconds, 90 percent of the time.

The following Turnout Time Performance Goal is recommended:

- ***Response personnel shall assemble on apparatus and initiate movement towards a priority emergency within 90 seconds of notification by the dispatch center, 90 percent of the time.***

Distribution Performance Goal (First-Due Unit Arrival)

A fire department's *distribution* is essentially the location of resources to assure an initial intervention within the specific time frame identified in the community's performance goals. Current received to arrival performance within the City of Medford is within eight minutes 14 seconds, 90 percent of the time. Within MRFPD No. 2 current received to arrival performance is within 11 minutes 37 seconds, 90 percent of the time.

The following Distribution (first-due) Performance Goals are recommended.

1. ***Urban - The first response unit capable of initiating effective incident intervention shall arrive at a priority emergency within six minutes 30 seconds from receipt of the call at the dispatch center, 90 percent of the time.***
2. ***Rural - The first response unit capable of initiating effective incident intervention shall arrive at a priority emergency within 10 minutes from receipt of the call at the dispatch center, 90 percent of the time.***

Concentration Performance Goal

A fire department's *concentration* is the spacing of multiple resources close enough together so that an initial "Effective Response Force" (ERF) for a given risk can be assembled on the scene of an emergency within the specific time frame identified in the community's performance goals for that risk type. An initial effective response force is defined as that which will be most likely to stop the escalation of the emergency.

The ERF for moderate risk structure fires in Medford is identified as the arrival of at least four fire engines and one battalion chief (14 firefighters total). This initial ERF does not necessarily represent the entire alarm assignment, as additional units may be assigned based on long-term incident needs and risks. Additional engines, ladders, or other specialty companies are

assigned to higher risk responses in order to accomplish additional critical tasks that are necessary beyond the initial attack and containment.

Current performance provides this initial ERF to the City of Medford (urban area) within 15 minutes 50 seconds, 90 percent of the time. Within MRFPD No. 2 (rural area) the initial ERF is provided within 18 minutes 26 seconds, 90 percent of the time. Improving the timeliness of the ERF response is very desirable given structure fire growth rates and the consequences of significant fires.

The following Concentration Performance Goals are recommended.

1. ***Urban - For moderate risk incidents, the Medford Fire-Rescue shall assemble an Effective Response Force (ERF) consisting of personnel sufficient to effectively mitigate the incident based on risk within 14 minutes from receipt of the call at the dispatch center, 90 percent of the time.***
2. ***Rural - For moderate risk incidents, the Medford Fire-Rescue shall assemble an Effective Response Force (ERF) consisting of personnel sufficient to effectively mitigate the incident based on risk within 17 minutes from receipt of the call at the dispatch center, 90 percent of the time.***

Performance Goal B: Improve Dispatch Call Processing Performance

National Fire Protection Association *Standard 1221* describes that the dispatch center should receive, process, and dispatch an emergency incident within 60 seconds or less, 90 percent of the time. ECSO is not currently achieving this level of performance. Since the time taken for the interaction of the person requesting emergency assistance with the dispatch center is part of the overall response sequence, it is important that ECSO take steps to shorten the call processing time. ECSO agrees and has offered the following measures to begin that improvement:

1. Develop a reporting system to provide data on current performance. Regularly analyze the data in order to determine which areas need immediate improvement.
2. Develop a quality assurance program that includes a process for reviewing the dispatch portion of fire calls. ECSO is currently working on a draft of that process.
3. Continue participation in the workgroup selecting and implementing a fire station alerting system to support standardization and efficiency in the dispatching process.

4. Develop specific, written and scenario based training that will bring consistency to the dispatch process.

It is also recommended that ECSO staff visit and review high performance dispatch centers to identify best practices that could be implemented at ECSO.

Medford Fire-Rescue has requested that ECSO screen requests for assistance to reduce the number of non-critical incidents, primarily emergency medical incidents, to which it responds. While this has accomplished a reduction in response workload, the time required to fully assess the nature of an emergency assistance request so as to make the dispatch or no-dispatch decision does delay notification of response personnel.

MFR should review this practice to determine if reduced response workload has greater value than providing more prompt notification of response personnel.

Performance Goal C: Improve Turnout Time Performance

National guidance sets a target of within 60 seconds, 90 percent of the time, to initiate response (turnout time) for most emergency responses. For structure fire responses, national guidance sets turnout time at within 80 seconds, 90 percent of the time. This is the time period between when dispatchers notify response personnel of the incident and when response crews begin travel towards the incident location. MFR's current turnout time performance is 59 seconds longer for all incidents, and 18 seconds longer for structure fires. Current performance is 29 seconds longer than the recommended performance goal.

MFR should review fire station configuration to determine if there are obstacles to rapid turnout. Solutions could include adding doors between rooms, rearranging furnishings and adding dispatch alerting system speakers to improve audibility.

Response personnel performance must also be addressed. Fire department management should regularly prepare information that describes current turnout time performance by individual response crews. Performance expectations should be reinforced and periodic monitoring conducted to determine if improvements are being made and sustained. Response

personnel should avoid activities that extend turnout times. Response personnel must make serious efforts to improve their turnout time performance for the benefit of the community.

Estimated cost: Dependent on physical rearrangements required for each station.

Performance Goal D: Reduce Incident Travel Time

There are several opportunities to improve travel times, the longest phase of the overall response continuum. Implementation in some cases will not be easy or inexpensive, but should be given strong consideration as a service delivery improvement opportunity.

Reduce responses cancelled en route

Medford Fire-Rescue response units experience a high number of responses, nearly 19%, that are cancelled prior to the response unit's arrival. While some level of cancelled responses is expected, the number experienced by MFR is contributing to reduced response unit reliability.

Once a response unit is assigned to an incident it is not available for a subsequent request for service. If the first incident results in a cancelled response, the second incident experiences a longer than necessary travel time from a more distant station.

A complete review of cancelled response history should be undertaken to determine if the number of cancelled responses can be reduced.

Estimated cost: None

Implement closest unit dispatch technology

Many fire departments across the country have implemented technology that ensures the closest available response unit is sent to an emergency. This technology incorporates global positioning systems on fire apparatus linked to the dispatch center's computer aided dispatch system. When a call is received at the dispatch center, the incident's location is instantly compared to the actual location of every available response unit. Travel times are computer calculated and the closest unit selected for dispatch. Implementation of this system requires:

- Dispatch center computer software capable of this function (currently being developed by ECSO).
- Street information for use in the system that includes data points required to conduct "closest unit analysis" (this data is currently available).
- Global positioning equipment installed on fire apparatus (MFR has already installed this equipment).

Communities that have implemented this technology have realized significant improvements in response times and emergency event outcomes. Fire department managers are able to better redistribute response resources to ensure effective service area-wide response coverage.

Estimated cost: $100,000 to $200,000 depending on ECSO computer aided dispatch software changes required.

Install video-conferencing systems in fire stations

It is often necessary for fire department personnel to meet collectively for training, meetings, and other purposes. MFR will often assemble three of its five available response units at a station for such purposes. At times, it may have four of the five available response units at a station. Unfortunately this occurs during the times of the day when response activity is at its highest.

Many of these gatherings can be done as effectively via video-conferencing rather than in person. Classroom training sessions, meetings, and other face-to-face conversations can take place “on-line” with equal result.

The benefit is that response units and personnel can stay within their primary service area while participating in the training or meeting. This will reduce incident travel time since the response unit will not have to travel the extra distance to return to its primary service area to handle an emergency.

Estimated cost: $20,000 to $40,000 depending on the system selected.

Manage response unit deployment to minimize non-response out of primary area movement

Anytime a response unit is out of its primary area there is a potential for a long response. Either the primary unit will have to return from a longer distance away or a unit from an adjacent station will have to serve the emergency, also with a longer travel time. These out of area movements should be kept to an absolute minimum.

For example, MFR should consider use of delivery services to deliver supplies rather than having response units travel to the supply source. Picking up and delivering apparatus to the fleet maintenance shop should be done by someone other than the primary response crew.

MFR should review all activities that cause a response unit to leave its primary service area and establish alternatives to ensure units remain in their primary service area to the maximum extent possible.

Estimated cost: None

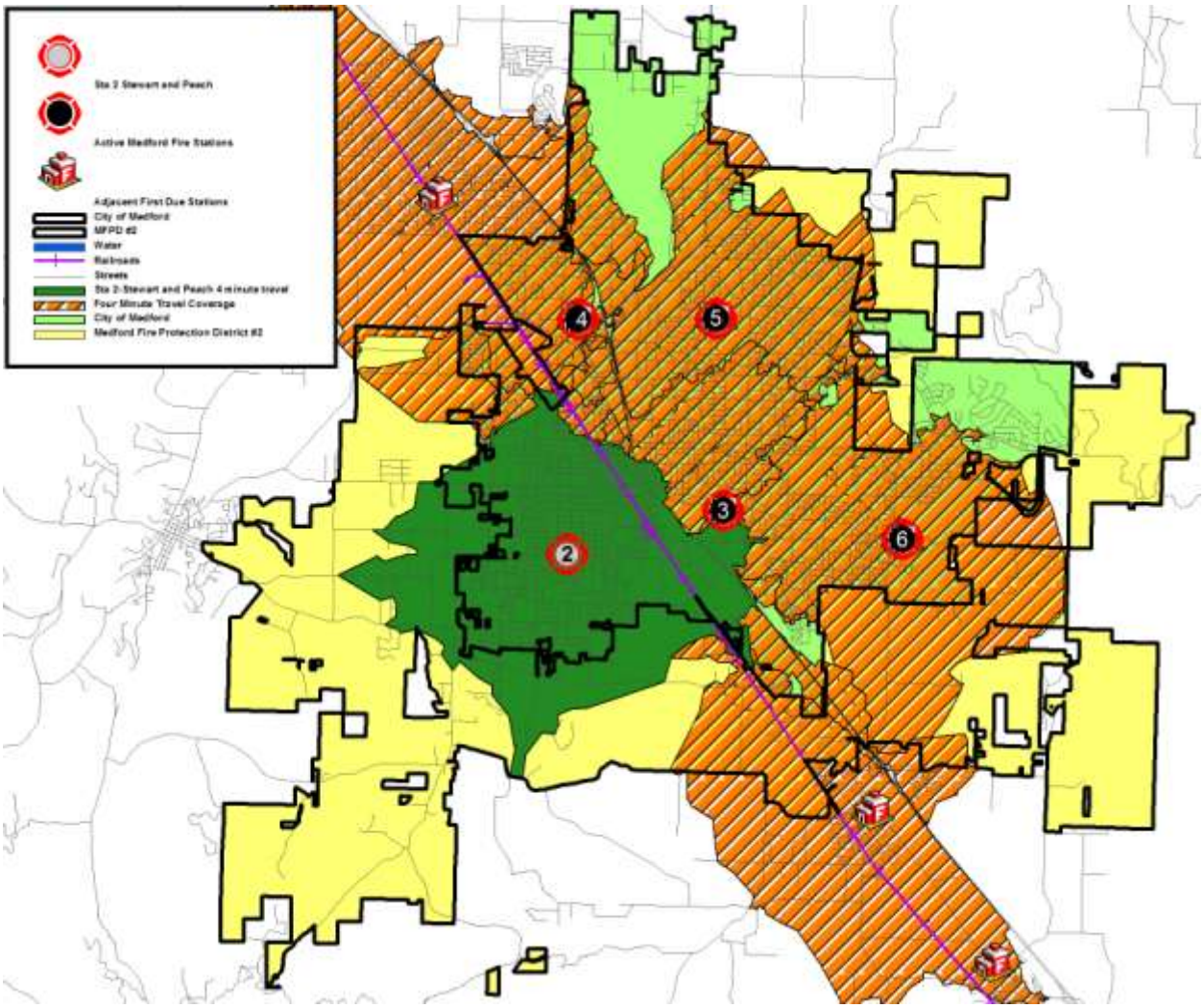
Relocate Fire Station 2

The current Fire Station 2 (1241 W. 8th) is functionally inadequate. The size of the apparatus bay limits the type and of apparatus that can be housed. Crew quarters are small, maintenance space is lacking, and the structure has not been seismically reinforced.

Renovation of this facility would be costly and the land on which it sits is too small to allow the building's expansion to a size that would provide for needed space. The building should be replaced with a new energy efficient, seismically reinforced facility.

A more suitable location for Fire Station 2 would be in the vicinity of Stewart Ave. and S. Peach St. This location, and the four minute travel coverage area it would provide, is shown in the following map. This map illustrates travel coverage using the Urban response performance goal.

Figure 83: Proposed Fire Station 2 Relocation – Urban Response Goal

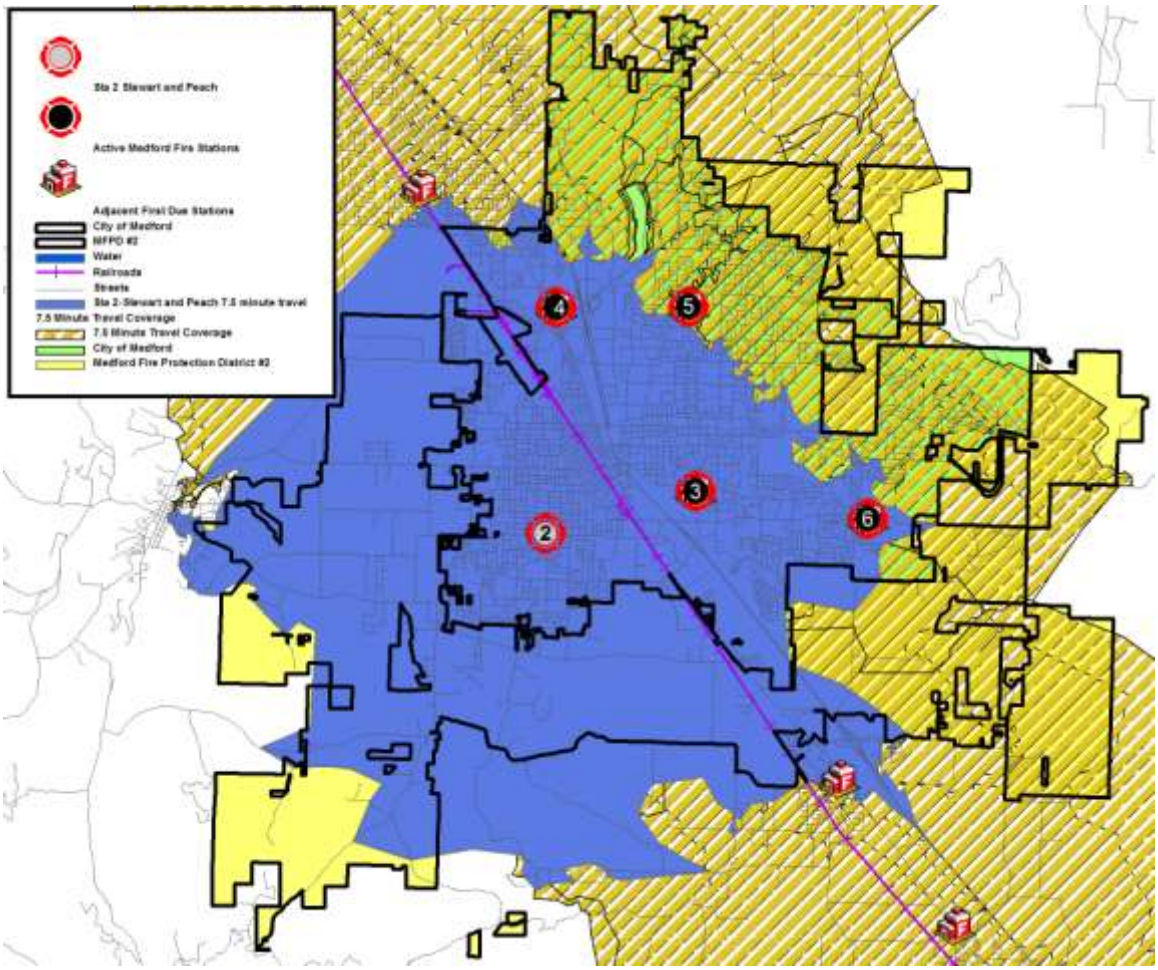


The new location improves geographic coverage of the MFR service area. Service to the city's southwest area is improved without impacting service to the city's central core. It also reduces the amount of coverage overlap in the central core.

There is a small improvement in the percentage of incidents that would have been within four travel minutes of a fire station. Currently 96.6 percent of incidents were with four travel minutes. With this relocation that number improves to 97.5 percent.

The Stewart and Peach location also improves service to MRFPD No. 2 as shown in the following map. This map illustrates travel coverage using the rural response performance goal.

Figure 84: Proposed Fire Station 2 Relocation – Rural Response Goal



The new location places virtually all of the incidents that occurred within MRFPD No. 2 territory within seven minutes 30 seconds travel time of a fire station (98.9 percent). 77 percent of all district incidents would have been within four minutes travel time of a fire station.

Estimated cost: $2.5 to $3.5 million depending on facility design and cost of land.

Performance Goal E: Improve Current Response Capability with Additional Staffed Response Apparatus

As noted in previous sections, response workload will continue to increase within the current service area boundaries. To compound the issue, the city's boundaries are intended to change in the coming years increasing the amount of urban area. This will mean an increase in response workload.

The following two recommendations should be considered both in the near-term and long-term. The first is in response to comments received during the stakeholder interviews. The second is one that will likely be necessary in the future.

Staff and operate a ladder truck

MFR does not staff its ladder truck on a full-time basis. It either uses a crew from another unit to staff the ladder truck as needed or relies on Jackson County Fire District No. 3 to provide ladder truck response.

During the stakeholder interviews, several city councilors expressed concern about relying on a neighboring agency for an important response resource such as a ladder truck. Reliability and response time were primary concerns.

MFR could resolve this and increase the number of response units available to the system by staffing its existing ladder truck. The vehicle is in good condition and of a design suitable for service within the MFR service area. The resource is important for several incident types including structure fires and certain technical rescues.

Staffing the ladder truck with three firefighters per shift would require at least nine personnel be hired, plus either relief personnel, overtime funds, or a combination of the two to provide for vacation and sick leave coverage. MFR could consider using one of the four personnel regularly assigned to Heavy Rescue Engine 8104 to reduce the number of new employees needed for ladder truck staffing.

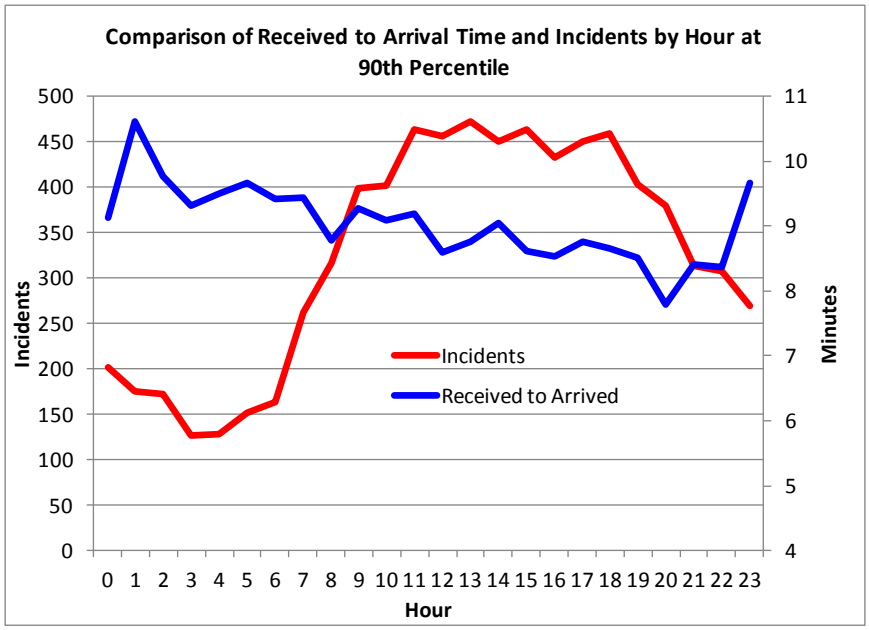
Benefits to the community include having an additional response resource available to the system. This will provide more prompt response during peak activity periods. It will provide a resource important for several incident types not now readily available. It will also provide additional credit points for the community Public Protection Classification assigned by the Insurance Services Office. This classification is used by many property insurance companies to determine the cost of fire insurance. Staffing the ladder truck does not guarantee reduced insurance costs, however.

Estimated cost: $680,000 to $1.1 million annually

Staff a response unit during peak activity periods

Current response workload is within the capabilities of available MFR resources. Response to the occasional unusually high number of concurrent incidents is adequately supported by mutual aid from neighboring agencies. Further, as shown in the following chart, response time performance is not currently affected by the level of response activity.

Figure 85: Comparison of Response Activity and Response Time



However, as response workload increases this is likely to change. Without additional resources MFR will experience increasing response times during peak workload hours. When that begins to be noticed MFR should add an additional response unit during peak activity hours to improve response reliability and performance.

Since most calls for service are emergency medical incidents a two-person quick response unit would provide system value at the least cost. Based on the workload forecast presented earlier in this report MFR could anticipate needing this unit within the next five to seven years. It should be placed at the station with the response unit experiencing the highest unit hour utilization, currently Fire Station 2.

Estimated cost: $100,000 to $150,000 one-time cost. $680,000 annually.

Performance Goal F: Implement Opportunities to Provide an Overall Increase in Community Fire and Life Safety

Several recommendations are offered that may not directly relate to the MFR response resource deployment system, but could provide incremental improvements to overall community fire and life safety.

Data collection and analysis

Medford Fire-Rescue has access to data that is very useful to conducting ongoing evaluation of emergency response performance. MFR staff use this data to self-evaluate its performance in a number of ways.

It is recommended that MFR develop reporting systems using available data to provide more frequent and comprehensive management analysis of system performance. At least monthly, department staff should generate and review performance reports and make system adjustments as appropriate. The following reports should be part of that ongoing review:

- Performance based on its adopted performance goals
    - Dispatch call processing time
    - Turnout time
    - Travel time
    - Overall response time
    - Full effective response force time
- Performance within sub-regions of the service area
- Unit workload analysis
- Crew performance
    - Turnout time
    - Travel time
- Exception reports detailing unusual activity or unusual response performance

Also recommended is a closer integration of MFR response data with data captured and maintained by Mercy Flights Ambulance (MFA). MFA captures incident data, including dispatch and arrival times for its ambulances. That data, combined with MFR data, would provide a more detailed picture of how well the overall emergency response system is performing. As a critical service provider with an exclusive right to serve the greater Medford area, MFA should be expected to provide more detailed accountability of its activities.

Estimated cost: None

More closely integrate Mercy Flights and MFR response practices

Medford Fire-Rescue and Mercy Flights Ambulance routinely respond to the same emergency incidents. MFR is dispatched by ECSO. MFA provides dispatch service for its ambulances. The typical call-handling process is as follows:

1. The 9-1-1 call is received at ECSO.
2. The ECSO call taker gathers needed information from the caller and enters the incident into the dispatch system.
3. The entered incident is sent to the fire dispatcher and to a computer screen at the MFA dispatch center.
4. ECSO dispatches fire department response unit(s).
5. MFA re-enters the incident information into its computer dispatch system and dispatches the ambulance.

During the response, MFR and MFA response units are often on separate radio frequencies even though MFA has the ability to communicate on the MFR frequencies. Messages between responding units are typically relayed between the two dispatch centers, delaying the communication.

Both MFR and MFA should review and reconsider these practices. To the extent possible all units responding to an emergency should be communicating directly on a common radio frequency. Further, the practice of using separate dispatch centers should be reconsidered. The ideal system fully integrates and consolidates call receipt, dispatch, and radio communications practices to ensure time delays are minimizes and response coordination is at its fullest.

Estimated cost: None for radio communication practice changes. Dispatch center consolidation would carry a cost that cannot be estimated at this point.

Boundary drop dispatch

MFR has mutual and automatic aid agreements with neighboring fire agencies. These agreements provide for the ability to call for assistance on major emergencies and automatic response to certain areas and incident types.

MFR and its neighboring agencies should review these agreements to determine if adjustments are appropriate. This review should identify all areas where either MFR is closer to a neighboring agency's territory or a neighboring agency is closer to MFR territory. Ideally, the closest unit is always dispatched to an incident regardless of jurisdictional boundaries. Important considerations in this evaluation include the availability of the appropriate type of response unit for an incident type, staffing levels to ensure effective performance, and the need to ensure that incident reports are filed in a timely manner by the responding agency to the agency receiving the service.

Estimated cost: None

Fire sprinkler ordinance

National model building and fire codes have recognized the value of automatic fire suppression equipment (fire sprinklers). Model codes now require fire sprinklers be installed in all residential occupancies including single family and multi-family dwellings.

In Oregon, new multi-family dwellings are required to install fire sprinkler systems. However, Oregon building codes do not require fire sprinkler installation in single family homes. There is a process by which local jurisdictions can request the authority to add this important fire safety provision to its local building requirements.

Fire sprinkler technology has improved considerably over the years. The cost of installation in many communities has decreased to as little as $0.60 per square foot and is typically around $1.30 to $1.60 per square foot. At the high cost, a 2,000 square foot home can be protected with fire sprinklers for around $3,200.

Residential fire sprinklers have an excellent track record nationally. A 15 year study completed in Scottsdale Arizona, a community that has required fire sprinklers in homes for more than that time, proves the value. Fire losses have decreased dramatically and fire fatalities have been virtually eliminated. The only fatalities reported were people "intimate to the fire" (i.e. the initial material ignited was the clothing being worn by the person).

There are two conditions in Medford that would need to be addressed before moving forward with a residential fire sprinkler requirement. First, the Medford Water Commission should waive

system development charges for homes that need a larger water meter to support the fire sprinkler system. Several communities in Oregon have already done so including Gresham and Salem. The benefits to both the home's residents, and the fire department in management of future workload, far outweigh the small amount of money received from the higher system development charge.

Second, the local cost of installation should be reduced. Current costs, as reported by the city fire marshal, are in the $2.50 to $3.00 per square foot range. Residential fire sprinklers are a relatively simple technology. It takes only a small amount of training to understand how to design the system and install it. Licensed plumbers already understand the requirements for potable water connections and pipe installation. Other Oregon communities have had success training plumbers to do residential fire sprinkler design and installation. The MFR should consider providing training to local plumbing contractors on the design and installation of residential fire sprinklers. Increasing the number of installers increases competition and reduces prices.

Estimated cost: Less than $1,000 for sprinkler installation training.

Prepare a Facilities Master Plan

Medford Fire-Rescue fire stations are all essential public facilities and should be maintained in the most effective and efficient manner possible. Only one of the five stations was built since the mid-1970s.

MFR should retain the services of a qualified architectural/facility engineering firm to conduct a thorough assessment of each station and develop a master plan for facility improvements. This would include initiatives to improve livability and functionality. Issues that should be addressed include providing for mixed gender facilities, addressing layout issues that are impacting turnout time performance, long-term needs for major system replacement such as HVAC and roofing, energy efficiency improvements, and others.

Estimated cost: $25,000 to $35,000

Develop and adopt a Strategic Plan

This Emergency Service Master Plan has completed a thorough assessment of the community environment, response resources, and system performance of Medford Fire-Rescue. It has also provided a series of recommendations for improvement.

There is now a need for a detailed plan for the next five year or more time period to guide specific action to be taken to implement those recommendations selected for action. The development of a Strategic Plan is recommended.

The Strategic Plan will provide a detailed roadmap for MFR. It will include goals, objectives and action steps that should be accomplished to implement the selected recommendations of this Master Plan and all other initiatives being undertaken by the department in other service areas. This will allow the organization to balance the priorities of the work it should do and with the realities of its available resources through the assignment of timelines for each of the identified objectives.

The Strategic Plan will provide a clear focus on the important work to be done by MFR in the future.

Estimated cost: $10,000 to $15,000