

2015  
2016

# Monterey County Emergency Medical Services Agency Report to the Monterey County Board of Supervisors

ANNUAL REPORT

COUNTY OF MONTEREY | Health Department



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## Comments from the EMS Director

The 2015-2016 Fiscal Year was a period of transition and accomplishment for both the Monterey County Emergency Medical Services (EMS) Agency and the Monterey County EMS System. Between February 2015 and February 2016, the EMS Agency saw retirements and resignations of seventy-two percent of its staff, including the EMS Director and Trauma System Coordinator. As of September 2016, the EMS Agency has nearly completed replacing its staffing, and is positioning itself to meet the state law-mandated requirements of a local EMS Agency and to move forward to assure operational performance, financial stability, and clinical quality within the Monterey County EMS System.

In spite of the significant transition, the EMS Agency had a productive year. Working with engaged stakeholders, the EMS Agency resolved numerous long-term EMS System challenges, including revising policies and procedures, developing a coherent EMS Advisory Committee structure, beginning to enhance the County's medical disaster capability, starting the development of an EMS System quality improvement program, and implementing a comprehensive EMS Data System, which captures an electronic patient care record for every patient from each first responder and ambulance provider.

A sentinel element of the EMS Agency's role is informing you; County executives and elected officials, about the performance of the Monterey County EMS System, using metrics that *meaningfully* answer the question: How well is the Monterey County EMS System performing? This annual report is one of the mediums we will use to provide comprehensive information about the performance of the EMS System. In the months ahead, we will endeavor to provide additional reports that describe the performance of the EMS System.

The EMS Agency would like to thank the Honorable Members of the Monterey County Board of Supervisors, Dr. Lew Bauman, Ms. Elsa Jimenez, community partners, and first responders, emergency telecommunications professionals, EMTs and paramedics for your dedication, commitment, and effort in support of the Monterey County EMS System.

Respectfully submitted,

*Michael Petrie*

Michael Petrie, EMT-P, MBA, MA  
EMS Bureau Chief/EMS Director

## Comments from the EMS Medical Director

As I assumed the position of EMS Medical Director over 20 years ago, I recall several of my emergency medicine colleagues and myself compiling ideas to deliver medical care to ill patients before they were able to reach a hospital – “prehospital” as it was called. There was very little integration with our hospitals; but rather the idea was to get medical started in the ambulance, and get the patients to the hospitals, any hospital, fast.

Fast forward to the past 10 years when EMS analysis clearly showed that getting patients to specific hospitals for special care resulted in better patient outcomes. As a result, CHOMP and SVMH, having developed excellent standards, became the County designated Cardiac (STEMI) and Stroke Specialty hospitals to specifically receive heart and stroke patients from our ambulances. Both hospitals have since been recognized nationally for their specialty services.

In January 2015, with State and County approval, NMC was designated by the Agency as a Level II Trauma Center and opened its door to receive major trauma patients in-and-out of our County. As a major trauma receiving facility, Level II, NMC became one of only twelve such hospitals approved by the state between our southern county border and Alameda. These hospitals include Stanford, San Francisco General, and Highland Hospital in Oakland. NMC trauma patient acuity is exceeded by only one of these 12 hospitals, and its outstanding care is recognized by its peers in 2016.

EMS in 2016 is a very complex and integrated delivery system. This County lead integration involves starting care in the field with early communication to our Specialty Care hospitals for all patients entering the 911 System. Our medics begin expeditious care while appropriate specialists are activated, and hospitals prepare for patient arrival. Because Cardiac Care starts in the ambulance, patients suffering a heart attack are identified early and receive state-of-the-art care faster, often exceeding the national average by as much as 30 minutes. Monterey County stroke policies facilitate stroke patient care for up to 8 hour from on-set of symptoms as compared to 3 hours in many areas of the country. Our Stroke Centers have continued to exceed State standards and are also networked with major hospitals such as Stanford for comprehensive care. Now, major trauma care is delivered within our County, as well.

This integration process developed and lead by the EMS Agency means that all of our County patients can receive the best of care, whatever the illness, within our borders. Patients and their families, as a result, can avoid the logistic, financial, and emotional hardship often associated with out-of-County care.

No one wants to call 911; however, when the call has to be made everyone wants the best service delivered and to be satisfied with the care. This is our Agency’s major goal.

The Monterey County EMS Agency continues to deliver evidence-based, state-of-the-art prehospital care. It is with humility and pride that I continue as your EMS Medical Director, and look forward to the delivery of the most efficient and comprehensive care.

Sincerely,

*James Stubblefield*

James Stubblefield, MD, FACEP, FAAEM

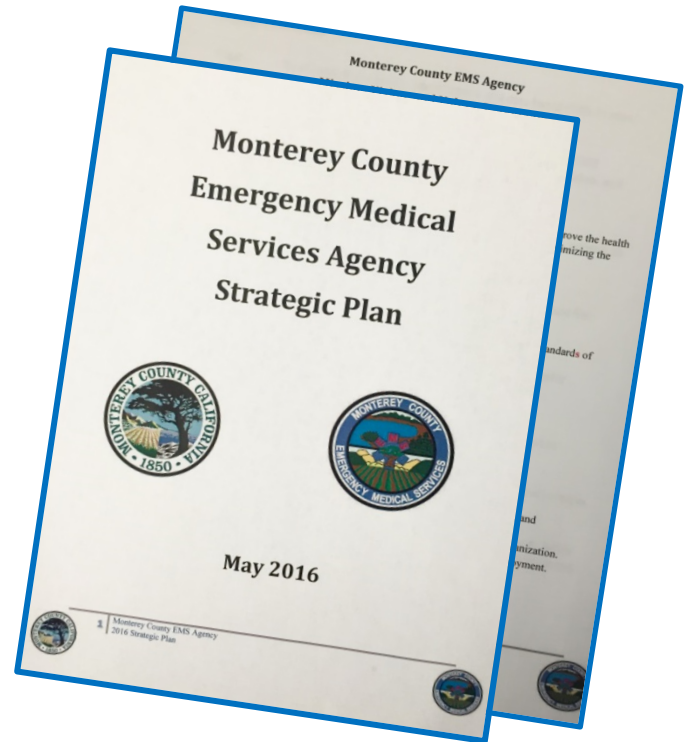
Medical Director

# The Monterey County EMS Agency: 2015-2016

## EMS Agency Strategic Planning Process

Between February and April 2016, the EMS Agency developed its first EMS Agency Strategic Plan. This plan was the result of a two-day strategic planning process, which involved all EMS Agency personnel. Members of the Emergency Medical Care Committee (EMCC) reviewed and requested minor revisions to the plan, which were agreed to by the EMS Agency.

The EMS Agency Strategic Plan articulates the EMS Agency’s Mission, Vision, and Values Statements and identifies eight goal statements. The strategic plan was created to focus and prioritize the work of the EMS Agency into those areas that are most important to enhancing, protecting, and improving the health of the people of Monterey County by collaboratively planning, regulating, and optimizing the quality and stability of the emergency medical services system. The eight goals in the EMS Agency Strategic Plan are listed below:



- Goal 1: To transition to a quality improvement and data-based EMS System.
- Goal 2: To implement electronic patient care reporting among all EMS communications centers, first responders, ambulance providers, and hospitals.
- Goal 3: To assess and redesign the Monterey County EMS System, consistent with the Triple Aim.
- Goal 4: To prepare and conduct a competitive process that will ensure the provision of 911 emergency ambulance service.
- Goal 5: To develop robust multi-casualty incident and medical disaster capabilities.
- Goal 6: To systematically and regularly review and revise EMS System policies, procedures, and protocols.
- Goal 7: To communicate the EMS Agency’s programs, activities, and services to EMS stakeholders.

Goal 8: To strengthen the EMS Agency’s staffing and infrastructure to fulfill state statutory and regulatory responsibilities and local legislative and policy-based responsibilities.

## Financial Management

The EMS Agency administers the CSA-74 fund and the Maddy Fund. These funds support the provision of EMS within Monterey County. Revenue from these funds support emergency physicians, Natividad Medical Center, Mee Memorial Hospital, and EMS first responder organizations, including fire departments and fire districts.

### Community Service Area (CSA) 74

In 1998, the County of Monterey sponsored a ballot measure to establish the CSA-74 benefit assessment on real property within the County to finance a County-wide paramedic emergency medical services (EMS) program. On March 7, 2000, to comply with Proposition 218, Monterey County voters approved Measure A, replacing the CSA-74 benefit assessment with an equivalent special tax. The special tax is by the EMS Agency and is used "for the purpose of funding the County-wide paramedic EMS system, which will provide advanced life-saving support to victims in response to emergency calls".

The CSA-74 special tax is assessed according to Monterey County’s Land Use Codes. The basic unit is a single-family dwelling. All other land uses are assessed either a percentage or multiple of that basic unit. During FY15-16, the CSA-74 special tax was assessed against 117,143 units, 3,807 trailer spaces and 11,503 hotel rooms. Trailer spaces and hotel rooms are calculated differently, because many spaces and rooms may be located on a single parcel. In FY15-16, CSA-74 assessments generated the following revenue:

Type of Parcel	Number of Units	Revenue
<b>CSA Units</b>	117,143	\$1,593,863
<b>Trailer Spaces</b>	3,807	\$ 45,396
<b>Hotel Rooms</b>	11,503	\$ <u>27,607</u>
<b>Total</b>		<b>\$ 1,666,866</b>

During FY15-16, the EMS Agency evaluated and revised the CSA-74 Fund expenditure reporting and review processes. Under the new reporting process, each department or district that receives CSA-74 funds submits invoices/receipts, course rosters, or other documents that verify

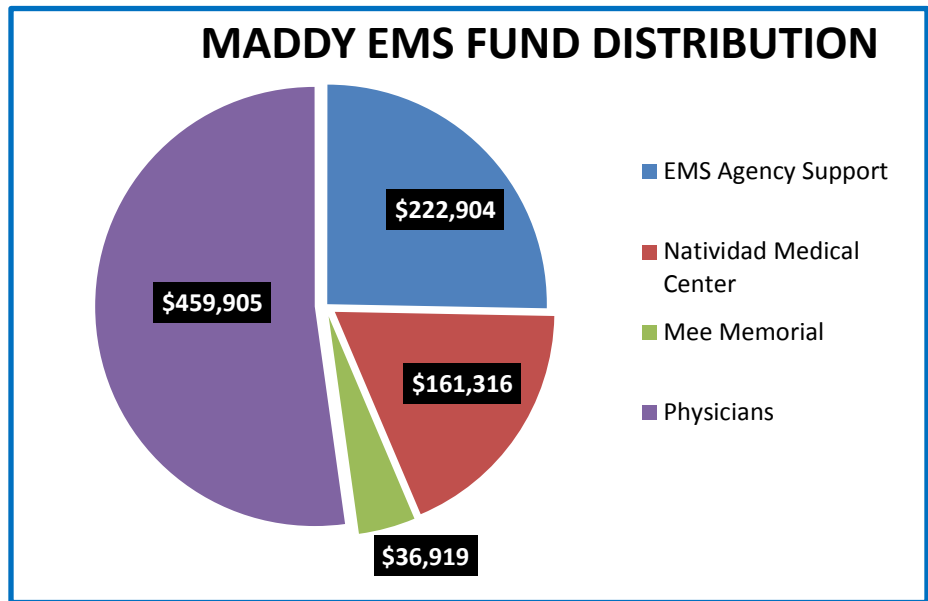
that the CSA-74 funds disbursed were expensed on allowable products or services, during the allowable reporting period. These changes were implemented in response to the EMS Agency’s continuing effort to improve transparency, to ensure compliance with CSA-74 disbursement requirements and other applicable laws, and to continuously improve the quality of the EMS Agency’s practices and processes. On May 18, 2016, the Emergency Medical Care Committee voted to support these changes to the CSA-74 expenditure review and report submittal process.

The EMS Agency’s goals relative to CSA-74 funding for FY16-17 include determining whether to recommend to the Board of Supervisors, an increase in the amount of CSA-74 funding reserved should the 911 Exclusive Operation Area (EOA) ambulance provider encounter financial difficulties and to continue to improve the CSA-74 payment, review and audit processes.

Maddy Fund

In 1989, the Monterey County Board of Supervisors established the County Emergency Medical Services Fund pursuant to the Maddy Fund statute (California Health and Safety Code, Section 1797.98). The Maddy Fund statute authorizes the judiciary to impose an additional levy of \$4 per every \$10 on moving traffic violations to support emergency medical services.

Pursuant to state law, up to 10% of the proceeds are available to fund the program's administration. The remaining 90% compensates health care providers for emergency medical services provided to individuals who do not have healthcare insurance and cannot afford to pay for emergency medical care, and for discretionary



EMS purposes. Fifty-eight percent of the non-administrative funding reimburses physicians for a portion of unreimbursed indigent services. Twenty five percent of the non-administrative funding reimburses hospitals that provide a disproportionate share of unreimbursed emergency medical care. Seventeen percent of non-administrative funding supports the EMS Agency’s



activities. Distributions from the Maddy Fund to hospitals and the Health Department are made during the fiscal year. Distributions to physicians are made quarterly.

During FY15-16, the EMS Agency evaluated the Maddy Fund payment processes and identified process improvement opportunities, leading EMS Agency staff to collaborate with Health Department IT staff to restructure the Maddy Fun database to improve the claim review and approval processes. The EMS Agency also worked with hospitals and physician groups to begin to transition to a secure, electronic submittal of claims, which will eliminate or minimize the need for manual data entry, thus, increasing the accuracy of claims data.

The EMS Agency goals relative to the Maddy Fund for FY16-17 are to fully implement the new database to increase efficiency and successfully transition providers to a secure, electronic submittal of claims to increase claim data accuracy.

### Policy and Procedure and Protocol Revisions

During FY15-16, the EMS Agency, working closely with the EMS advisory committees and EMS System stakeholders, began to comprehensively revise the EMS System Policy and Procedure Manual and the Clinical Treatment Protocol Manual. Revisions included numbering sections, making policies easier to locate, and creating or revising 22 policies and procedures or treatment protocols. These manuals are critically important, because they define the standards for the operations of the Monterey County EMS System, and prescribe the clinical treatments provided to all patients with the EMS System.

During FY16-17 and FY17-18, the EMS Agency and EMS stakeholders will review, and revise if necessary, every remaining policy and procedure and treatment protocol to assure that the Monterey County EMS System is providing state of the art prehospital care.

### Website and Social Media

Goal Seven in the EMS Agency's Strategic Plan is to communicate the EMS Agency's programs, activities, and services to EMS stakeholders. Throughout FY15-16, the EMS Agency began to improve its Website and social media presence, which are the essential means of communicating with most EMS system stakeholders, including field EMTs and paramedics. Effort was focused in four areas, Website redesign, initiation of a Facebook account, more frequent use of a Twitter account, and revising the Monterey County EMS App (smartphone application). These social media communication channels are increasingly important to reach the younger and more connected EMS professionals and public within Monterey County.

### Website Redesign

In September 2016, working closely with County and Health Information Technology, the EMS Agency launched a new web page, with a fixed address: [www.MoCoEMS.org](http://www.MoCoEMS.org). All of the EMS Agency's web-based contact will be accessible from this single page. Previously, the EMS Agency's web-based contact was difficult to find, because it was located at numerous web locations. During this fiscal year, the EMS Agency will work to add content to the current website, including EMS System performance reports. In the latter half of this fiscal year, the EMS Agency will launch a new, modern, content-rich website, which will provide the EMS System and people of Monterey County with more content and information about their EMS System than ever before.

### Facebook Account

In March 2016, the EMS Agency created a Facebook page, which is used to communicate with the EMS system, especially emergency medical technicians and paramedics. This page features Continuing Education opportunities, pictures of EMS providers and the EMS System, and other related information. The address is [www.facebook.com/mocoems](http://www.facebook.com/mocoems). The page can also be found by searching for "Monterey County EMS" within Facebook. Since starting the page in March, the Monterey County EMS Facebook page has more than 325 likes.

### Twitter Account

While the EMS Agency has used a Twitter account for two years, during the past year, the Health Department's Public Information Officer increased the frequency of tweets to the community. During the next year, use of the Twitter account will be increasingly integrated with the EMS Agency's Facebook and Web presence.

### The Monterey County EMS App (Smartphone Application)

The Monterey County EMS System created a free App (smartphone and tablet application) that allows users to access the EMS System Policy and Procedure Manual and EMS System Treatment Protocol Manual from their smartphone or tablet. This App, which has been downloaded by hundreds of users, has been well received by EMS personnel. In 2016, the EMS App was comprehensively revised, based on changes to the policy and protocol manuals. The App was also redesigned for easier navigation.

# The Monterey County EMS System: 2015-2016

## The 911 Emergency Medical Services System

The Monterey County EMS System has 16 non-transporting first response agencies, which are an important component of the EMS response. These agencies are primarily fire districts, but also include municipal fire departments, volunteer fire brigades, law enforcement agencies, and the County Parks Department. First responders provide medical care at the Emergency Medical Responder (EMR), Emergency Medical Technician (EMT), or Paramedic (EMT-P) level.

The Monterey County EMS System has four ground ambulance transport providers, specifically American Medical Response (AMR) Monterey, the Carmel Fire Department, the Monterey County Regional Fire Protection District, and the Fort Hunter Liggett Fire Department. The EMS System is also served by two air ambulance providers, specifically CALSTAR, and Mercy Air. Typically, air ambulances, (helicopters) are used to transport critically injured patients from the distant locations of the county or for transports to other counties.

For the July 1, 2015 through June 30, 2016 fiscal year, the self-reported medical call volume of each of the ground ambulance providers is detailed.

<b>Provider</b>	<b>Medical Calls</b>	<b>Transports</b>
<b>AMR</b>	33,939	23,490
<b>Monterey County Regional Fire District</b>	1938	809
<b>Carmel Fire Department</b>	1037	716
<b>Fort Hunter Liggett Fire Department</b>	213	119
<b>Total</b>	37,127	25,134

## Exclusive Operating Area Ambulance Provider: American Medical Response (AMR) Monterey

American Medical Response (AMR-Monterey) is Monterey County's contracted ambulance provider for the Monterey County Exclusive Operating Area (EOA). Through the agreement between AMR and the County of Monterey, AMR provides 911 paramedic ambulance services to all of Monterey County, except for the areas served by the Monterey County Regional Fire Protection District, the Carmel Fire Department, and within Fort Hunter Liggett. AMR is the largest transport provider in the Monterey County EMS System. The agreement sets standard for operational, clinical, and financial performance, and includes provisions for monitoring and enforcement.

In 2016, the EMS Agency initiated an assessment process for AMR and other EMS provider agencies in the county. The assessment process grew from discussions at the Contract Compliance Workgroup (CCWG) meetings; the CCWG is a body designed to review AMR's compliance with the terms of their agreement. From those discussions, a more holistic approach to assessing an individual provider agency was developed. The assessment includes an examination of fleet and equipment, quality improvement efforts, employees (including training and well-being), community education efforts, disaster preparedness, customer service, financial performance, response time compliance, and unusual occurrence reporting.

The first such assessment was conducted in the spring of 2016 at AMR. Overall, AMR did well. They were able to provide extensive documentation on many of the components of the assessment and they appear to have a number of strong programs in place to monitor their performance - in many areas. However, issues were identified with response time compliance, which will be discussed later in more detail.

It is the goal of the EMS Agency to perform this same kind of assessment for other transport and non-transport providers in the county. The assessment tool can be modified to reflect differences between the various kinds and levels of providers.

### Financial Performance

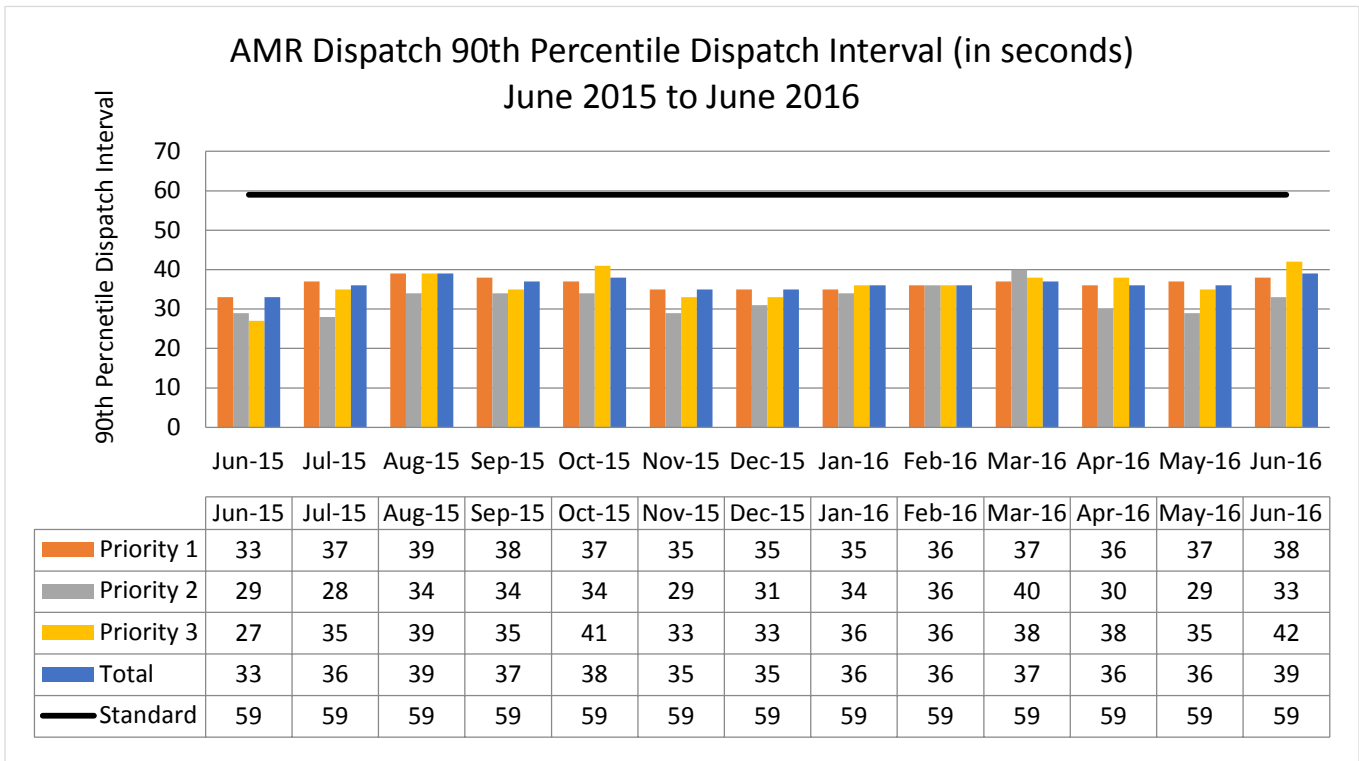
The agreement between the County of Monterey and AMR provides that if AMR's local financial reports show pre-tax profits in excess of 8%, the parties shall meet and confer regarding rates and rate increases. AMR's financial reports for calendar year 2015 show a pre-tax profit of approximately 10.55%. Consistent with the agreement, the EMS Agency and AMR discussed the profits. Based on the information provided by AMR, 2015 was the first year under the current agreement in which AMR's profits exceeded 8%. AMR's unusual profit during 2015 may at least partially be explained by a greater-than-10% increase in call volume over 2014. The EMS Agency believes that there should be no change in rates, because assuring the financial solvency of the EMS system is a primary concern of the EMS Agency. AMR's financial performance was

discussed with the Contract Compliance Working Group, which concurred with the recommendation of the EMS Agency.

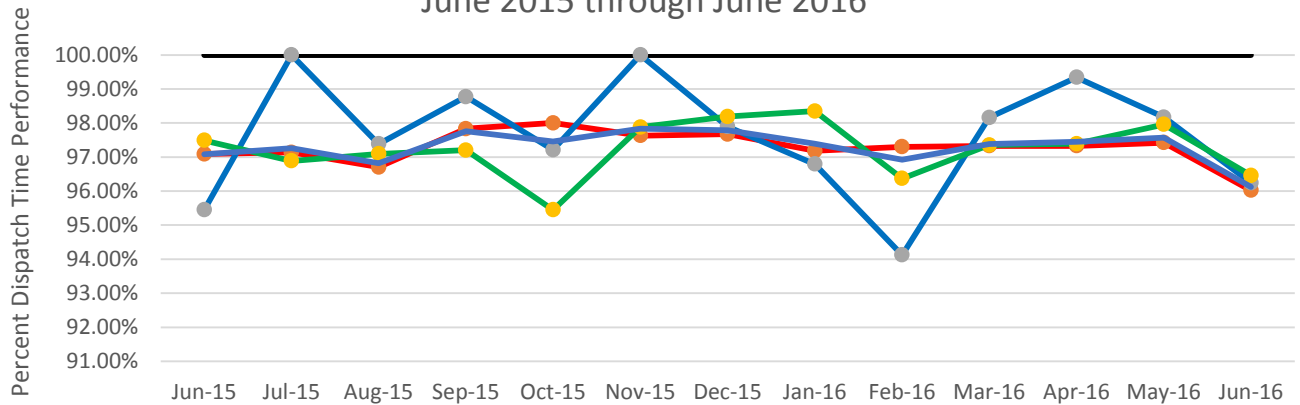
Dispatch Time Compliance

The AMR agreement stipulates dispatch time interval performance standards, specifically that 100% of all 911 emergency calls are dispatched within 59 seconds of the dispatcher receiving call information.

The following graphs identify AMR’s contractual dispatch time performance for the FY15-16. Although these charts reflect a 13-month period, they contains the complete dispatch time interval performance information for the July 1, 2015 through June 30, 2016 period, based on the criteria in the Exclusive Operating Area agreement. These charts indicate that AMR is timely receiving and dispatching calls, consistent with regional and national standards.



### AMR Dispatch Time Interval Performance June 2015 through June 2016



	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16
Standard	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Priority 1	97.09%	97.13%	96.70%	97.83%	98.00%	97.63%	97.67%	97.18%	97.30%	97.33%	97.33%	97.42%	96.02%
Priority 2	95.45%	100.00%	97.39%	98.77%	97.21%	100.00%	97.89%	96.79%	94.12%	98.16%	99.34%	98.17%	96.24%
Priority 3	97.49%	96.89%	97.09%	97.20%	95.45%	97.88%	98.19%	98.35%	96.37%	97.35%	97.39%	97.96%	96.46%
Total	97.08%	97.26%	96.82%	97.76%	97.46%	97.83%	97.79%	97.39%	96.92%	97.38%	97.45%	97.57%	96.12%

### Response Time Compliance

The AMR agreement also stipulates response time performance standards based on the perceived acuity of the call and the population density of the area in which the call is located. For 911 calls, there are three priorities:

Priority 1 calls are life threatening emergencies, such as cardiac arrests, choking, and major hemorrhage. Priority 1 calls receive a Red Light and Siren response from first responders and ambulance.

Priority 2 calls are non-life threatening emergencies that require an urgent red light and siren response.

Priority 3 calls do not require a red light and siren response, but require an immediate response due to an urgent, but non-life threatening, medical condition.

The response times for each of these types of calls are indicated below. The map in Appendix A identifies the location of each color zone, based on population density, with green being the densest populations, and red being remote and wilderness areas. According to the agreement, certain calls, such as calls that occur during disasters, calls during extraordinary and unpredictable weather, and calls affected by road closures can be exempted from calculation.

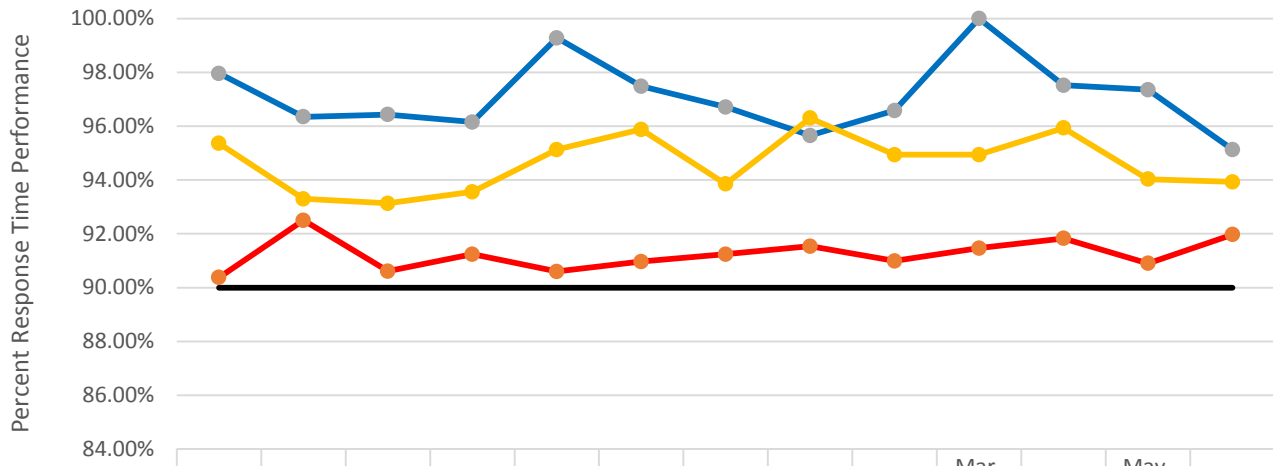
Time are calculated in minutes	Green	Yellow	Orange	Red
Priority 1	8	12	16	ASAP
Priority 2	10	16	20	ASAP
Priority 3	12	230	24	ASAP

### AMR Response Time Performance

The following four graphs identify AMR’s contractual response time performance for FY15-16. Although these graphs reflect 13-month periods, they contain the response time interval performance information for the July 1, 2015 through June 30, 2016 period, based on the criteria in the Exclusive Operating Area agreement. These graphs indicate that AMR failed to meet the contractual response time performance standards in at least one zone in at least one priority, during nine of the twelve months in FY15-16.

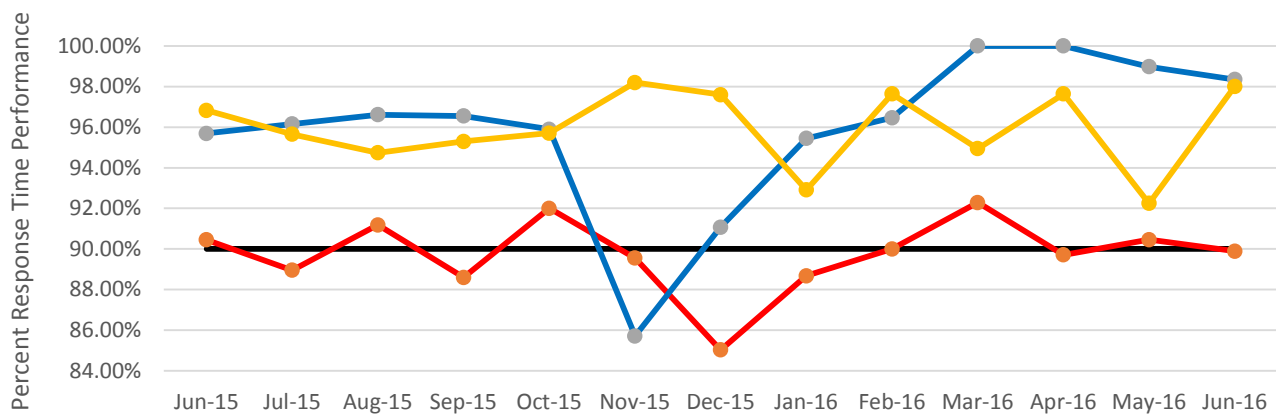
The EMS Agency considers AMR’s failure to meet the contractual response time standards for 9 of 12 months in FY15-16 a serious deficit in performance, even though it does not currently meet the requirements of a material breach, as specified in the agreement. Therefore, the EMS Agency requested, and AMR provided, a written plan of correction that identified the specific actions AMR Monterey will implement to meet contractual response time performance standards. The EMS Agency has also clearly communicated to AMR, the expectation that AMR will improve their performance in the yellow and orange zones, so response time performance consistently meets contractual standards for all priorities in all zones. The EMS Agency has also levied fines against AMR, as provided in the agreement, which AMR paid within the allotted time. The EMS Agency also discusses AMR’s response time performance with AMR, in one-on-one meetings, as a standing agenda item at the bi-monthly Contract Compliance Working Group meetings, and at the Emergency Medical Care Committee. The EMS Agency will continue to implement increasing sanctions to compel AMR to take whatever actions necessary to meet contractual response time performance standards.

### AMR Response Time Interval Performance: Green Zone June 2015 to June 2016



	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16
Standard	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%
Priority 1	90.38%	92.50%	90.61%	91.24%	90.60%	90.97%	91.24%	91.54%	90.99%	91.47%	91.83%	90.90%	91.97%
Priority 2	97.96%	96.35%	96.43%	96.15%	99.28%	97.48%	96.71%	95.65%	96.58%	100.00%	97.52%	97.35%	95.13%
Priority 3	95.36%	93.30%	93.13%	93.56%	95.13%	95.88%	93.85%	96.30%	94.94%	94.94%	95.93%	94.03%	93.93%

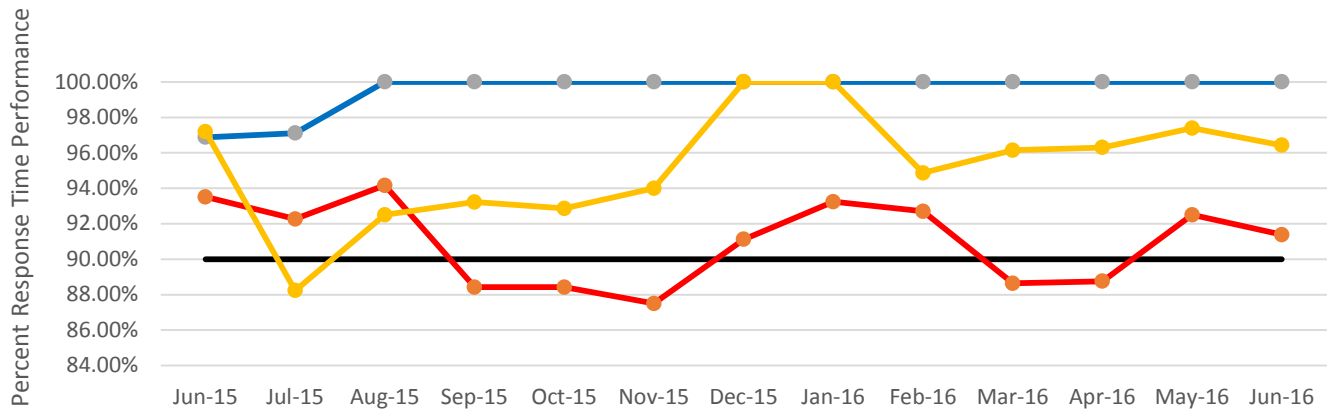
### AMR Response Time Interval Performance: Yellow Zone June 2015 to June 2016



	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16
Standard	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%
Priority 1	90.45%	88.95%	91.18%	88.60%	92.00%	89.55%	85.03%	88.68%	90.00%	92.29%	89.71%	90.46%	89.89%
Priority 2	95.69%	96.15%	96.61%	96.55%	95.90%	85.71%	91.07%	95.45%	96.46%	100.00%	100.00%	98.98%	98.35%
Priority 3	96.83%	95.65%	94.74%	95.30%	95.71%	98.20%	97.60%	92.91%	97.64%	94.94%	97.64%	92.25%	98.01%

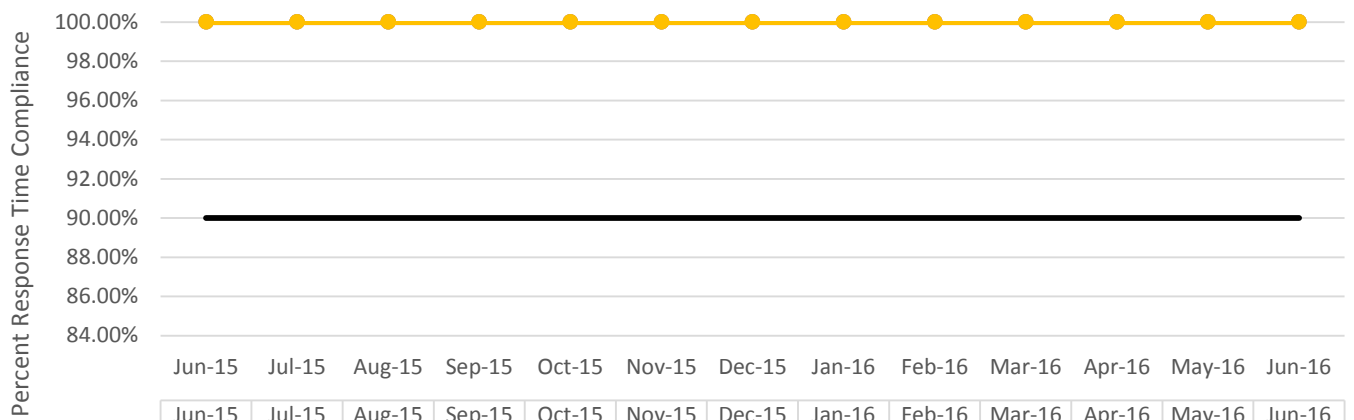


### AMR Response Time Interval Performance: Orange Zone June 2015 to June 2016



	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16
<b>Standard</b>	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%
<b>Priority 1</b>	93.51%	92.27%	94.17%	88.42%	88.42%	87.50%	91.12%	93.24%	92.70%	88.64%	88.76%	92.50%	91.38%
<b>Priority 2</b>	96.88%	97.12%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
<b>Priority 3</b>	97.20%	88.24%	92.50%	93.22%	92.86%	94.00%	100.00%	100.00%	94.87%	96.15%	96.30%	97.39%	96.43%

### AMR Response Time Interval Performance: Red Zone June 2015 to June 2016



	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16
<b>Standard</b>	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%
<b>Priority 1</b>	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
<b>Priority 2</b>	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
<b>Priority 3</b>	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

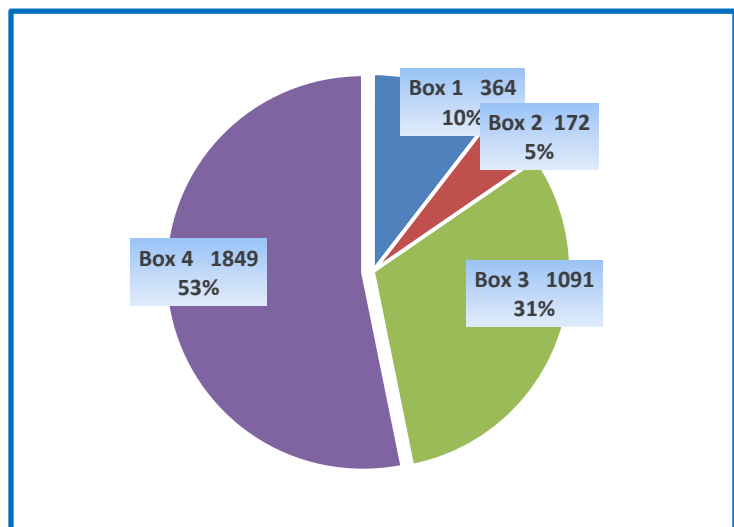
## The Monterey County Trauma System/Natividad Trauma Center

Natividad Trauma Center was designed as Monterey County’s Level II Trauma Center in 2014 and began operations on January 5, 2015. On July 25 and 26, 2016, the American College of Surgeon’s Committee on Trauma (ACS COT) sent representatives to Natividad Medical Center to conduct a consultative site visit. The consultative visit is a “practice” survey visit. The ACS COT representatives were impressed by the practices and performance of the Natividad Trauma Center. As is expected in consultative site visits, the ACS COT surveyors found areas for improvement, which must be corrected before the ACS COT trauma designation survey. The ACS COT surveyors also recommended some minor trauma system changes, which the EMS Agency will implement within the next year. The EMS Agency looks forward to the ACS COT designation site visit of the Natividad Trauma Center, which should occur within 18 months of the consultative site visit.

The Monterey County EMS system uses a well-accepted set of field triage criteria to determine the severity of injury of a trauma patient. Field triage criteria are based on the Centers for Disease Control’s Field Triage Criteria, which uses four “boxes” to categorize the severity of the trauma patient’s injury. Box 1 patients are the presumptively the most seriously injured patients, based on vital signs and level of consciousness. Box 1 trauma patients are transported to a trauma center. Box 2 trauma patients have significant injuries as assessed by field personnel, and Box 3 trauma patients have significant mechanisms of injury. Box 2 and Box 3 patients also go to the trauma center. Box 4 trauma patients are the least serious of the “box” trauma patients. Box 4 patients are often transported to non-trauma center facilities in the Monterey County EMS system, as those facilities can effectively care for those patients’ injuries. The following graphic identifies the EMS System’s trauma patients, during calendar year 2015, based on their “box” categories:

During 2015, the Monterey County EMS System treated nearly 3,500 trauma patients. That number includes patients throughout the spectrum of trauma care, from patients with minor injuries to patients with life-threatening and ultimately fatal injuries.

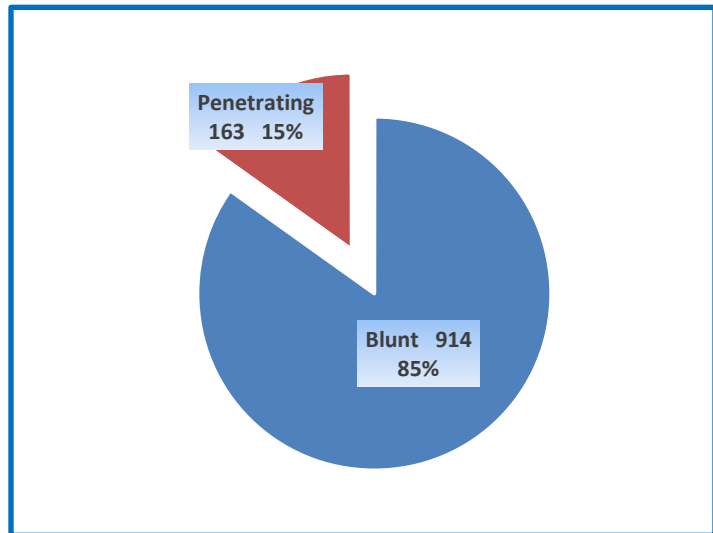
Trauma patients are also classified as “blunt” or “penetrating” trauma. Blunt trauma refers to injuries sustained in motor vehicle collisions, motorcycle or bicycle accidents, pedestrians struck, falls, various kinds of assaults, and other related mechanisms of injury. Penetrating trauma results



from shootings and stabbings. The following graphic identifies the number and percentage of blunt and penetrating trauma during calendar year 2015.

As the trauma system develops and matures, the EMS Agency will continue to revise existing trauma policies and create new trauma policies that reflect the latest science, as determined by the EMS Agency Medical Director in collaboration with other system stakeholders.

As a relatively new trauma system, Monterey County has progressed rapidly to develop a coordinated and organized approach to the treatment of trauma patients. Ongoing goals and objectives of the trauma system are summarized in the following general areas:



- Continued monitoring of the care provided in the trauma center by way of data analysis, the reporting of relevant data as appropriate, and participation in local and regional trauma audit committees.
- Further development of the trauma data system to ensure the availability of accurate data for use by local system stakeholders and reporting to other entities as required by statute and regulation.
- Continued analysis of the care being provided to trauma patients at the field level – to include patient assessment, treatment, and destination decisions.
- Enhancement of the analysis of the use of air ambulances in the county to ensure appropriate utilization.
- Revision and development of policies and procedures based on new information and identified need.
- Integration of an EMS Agency staff epidemiologist into trauma related data gathering and analysis efforts.
- Evaluation of the use of the field triage decision algorithm to ensure appropriateness and ensure field compliance.
- Continued integration of non-trauma center hospitals (in Monterey and adjacent counties) in trauma system planning and quality improvement efforts.
- Continued analysis of trauma system funding streams, cost, and reimbursement to ensure long term financial viability of the system.

## Monterey County EMS Data System

In early 2016, the EMS Agency began a process for implementing a single electronic patient care reporting (ePCR) system county-wide. Currently, the various EMS providers in the county use a number of different ePCR systems which don't integrate in any way. Some providers still use handwritten PCRs. This makes the collection and analysis of system-wide data very difficult. In some cases, it is impossible. A new state law (AB 1129) passed last fall now requires local emergency medical care providers to submit electronic data following National EMS Information System (NEMSIS) standards.

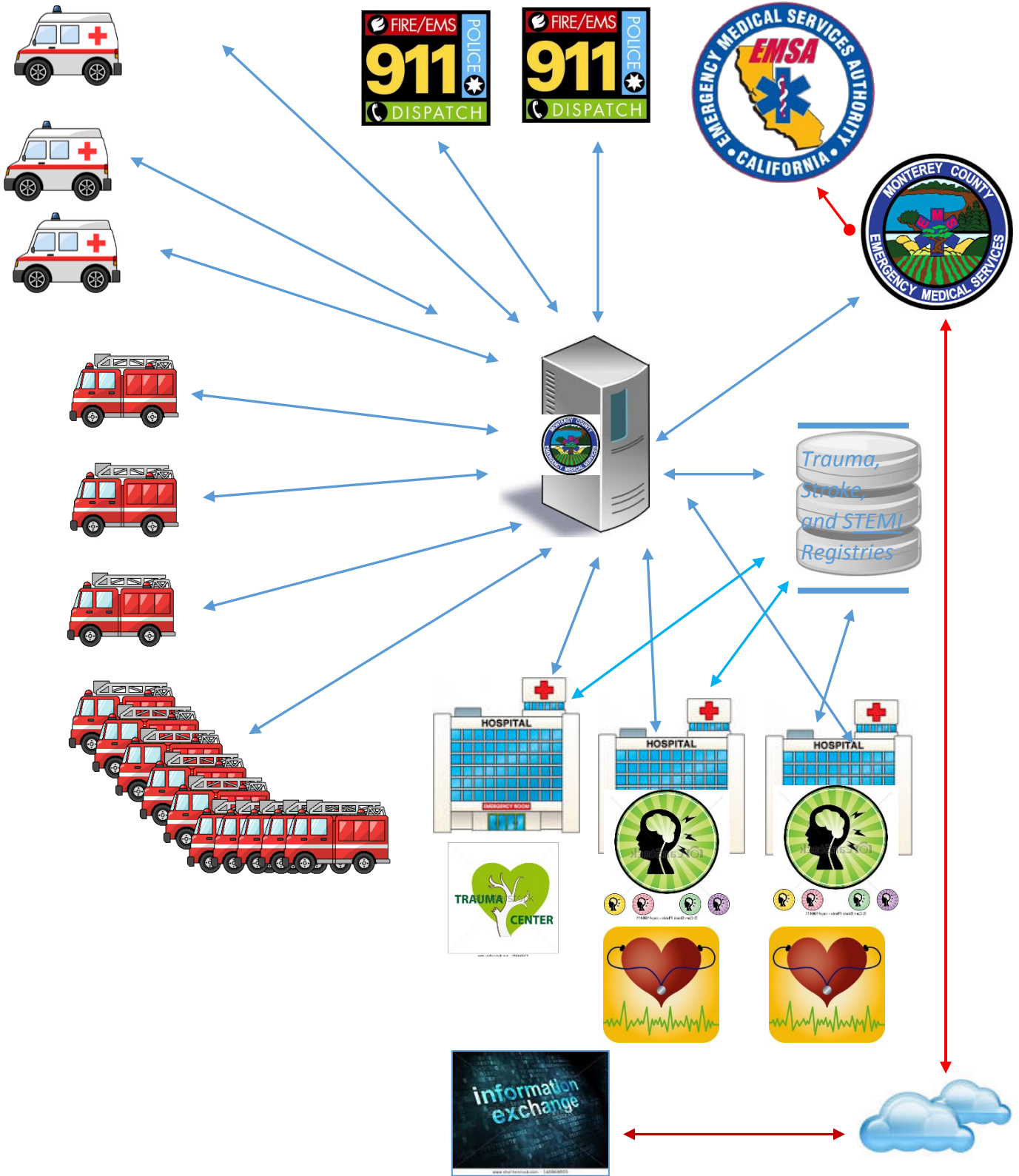
Based on the identified need for a better data system, along with the requirement of the new state law, the EMS Agency released an RFP to solicit a vendor for a single EMS System-wide ePCR system. CSA 74 funds will be used to purchase the system for initial implementation. While, EMS providers cannot be compelled to use the County data system, they can be compelled to provide data in format that integrates seamlessly with the chosen EMS data system, which can be a substantial cost and risk to those providers who elect to not participate in the County-based ePCR system. It is hoped that all of the county's providers will elect to use the chosen system.

A workgroup consisting of EMS system stakeholders met several times to draft a project charter and the relevant parts of the RFP. A subcommittee of that group will serve as the review panel. The goals of the ePCR project are to:

- Identify a unified solution for EMS providers that will serve as a single source of reporting on all data related to EMS.
- Enable accurate analysis of clinical and operational data across the EMS System.
- Better position the EMS agency to receive hospital (outcome) data.
- Inform EMS System policy and protocol development.
- Prepare EMS agencies to evolve in today's healthcare environment.
- Enable EMS providers to be key participants as contributors of services/support that is quantifiable.

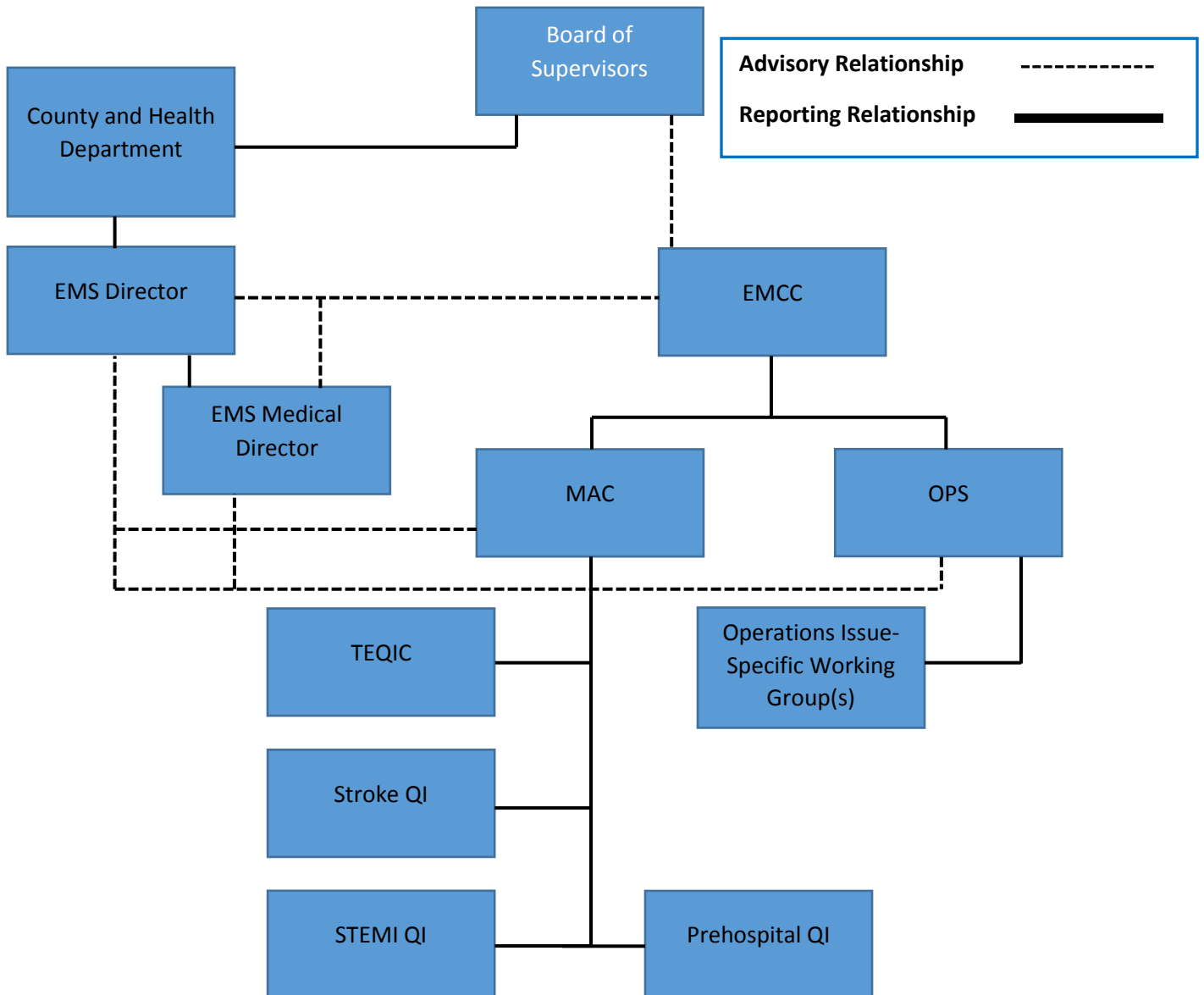
The implementation of a single integrated ePCR system county-wide is important for the Monterey County EMS System. Reliable data makes for better decision-making and more closely integrates EMS into the larger healthcare system. Most importantly, a single integrated ePCR it will help the EMS System provide better patient care, which is the primary aim of all quality improvement efforts.

# Monterey County EMS Agency Preliminary Data System Topography



## EMS Advisory Committees

EMS advisory committees, composed of EMS system constituents, discuss EMS system issues and recommend actions to the EMS Director and EMS Medical Director concerning matters of policy, procedure, and protocol. Throughout FY15-16, the EMS Agency worked closely with the Emergency Medical Care Committee to materially improve the EMS Advisory Committees, by creating a single policy to identify the purpose, membership, and terms for all of the EMS advisory committees. This resulted in a more coherent policy structure and processes that better use EMS stakeholder and EMS Agency time and resources. The change in committee function occurred on July 1, 2016. The new committee structure is graphically displayed.



### Emergency Medical Care Committee (EMCC)

The membership, purpose, structure, and rules of the Emergency Medical Care Committee (EMCC) have been formally established by the Monterey County Board of Supervisors through Board Resolution Number 10-069. The EMCC advises the Board of Supervisors and the EMS Director on EMS System issues, including CSA 74 funding, the EMS Agency, EMS training; ensures that all EMS constituents are actively engaged in the decisions regarding the EMS system resources, and provides input on the development and implementation of EMS System policies, protocols, and procedures. During the past year, the EMCC endorsed the Salinas Fire Department Unknown Injury Accident Study, endorsed revising the EMS advisory committee structure; reviewed, revised and endorsed the EMS Agency Strategic Plan, reviewed the proposal for the EMS Data System, recommended the elimination of the EMS Summit committee, which duplicated the topics presented in other committees.

### Medical Advisory Sub-Committee (MAC)

The Medical Advisory Subcommittee provides input to the EMS Director, EMS Medical Director and the EMCC on medical control and other medical issues. During FY15-16, the MAC, which is composed of EMS system representatives who meet every other month, assisted with the creation, revision, approval, and implementation of numerous new EMS System Policies and Procedures and clinical protocols. Some of these changes included revisions to the Basic Life Support (BLS) Scope of Practice policy which increased the scope of practice of EMTs and Emergency Medical Responders. Based on the recommendation of local cardiologists, the MAC also endorsed changes in treatment protocols to increase the dosage of aspirin given to those patients with suspected cardiac-related chest pain.

### EMS Operations Sub-Committee

The EMS Operations Sub-Committee provides input to the EMS Director, EMS Medical Director, and the EMCC on operational issues involving pre-hospital and emergency medical services. This year, the EMS Operations Subcommittee reviewed and endorsed several new non-clinical policies including the EMS Duty Officer policy. This subcommittee also reviewed and endorsed the EMS Agency process for approving Emergency Medical Responder training programs.

### Prehospital Quality Improvement Committee

The Prehospital Quality Improvement Committee reviews cases and assesses the operations and quality of clinical care provided in the prehospital setting, emphasizing the period between the reception of the call at the primary PSAP, through the first responder and ambulance provider to the emergency department, to Medical Advisory Subcommittee and/or the Operations

Subcommittee. This year the Prehospital Quality Improvement Committee discussed the measurement of clinical quality metrics and the forthcoming provider quality improvement plans and programs.

#### Trauma Evaluation Quality Improvement Committee (TEQIC)

The Trauma System Quality Improvement Committee (TEQIC) reviews trauma system care and advises on trauma system policy, organization, training, and equipment. Its goals consist of evaluating and administering the trauma system, including resolving system vulnerabilities, developing policy and/or approaches to related issues such as major trauma and burn-related prehospital care, conducting injury surveillance, optimizing trauma transfers and patient repatriation, and improving long-term outcomes.

Trauma System Quality Improvement Committee meetings are held bi-monthly and involve representatives from the trauma center, the other hospitals in the county, hospitals from other counties that send trauma patients to Monterey County, EMS Agency staff, and air and ground field provider representatives. This committee evaluates trauma care from a system-wide perspective. Because TEQIC evaluates the trauma care of the individual patient, its meetings are confidential and not open to the public. Agenda items include updates on policy development or protocols, continuing education opportunities, trauma data review, review of field triage and patient inclusion criteria, and other indicators.

TEQIC meetings have been controversial. Issues among hospitals and personnel resulted in frustration among representatives. These issues were not conducive to quality improvement based on the tenets of “Just Culture” and the desire to collaboratively improve the trauma system. To resolve those issues, the EMS Director restructured the committee, presented to the committee on the importance of confidentiality, the appropriate structure of the committee, the expected comportment of committee members, expectations for the committee, and desired outcomes. Since that presentation and “re-set”, the committee has focused on issues such as improving the trauma data system, goals of the trauma system and the resumption of case reviews - interesting and challenging cases throughout the continuum of care. The changes in the committee reflect the “maturing” of the trauma system over the past year.

#### STEMI (S-T Elevated Myocardial Infarction) QI Committee

S-T Elevated Myocardial Infarction is a medical term that describes those patients who have the most life-threatening type of heart attack. The STEMI Quality Improvement Committee reviews STEMI system care and advises on STEMI system policy, organization, training, and equipment to the MAC.

The Monterey County STEMI System, which began in 2005, continues to improve patient access to necessary life-saving cardiac treatment by accurately identifying these patients and transporting them to the appropriate receiving facility – either Community Hospital of the



Monterey Peninsula (CHOMP) or Salinas Valley Memorial Hospital (SVMH). Ambulance paramedics can electronically transmit the patient's EKG to the STEMI Center's emergency department and to the interventional cardiologist's cell phone. This EKG, along with the paramedic's description of the patient's condition, speeds activation of the cardiac catheterization lab team, resulting in a shorter time to definitive treatment upon arrival at the hospital.

The STEMI QI Committee meets quarterly to discuss issues with the system, data from the two STEMI Centers, and case reviews. Each hospital's STEMI coordinator reports on performance metrics such as the number of patients seen, transfers from other receiving hospitals, and "door to balloon time" – the amount of time it takes to get the patient to a catheterization lab, following arrival at the hospital. The "door to balloon" time and "occurrence to balloon" time are the gold standard measurements of STEMI care, as the shorter the time from door or occurrence to the balloon, the less cardiac muscle death occurs, thus, the better their prognosis.

#### Stroke QI Committee

The Stroke Quality Improvement Committee reviews stroke system care and advises on stroke system policy, organization, training, and equipment to the Medical Advisory Committee. The early recognition of stroke by EMS personnel, rapid transport to a Stroke Center hospital, and specialized care in those hospitals is vital for stroke patients. Much like STEMI, optimal treatment for stroke is time dependent. Patients with a stroke who access emergency care through the 911 system have the best chance of obtaining appropriate treatment promptly. Monterey County has had a stroke care system for eleven years; it began around the same time as the STEMI system in 2005. Within Monterey County, CHOMP and Salinas Valley are designated Stroke Centers.

The Stroke QI Committee meets quarterly to discuss the same kinds of issues as are discussed at the STEMI QI meeting; only with an emphasis on stroke patients. There is also a Stroke Coordinator at each facility. Topics discussed at this committee include performance data and case reviews, and transfers between non-specialty centers and specialty centers.

## Improving Patient Care and Quality Improvement

### EMS Quality Improvement

State regulation requires that each EMS System, and most organizations within the EMS System, including first responders, ambulance and paramedic providers, base hospitals, and EMS dispatch centers, have a distinct EMS Quality Improvement (QI) Plan. This plan is a critical component of the EMS System, because it defines the structures and processes the EMS System and its component organizations use to continuously monitor and improve the quality of care within the EMS System. The QI Plan also describes the QI program that the EMS System and its component organizations will use to continuously monitor and improve quality.

In FY15-16, the EMS Agency significantly revised its EMS Quality Improvement Plan to meet the standards of state regulation. Consistent with state regulation, the EMS Agency submitted its QI Plan to the California EMS Authority for review and approval, which they granted.

In FY16-17, the EMS Agency will work with first responders, ambulance providers, base hospitals and EMS dispatch centers to assure that each organization has a QI Plan, that the QI Plan complies with state regulation, and that it is consistent with the EMS Agency QI Plan. The EMS Agency will also work with these organizations to oversee the implementation of each organization's QI Program, which includes defining the care to be provided, measuring the care provided, and improving the care provided.

## EMS Personnel Certification, Accreditation, Discipline and Licensure

### Emergency Medical Technician (EMT) Certification/Recertification

In California, Emergency Medical Technicians (EMTs) are certified by a local, county-based, EMS Agency. That certification allows them to practice as an EMT statewide. This year, the EMS Agency processed 192 applications for EMT recertification and 93 applications for initial certification.

In FY16-17, the EMS Agency will modify our certification and recertification processes to include reporting to the National Practitioner Data Base. This reporting is required by federal law and helps prevent medical professionals, who have been disciplined or lost their clinical license in one area or state, from fraudulently procuring a new license in another area or state.

### Paramedic Accreditation

In California, paramedics are licensed by the California EMS Authority, but are accredited through the local EMS Agency in the county in which they work. This local accreditation process assures they are familiar with the local EMS System and the clinical treatments used in that system. Paramedics seeking first time local accreditation must

demonstrate a firm knowledge of Monterey County EMS policies and protocols and the use of them in providing appropriate patient care, as verified through written testing and clinical review under the supervision a preceptor. This year, the Monterey County EMS Agency received and processed 19 applications for new paramedic accreditations and 61 applications for continued paramedic accreditation.

### Prehospital Discipline

To protect the public health and safety, EMS Agencies are responsible to discipline EMTs, and in some cases, paramedics. EMS Agencies typically take disciplinary action against prehospital personnel for conviction of certain crimes, such as child molesting, rape, or violent felonies, or for serious or recurring clinical incompetence or negligent acts. To facilitate this oversight process, EMS Agencies receive Department of Justice (DOJ) and Federal Bureau of Investigation (FBI) fingerprint-based background checks on EMTs at the time of initial certification and any time an EMT or local paramedic is arrested or convicted of a crime.

The EMS Agency receives about 10 reports from the DOJ or FBI annually, indicating the applicant has an applicable arrest or conviction in their background. The EMS Agency also receives two or three subsequent arrest notifications each year for currently certified EMTs. The EMS Agency reviews the report, conducts an investigation, and makes a recommendation to the EMS Medical Director for discipline. This year, the EMS Agency revoked two EMT certificates and issued four probationary EMT certificates.

### EMS Training Programs

During FY15-16, the EMS Agency reviewed one of Monterey County's EMT training programs. This review resulted in the program being approved for another four years. The EMS Agency also reviewed and approved four Emergency Medical Responder (EMR) training programs. EMR is the standardized training program replacing First Responder training programs, which were discontinued in state law. EMR training programs must meet standards set in state regulation.

## Other EMS System Activities

### EMS Week 2016



The EMS Agency and EMS Stakeholders coordinated another successful EMS Week in May. EMS Week is intended to show the community the wide variety of organizations and personnel involved in the EMS system. Hospitals, fire departments, air ambulance providers, ambulance providers, and the Coast Guard hosted static displays of EMS system vehicles and equipment and

ran demonstrations of EMS System activities, to the excitement of 300 elementary age children and more than 100 other people. CALFire’s heli-tac crew provided a rescue demonstration by having a rescuer lowered from the hovering helicopter and hoisting a “victim” up to the helicopter from the ground. North County Fire District and AMR simulated the extrication of an accident victim using the Jaws of Life from a damaged car.

### Active Shooter Exercise

The EMS Agency participated in the development and review of a full scale Active Shooter Exercise in May. The exercise was held at the Monterey Peninsula College Fire and EMS training center on the Fort Ord site. The exercise evaluated the use of Active Shooter Guidelines developed jointly by the Fire and Law Chiefs and presented to the EMS Operations Committee. Multiple law enforcement and fire agencies and AMR participated.



## EMS Recognition Program

The EMS Recognition Program continued to identify EMS personnel who consistently excel at providing high quality patient care. This peer-driven program engages field and hospital providers and seeks to encourage excellence in the provision of emergency medical services. Those selected by their peers to be recognized through this program receive a recognition certificate, a challenge coin with the person's name and title engraved on it, and a lapel pin. In this photograph,



Natividad Medical Center Trauma Program Manager Chelsea Mettler receives an EMS Recognition Award from Dr. James Stubblefield, the EMS Agency Medical Director.

## The Monterey County EMS System: Looking Forward

The Monterey County EMS System is entering a period of unprecedented change and advancement, in almost every clinical and operational area. In the short term, the most significant changes will be driven by the California EMS Authority's requirement to conduct a bid, select a provider, and have the provider state service as the Monterey County Exclusive Operating Area for 911 emergency paramedic ambulance service on February 1, 2020. Both in the short and longer term, the Patient Protection and Affordable Care Act (PPACA or ACA) and health reform generally will drive significant changes in EMS. These changes will impact all facets of the Monterey County EMS System.

It is important to briefly describe the changes to EMS Systems being driven by the ACA and health reform generally. Those organizations implementing health reform are moving to implement the Triple Aim. The Triple Aim is a doctrine, established by the Institute for Health Improvement, which states that medical care should generally meet the following three criteria: (1) continuously improve quality; (2) maintain or reduce costs; and, (3) maintain or improve patient satisfaction.



Currently, reimbursement for services is based on the service provided. The ambulance company is paid because they transported a patient to an emergency department, often whether or not that patient clinically needs an ambulance or needs to be treated in an emergency room. In the future, reimbursement will be based on whether the service provided improves the patients' clinical outcome; meaning, based on clinical research and evidence, did the service or treatment provided assist in improving the patients' recovery from the illness or injury? If the service or treatment did not assist in improving the patient's recovery, then no payment will be provided.

The Triple Aim, and its cost controlling measures, is already being implemented. Many insurance companies assess whether the ambulance was needed before they pay an ambulance bill. If the insurance company determines that an ambulance was not necessary, for example, because the patient had a cold, which did not require an ambulance, then the insurance company will not pay. The EMS System of the future must be designed to deploy scarce financial resources to support those treatments and services that are clinically proven to improve patient outcomes. The EMS System of the future must also integrate with other health and medical services providers to integrate EMS services into whole person systems of care.

## EMS 20/30: Monterey County's Process to Assess, Design and Implement a Triple Aim-Focused EMS System

During FY16-17, the EMS Agency will begin the complex and highly-regulated process of selecting a provider for the Monterey County Exclusive Operating Area for 911 emergency paramedic ambulance service. The contract that results from this process will likely allow the selected vendor to provide service from February 1, 2020 through January 31, 2030, which is a ten-year period. Because the planning horizon and anticipated contract period runs from 2020 to 2030, and because a key driver of change during that period will be the Triple Aim, the EMS Agency has entitled the Request For Proposal (RFP) process: *EMS 20/30*.

The EMS Agency will use a three-phase process to select the provider. This process will include:

### Phase 1: Assessing the Current EMS System

The EMS Agency will assess the EMS System and its components against clinically-based standards, EMS system best practices, and emerging trends. This assessment will consider changes in emergency medical services and in Monterey County during the 2020 to 2030 planning horizon and contract period. Unlike most EMS system assessments, we will work with city and County planning departments to understand population, demographic and economic changes during the planning period. This EMS System Assessment will also inform the RFP Process.

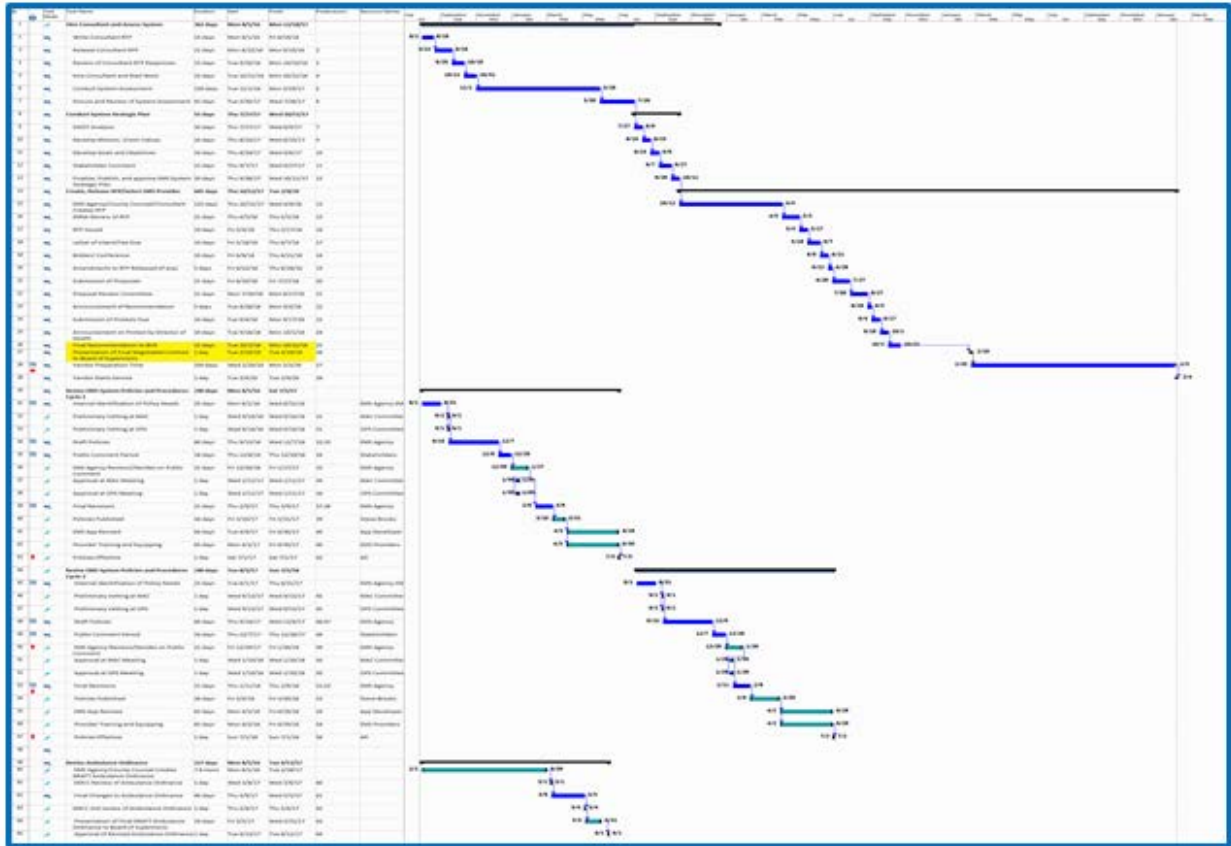
### Phase 2: EMS System Strategic Planning

The EMS Agency will engage in a stakeholder-based strategic planning process. This agnostic (non-provider specific) process will help to identify the desired future direction of the Monterey County EMS System, and will inform the RFP Process.

### Phase 3: Request for Proposal (RFP) Process

The EMS Agency will create the RFP, release the RFP, and recommend to the Board of Supervisors, the most desirable vendor to provide 911 emergency paramedic ambulance service to the Monterey County Exclusive Operating Area. This process is increasingly regulated by the California EMS Authority, based on case law. The EMS Authority must approve the final RFP before it is released, and approve the process used to create the RFP. The EMS Authority's approval is necessary to confer state anti-trust immunity for the Exclusive Operating Area. During this past summer, the EMS Authority has refused to approve a local EMS agency's RFP, due to concerns about fair bidding and entities with an interest in the outcome of the RFP having undue influence in the RFP review process.

The EMS Agency is working closely with the CAO's Office, County Counsel, Health Department, and Procurement to begin this three-phase process. The EMS Agency would like to have the process complete and make its recommendation for approval to the Board of Supervisors by February 1, 2019, which provides the selected vendor time to prepare to meet the standards and processes identified in the contract. Shown below is the preliminary Gantt chart timeline of the RFP assessment, strategic planning and RFP process.

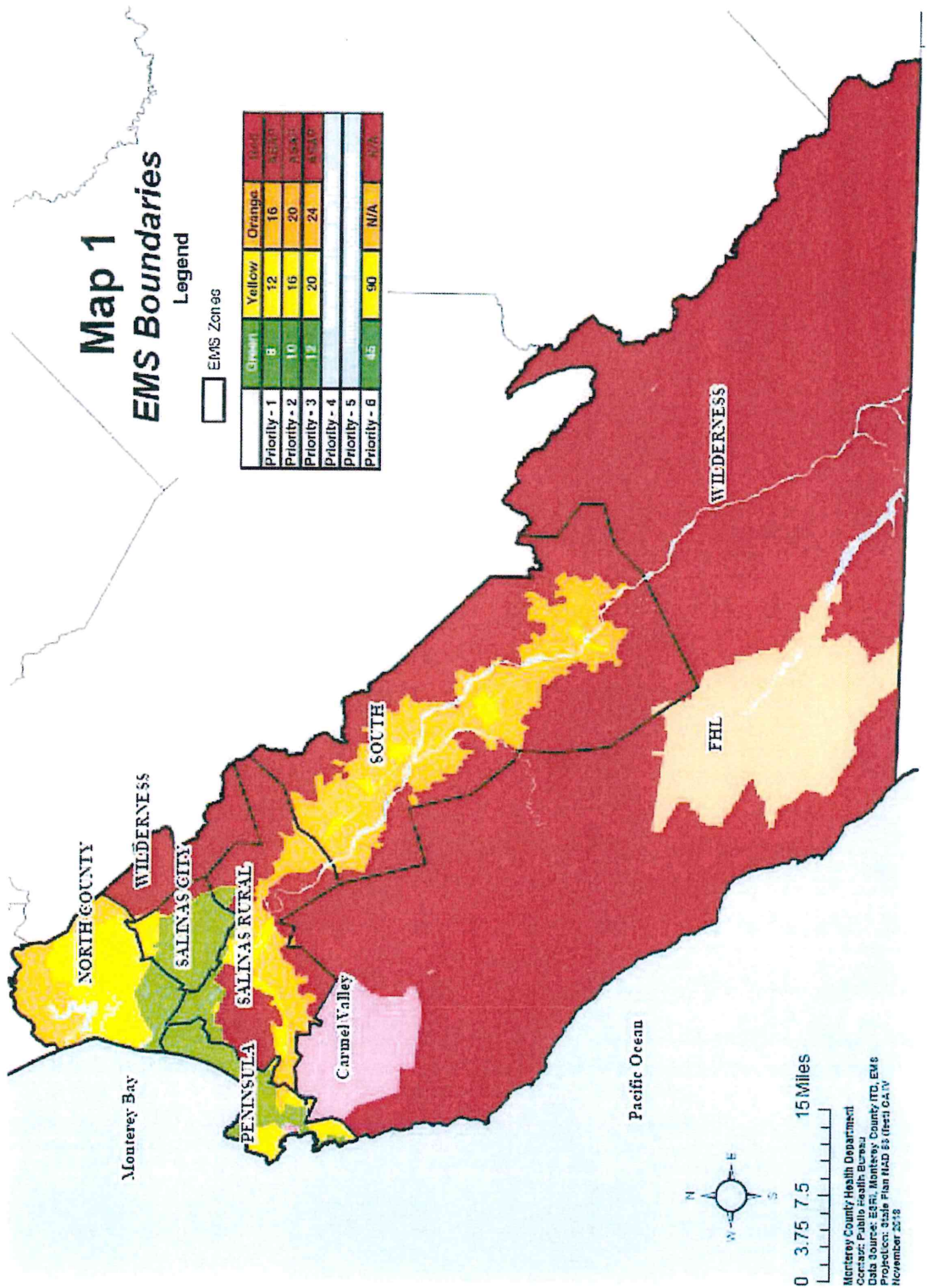


In conclusion, the Monterey County EMS Agency extends its appreciation to the Honorable Members of the Monterey County Board of Supervisors, Dr. Lew Bauman, Ms. Elsa Jimenez, community partners, and first responders, emergency telecommunications professionals, EMTs and paramedics for your dedication, commitment, and effort in support of the Monterey County EMS System.



# Attachment A: Response Time Performance Maps

**EXHIBIT D TO AGREEMENT TO PROVIDE ADVANCED LIFE SUPPORT AMBULANCE SERVICE FOR THE COUNTY OF MONTEREY (ZONE MAPS)**

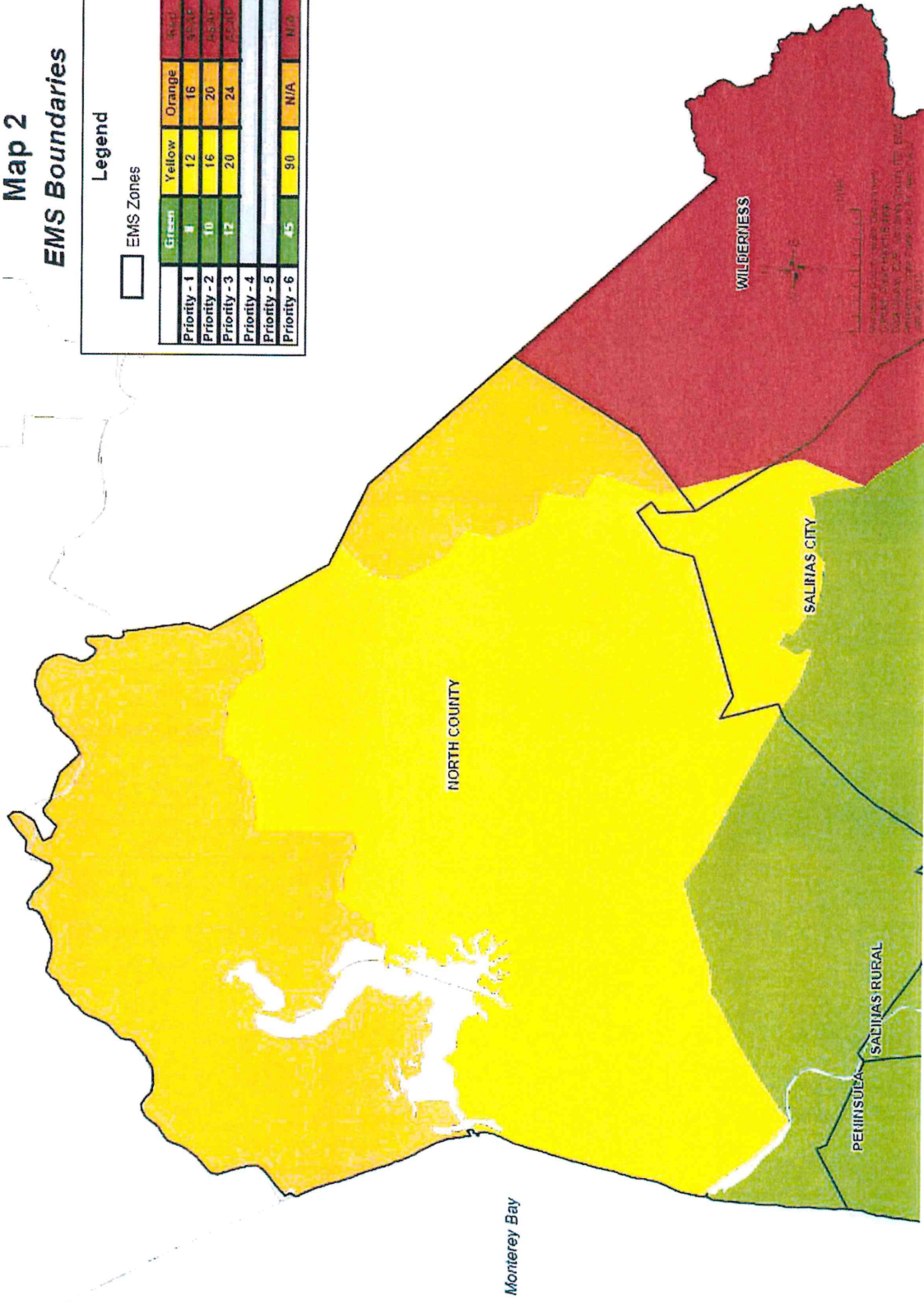


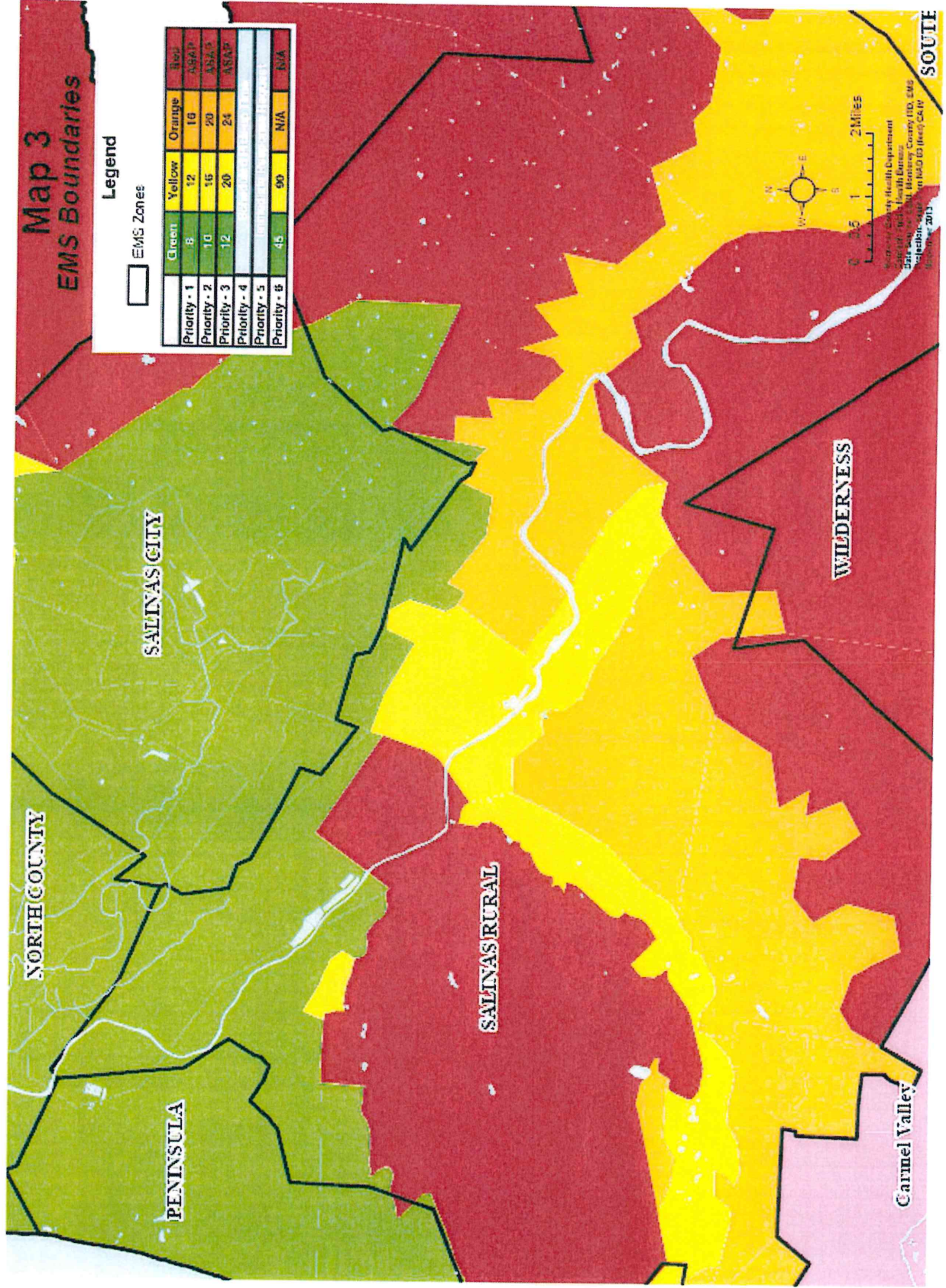
## Map 2 EMS Boundaries

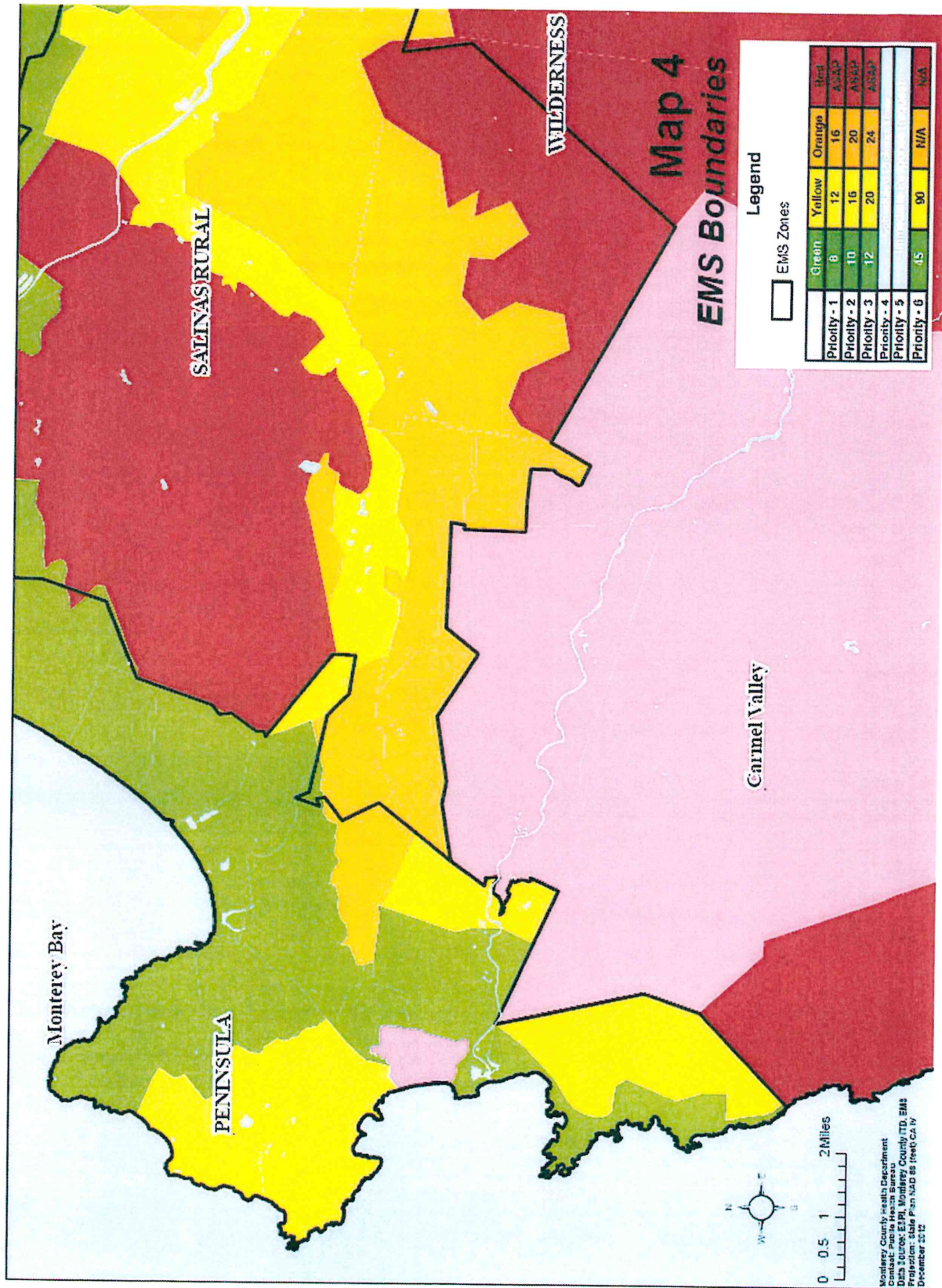
Legend

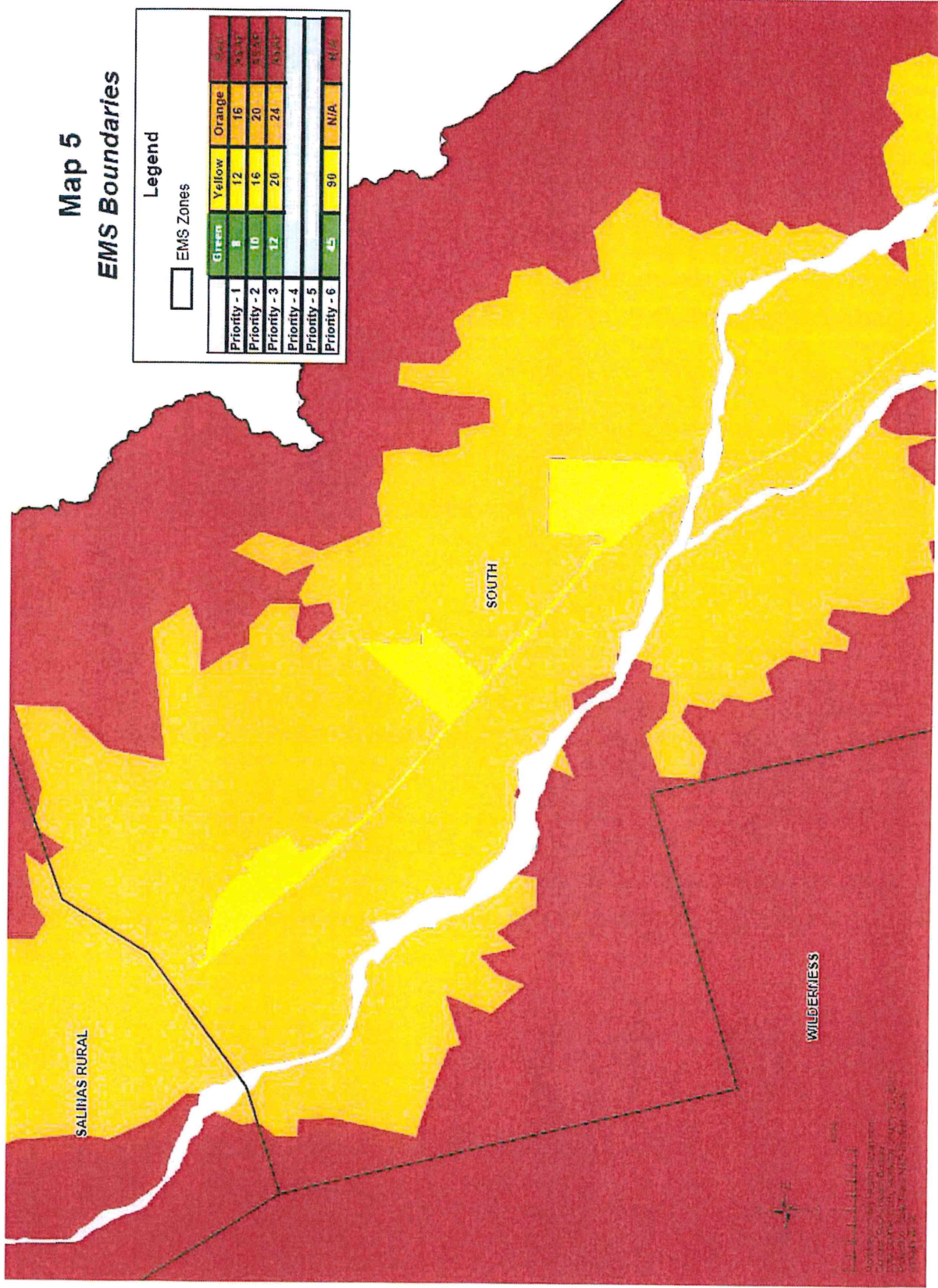
EMS Zones

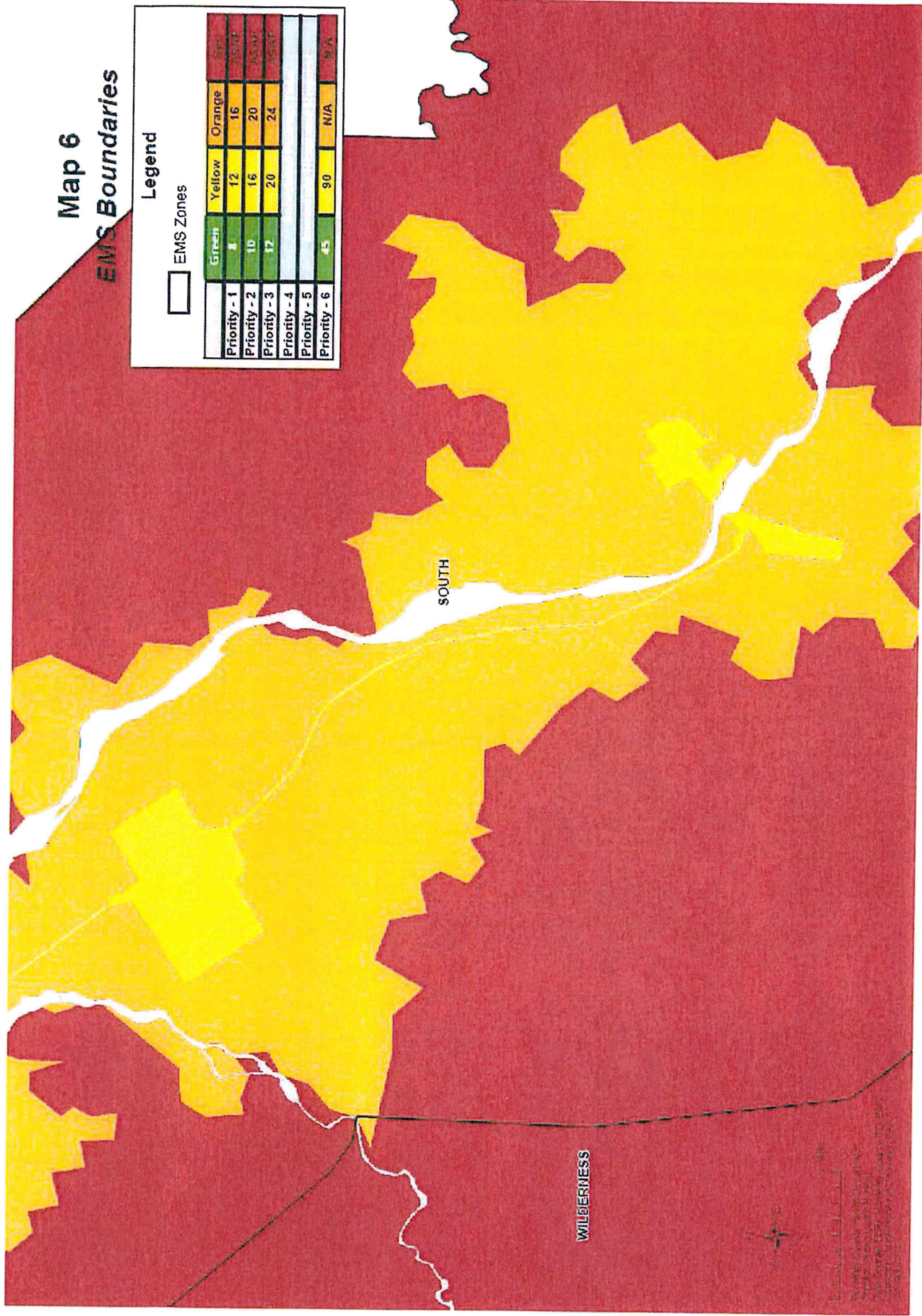
	Green	Yellow	Orange	Red
Priority - 1	11	12	16	ASAP
Priority - 2	10	16	20	ASAP
Priority - 3	12	20	24	ASAP
Priority - 4				
Priority - 5				
Priority - 6	45	50	N/A	N/A











**End of Report**