

FINAL

MENDOCINO COUNTY

SERVICE AUTHORITY FOR FREEWAY EMERGENCIES (S.A.F.E.)

FIVE-YEAR STRATEGIC

AND

FINANCIAL PLAN

March 2017

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MENDOCINO COUNTY SERVICE AUTHORITY FOR FREEWAY EMERGENCIES (S.A.F.E.)

FIVE-YEAR STRATEGIC AND FINANCIAL PLAN

(Including FY's 2015/16 through 2019/2020)

Adoption: March 2017

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I. EXECUTIVE SUMMARY

Historical Background

North Coast Emergency Medical Services (EMS) was instrumental in the formation of the Mendocino County SAFE. North Coast EMS has administered emergency medical services development on behalf of several northwestern counties since 1975. In 1991, North Coast EMS obtained a California Office of traffic Safety grant to plan and implement a call box demonstration project in Del Norte, Humboldt, and Lake Counties. Ten call boxes were installed in North Coast counties under this program. They have been operational since 1994. Each of the counties has since created a SAFE and installed additional call boxes.

In 1985 the California Legislature passed Senate Bill 1190 to enable counties to generate revenue for the purpose of purchasing, installing, operating and maintaining an emergency motorist aid system. Senate Bill 1199, enacted in January 1986, provided the basic format for the formation of SAFEs, and Assembly Bill 1390, enacted in October 1991, authorized a county and its cities to designate a Council of Governments to serve as a SAFE for the county. The Mendocino Council of Governments (MCOG) was designated as the Service Authority for Freeway Emergencies (SAFE) in August 1994 after the cities of Ukiah, Fort Bragg, Point Arena and County of Mendocino formed a Joint Powers Agreement (JPA) establishing the SAFE in Mendocino County.

The SAFE Board of Directors is composed of the identical membership to the Mendocino Council of Governments: Two members of the Mendocino County Board of Supervisors, one City Council member from each of the four cities, and a county-wide appointee. Meetings are held, when needed, at times and dates reserved for MCOG meetings. The Mendocino SAFE Program is operated in partnership with the California Department of Transportation (Caltrans), the California Highway Patrol (CHP), the California Department of Motor Vehicles (DMV), and private sector businesses such as Verizon Wireless and CASE Systems.

SAFE affairs are administered by the SAFE Executive Director. The Executive Director position is contracted through the SAFE Administration and Fiscal contract with Dow & Associates. The Executive Director is responsible for scheduling meetings, preparing agendas and public notices, coordination with state and federal agencies, maintenance of SAFE records, accounting services related to SAFE funds, distribution of information to the SAFE Board, and general guidance regarding SAFE activities.

Mendocino County SAFE also contracts with the transportation planning consultant Davey-Bates Consulting to perform updates of the Implementation Plan, identify call box installation sites, assist in contracted call box installation, review exception/alarm reports via maintenance computer and arrange repair/maintenance activities. The current contract is scheduled to expire within the timeframe of this Implementation Plan. With full implementation expected early in 2017, the need for planning services is not anticipated to extend beyond the current contract period (FY 2018/19). In FY 2019/20 and beyond, the SAFE program will be considered to be an administrative function.

The 2016-2020 Strategic and Financial Plan is intended to guide Mendocino SAFE to full deployment of call box service along the state routes in Mendocino County. Also during this five year time frame, continuous monitoring and evaluations of the existing system will take place for the validity of the usage. Installations identified in the 2011 Implementation Plan were delayed while working through several issues associated with the deployment of the new satellite call boxes. To date, 130 of the 143 originally identified locations have been installed. The 2016-2020 Strategic and Financial Plan will launch the first two years by installing call boxes identified on State Route 1 to bring the Mendocino SAFE System to full deployment. The following two years staff will perform extensive monitoring and evaluation on the usage of the call box system. In the

final year of this plan, staff will address sustainable maintenance and explore the feasibility future deployment on Mendocino County roads.

Future of the Call Box Program

Nationwide, call box programs expanded, especially in urban areas, as a means of traffic management. The quicker that collisions and mechanical failures could be reported to authorities, the faster travel lanes could be cleared and congestion impacts avoided. Guidelines were established for systems that called for spacing ranging from 2 miles in rural areas to ¼ mile on high volume facilities such as urban freeways. For sites on 4-lane expressways, guidelines require 1 call box for each direction of travel at each location.

As call box programs expanded to northwest California, factors other than traffic management were considered. There are many miles of remote highways where, during certain times of the year, there may be a considerable time lapse between vehicles. Therefore, if there is a serious injury, valuable minutes may be lost before another vehicle passes by the scene that could then summon help. Even if the problem is just mechanical failure, there may be considerable lapse in time before a breakdown message is conveyed and help arrives.

Since the Mendocino SAFE was formed and the first call boxes installed, cellular technology has exploded. Many people now carry personal cell phones, reducing the need for roadside devices. Many urban areas have experienced a dramatic decrease in call box use. Several agencies have reduced the call box spacing and have phased out service in certain areas.

So, is there a need to continue to invest taxpayer dollars into a program that has been bypassed by technology? To date, the Mendocino SAFE Board has responded that yes, there continues to be a need – at least in our rather isolated corner of California. Considerations for continuing the program are:

- The existing system continues to be utilized, some locations more than others
- Cellular coverage in Mendocino County continues to be scattered and sometimes unreliable
- Accidents can happen to anyone, but mechanical failures are more likely to happen to people who, due to economic considerations, drive poorly maintained vehicles; this same group are also less likely to be able to afford personal cell service
- There remain areas where call box service can be provided but signal strength is insufficient to ensure consistent cellular service for personal cell use.
- As a tourist destination county, it may provide an additional degree of assurance to visitors traveling unfamiliar roadways

At the time the SAFE program was developed no one could have foreseen the expansion of personal cell phones and the impact on this program. Technology always lags in rural areas, and we can expect that in the future. It could be that GPS transmitters will be standard automobile equipment in the future. Even so, the national fleet turnover rate is approximately eight years. So we could expect that the next technological advance that could render the program obsolete is at least ten years in the future. In any event, the Board and future Boards should monitor the program and evaluate its continued viability. Demise of the program within the time frame of this plan is not expected. There remain far too many gaps in cellular service coverage to expect significant and timely coverage improvements that would lead to a decline in service demand. Cellular service providers have little or no economic incentive to expand cellular coverage area in rural areas.

Implementation Issues

There are several policy issues of importance that should be addressed that will have a financial impact on Mendocino SAFE. The issues described below have the potential to impact call box service, and decisions on them are necessary both now and on an ongoing basis because of regulatory requirements.

- A. <u>Poor Reception</u>: Cellular service reception continues to be an issue throughout Mendocino County due to the mountainous terrain. Locations are sought that can provide reliable service with our three watt radios and stationary antennas located on the 14 foot poles. These locations can provide service that may not be available to standard hand-held cell phones.
- B. <u>Satellite Technology</u>: There are areas in Mendocino County where cellular service is so weak or nonexistent that the current call boxes do not work, even when equipped with amplified antennas. With the advancements in satellite technology, Mendocino SAFE is able to provide service in areas where it has previously been unreliable or absent. There are a couple of noticeable differences between the satellite and cellular call boxes. The satellite box has a longer delay when connecting calls and it does support TTY technology. Since these boxes use newer technology than their cellular counterparts, the cost of operating them is higher. This increase in cost will have a financial impact on Mendocino SAFE as the percentage of satellite radios in the system increases. Operational costs will be monitored on an ongoing basis. It is anticipated that these costs will decrease as technology and cell service improves.
- C. <u>Americans with Disabilities Act of 1990 (ADA)</u>: Providing enhanced access to motorist aid services for persons with physical, speech and/or hearing disabilities under the ambiguous requirements of the ADA can be rather challenging and costly. TTY technology has been added to all call boxes in Mendocino County and will be a component of all new cellular installations in the future. Physical limitations of potential users under ADA are addressed by providing Type A (level) sites wherever possible and boxes positioned at heights accessible by wheelchair. Where conditions dictate, Type M, and in few cases, Type L sites are also utilized.
- D. <u>Maintenance</u>: Maintenance has been provided by the manufacturer on a "call when needed" basis for several years. Although most authorities have contractual arrangements for maintenance based on a flat fee per box, the Mendocino SAFE has found that typical maintenance fees are prohibitive and response time unacceptable. Lake and Mendocino SAFEs are the only SAFEs to have a maintenance computer so that maintenance issues can be detected remotely. Mendocino SAFE personnel regularly respond to routine maintenance issues; those sites that require higher level attention are bagged until attended to by technical crews from outside the area. The problem remains that scheduling repairs may take a matter of weeks due to travel distance between our boxes and repair technicians dispatched from the Bay Area. As deployment of the remaining phase will occur early in the plan, the focus of this implementation plan will be on system monitoring and adjustment, as needed, and addressing sustainable ongoing maintenance.

Financial Plan

The program is funded by a \$1 fee, included with the annual vehicle registration fee, collected by the California Department of Motor Vehicles and forwarded to the SAFE on a monthly basis. The annual \$1 DMV fee is supplemented by any revenue not utilized in the year it was collected (known as Fund Balance), the interest earned on the fund balance, and occasional reimbursements from motorists who damage call boxes. The stream of DMV revenues has remained steady over the past five years. Staff will take a conservative approach and project that DMV revenues will remain steady over the next five years.

Based on financial projections of anticipated revenues and expenditures over the next five years, the DMV revenue stream is sufficient to support the installation, maintenance and operations of the State Highway call boxes identified in this plan. Once the State Highway system is fully implemented, the Mendocino SAFE will look at installing call boxes on County roads if it is financially feasible. The development schedule below shows the installation of call boxes on the State Highway system. Unfortunately, the program's fiscal viability could be compromised if other types of expenditures are budgeted on top of the anticipated installations, basic operations and maintenance. This Strategic Plan presents a relatively conservative set of strategies

designed to refine and enhance current services, so that they may be operated in the most cost-effective and safe manner.

Priorities for Call Box Development Schedule

Staff recommends that Mendocino Council of Governments authorize SAFE staff to implement the following schedule:

- A. **FY 2015-16:** Due to the lapse of the previous Five-Year Strategic and Financial Plan, Fiscal year 2015-16 is included within this plan for the sake of continuity. All work identified herein has been completed. Installed 35 call boxes along State Routes 162, 20 and 101. Of the 35 installed, 11 were equipped with the Satellite technology to access even more remote areas. The installation sites provided for two-mile spacing along routes 20 and 101, and will reduced spacing on remote State Route 162 down to 1 mile. The capital cost for this installation of 35 call boxes was \$242,000.
- B. **FY 2016-17:** Install 11 standard cellular call boxes along State Route 1. This final installation will essentially complete the build out within State right-of-way on State Route 1 for the call box system. The capital cost for this installation of 11 call boxes is \$60,500. Two other sites outside State right-of-way may be considered in the future dependant on system need and agreement with private land owners adjacent the prescriptive right-of way.
- C. FY 2017-18 & 2018-19: With full deployment complete in Fiscal Year 2016-17, the next two years will focus on monitoring and evaluation of the complete system. Some adjustments to sites and equipment may be needed. Concurrent with evaluation, options will be developed to provide for long-term and sustainable system maintenance consistent with financial constraints. Long term maintenance changes will go into effect in FY 2019-20.
- D. **FY 2019-20:** An effort will be to identify and confirm priority routes for call box installations on the Mendocino County Road System. Installations on County roads will be considered if uncommitted revenues remain after maintenance needs are satisfied or if the system is reduced on State highways due to declining use. Since revenues are expected to increase only slightly, new installations will be considered if maintenance and operation costs decline, or if existing sites are retired. There are no call boxes currently deployed on county roads in Mendocino County.

II. DESCRIPTION OF THE CURRENT CALL BOX SERVICE

Existing Service

The Service Authority for Freeways and Expressways guidelines distinguish between two types of programs that can be provided by a SAFE. A *system* is one that consistently meets the call box spacing guidelines. A *service* is a program that fails to meet the spacing guidance called out in the guidelines. Revenue limitations, extensive State Highway mileage, and inherent topographic constraints preclude the operation of a call box system on state routes in Mendocino County. Motorists in Mendocino will find a *service* that concentrates service in remote and isolates areas were cellular service is known to be unreliable or non-existent. This *service* operates within the financial, cellular service area, and topographic constraints described herein.

Mendocino SAFE currently maintains 129 call boxes which are located sporadically on State Routes 1, 20, 128, 101, 162, 175 and 253. Another 11 have recently been acquired and will be deployed in the very early months of this plan. These call boxes are generally located on two-lane highways. Distances between the existing call boxes range from approximately one mile to several miles in very isolated areas. Despite efforts to achieve 2-mile spacing where cellular service is unavailable, topographic issues sometimes are the controlling factor in deployment. Segments of roadway may lack turnouts suitable for call box installation and in other areas dense forests impact sunlight penetration necessary for solar re-charging. Spacing between call boxes falls below the minimum spacing requirements for a complete system; the Mendocino SAFE will continue to operate as a *service*. Call boxes on two-lane highways are generally installed as single boxes. Call boxes on divided highways (only US 101 in Mendocino County) are installed in pairs on opposite sides of the highway.

The CHP/Caltrans Call Box and Motorist Aid Guidelines, under which call box programs operate, provide direction on call box siting and spacing. In general, the Guidelines standards take into consideration traffic volume along the roadway segment, measured in average daily traffic counts (ADTs) and safety issues when making spacing recommendations.

Appendix A-1 provides a map of the existing Mendocino County Call Box service.

Site Designs

To accommodate the variety of terrain and other physical and roadway design conditions that exists alongside California highways, Caltrans has developed a number of standard call box sites designs.

Mendocino SAFE strives to install call boxes meeting the requirements of a Type A site. When conditions permit (usually at paved turnouts) Type M and occasionally Type L sites are installed.

The current Guidelines contain eight distinct site types as follows:

SITE TYPE	DESCRIPTION	PICTURE
A	Installed at level grade; may have handrail in rear if near down slope	CALL BXX
D	Directly mounted onto a sound or retaining wall (not preferred)	000
E	Installed behind a barrier wall	
F	Installed behind a guard rail	POM
G	Installed on a paved median	
Н	Mounted on top of a barrier wall	CALL BOX M. M.
L	Mounted behind a dike with call box lowered and turned 90 degrees to face traffic	LACK NAME OF THE PARTY OF THE P

SITE TYPE	DESCRIPTION	PICTURE
M	Same as L site without dike in front of site	TOTAL STATE OF THE PARTY OF THE

Partnerships

In order for this service to operate smoothly and safely, the Mendocino SAFE is operated in close coordination with a variety of public and private partners:

California Highway Patrol (CHP) personnel respond to calls for assistance, and dispatch public safety assistance such as emergency medical services, vehicle roadside assistance, law enforcement, and fire response, as appropriate.

California Department of Transportation (Caltrans) is responsible for operating and maintaining California's interstate freeways and state highways. The Mendocino SAFE works closely with Caltrans District 1, which is responsible for reviewing and permitting call box site locations and installations. In order to assure that all call box sites throughout the state have similar standards, Caltrans' Headquarters in Sacramento provides overall guidance and support for call box programs.

The California Department of Motor Vehicles (DMV) collects the \$1 vehicle registration fee from vehicles registered in Mendocino County and forwards the net proceeds to the SAFE for use in operating the call box program.

The California SAFE Committee is an association of California call box authorities. Known to members as CalSAFE, the organization provides a forum to share information and discuss common issues. Program Managers from the SAFEs meet annually to consult on with issues such as call box equipment and maintenance costs, access for disabled motorists to call boxes, technical improvements to call box equipment, safety matters, and extending call box coverage to rural counties.

Mendocino SAFE shares maintenance monitoring equipment as well as contracted SAFE planning personnel with Lake SAFE. Sharing monitoring equipment provides a savings to both agencies. Coordinated planning and management is possible because Davey-Bates Consulting / Dow & Associates has planning and administration contracts with both agencies.

Key operational aspects of the program could not be implemented without further assistance from the private sector. The Mendocino SAFE works closely with Verizon Wireless to provide cellular service and has a negotiated agreement in place that provides a low government rate for basic cellular service, SatCom provides satellite communications for those call boxes provided in remote areas. Case Systems Inc. is the equipment provider that provides both traditional cellular operated boxes as well satellite operated boxes. Case Systems also provides the maintenance computer operating system.

Call Box Operations:

Each call box is a battery powered, solar charged roadside terminal with a microprocessor and built-in cellular or satellite telephone. Call box terminals are attached to steel poles mounted on slip bases designed to

minimize damage to the call box and to a vehicle in the event of a knockdown. Motorists need only open the front of the unit and pick up the handset and push a large green button to be connected to a California Highway Patrol dispatcher. At that point, voice communications between the motorist and the dispatcher are like any other voice telephone communications. If the motorist needs aid, but has a physical, speech and/or hearing disabilities, they can push the large red button, which will help the CHP dispatcher identify the motorist as impaired and will engage the TTY feature of the call box, where the user can then begin typing the appropriate message to the CHP Dispatcher.



Once the motorist is connected, the dispatcher responds to the request by (1) routing designated calls such as accident reports, crime reports, fires and requests for medical assistance to CHP for the appropriate services or (2) providing a direct connection to routine service to private tow and service providers. All call boxes in California use an Automatic Number Identification (ANI) feature which informs the dispatcher, through a data base look-up, of the exact location of the caller. This feature expedites service requests and is particularly important in critical situations or when motorists are otherwise unable to discern their locations.

Call boxes receive as-needed corrective maintenance to keep them operating. The units are designed to operate in extreme temperatures and in all types of weather conditions. Additionally, the call boxes are capable of initiating special alarm calls to the Mendocino SAFE's maintenance computer in the event of a malfunction, knockdown, or vandalism. Cellular call boxes automatically report their operational status at regular intervals (every 72 hours), and Satellite call boxes report operational status at regular intervals (every 6 days) reporting items such as: battery voltage, electrical components continuity, etc. If a critical item malfunctions in between routine status report calls, the call box initiates an immediate alarm call to the maintenance center.

Operational Statistics

The number of motorist aid calls generated from the county's call boxes to the California Highway Patrol during the period of July 1, 2015 through June 30, 2016 was 839 calls. Currently the service operates 130 call boxes, which average a little over 2 calls per box, per day to the primary answering point (CHP). Although some call boxes do not have a large number of calls to the primary answering point for the year, more of the remote areas as identified in the usage report have heavier than average call volumes. The average call per box for 2015/16 is 8.51.

Appendix A-2 provides an excerpt from the Mendocino SAFE July 1, 2015 – June 30, 2016 Fiscal Year Report generated by the Mendocino SAFE maintenance computer.

III. NEEDS ASSESSMENT OF THE CALL BOX SYSTEM

The Mendocino SAFE has faced many challenges over the last five years. Staff evaluated the upgrades needed to the existing system based on changing requirements at Federal and State levels, along with ongoing cellular service issues. Most of these upgrades were completed during the course of the 2006 plan.

Americans with Disabilities Act

Background

The Americans with Disabilities Act (ADA) was enacted on July 20, 1990, and provides comprehensive civil rights protection to individuals with disabilities in the areas of employment, public accommodations, state and local government services, and telecommunications.

Mobility Impaired Individuals

Although the Mendocino SAFE has been in operation since 1994, it has taken a number of years of revenue accumulation in order to fund a significant number of call box installations. All call box sites on the Mendocino SAFE system were selected by a registered traffic engineer whose emphasis was on traffic safety with a secondary emphasis on accessibility. These early sites were also confirmed by a Caltrans permit engineer prior to installation through the Caltrans Encroachment Permit process. As the Mendocino SAFE is entering the final installation phases, approximately 60% of the service was installed in this manner.

In the past 4 years, a more formal process has been employed to ensure the Mendocino SAFE call boxes are accessible to those who have mobility impairments. A traffic engineer selects call box sites based on safety and enhanced consideration of ADA mobility concerns. A Caltrans permit engineer field reviews the recommended sites prior to preparation of an Encroachment Permit. As a condition of the permit, a registered engineer reviews the sites, makes recommendations for adjustments as necessary, then approves the sites for construction. After construction, a registered engineer revisits all sites to ensure completed sites meet mobility access standards required in the permit. Approximately 40% of the existing service and all remaining installations will be installed in this manner.

Speech and Hearing Impaired

In an effort to provide greater access to call boxes for hearing and speech impaired motorists and passengers, the Mendocino SAFE equips all cellular call boxes with the tele-type/telecommunications (TTY) technology.

A TTY/TDD provides the user with a small display screen and keyboard onto which messages can be typed and then transmitted to another TTY/TDD at the other end of a telephone or cellular phone line. The operator, upon receiving notification that the TTY is in use, can activate pre-scripted and custom text to determine the nature of the caller's request. All Mendocino SAFE call boxes deployed prior to June 30, 2006 were retrofitted to provide this feature. First generation satellite call boxes were unable to provide TTY service. Modifications were subsequently made to the call boxes and to CHP call centers so that all operational satellite call boxes deployed by Mendocino SAFE provide TTY capability.

Cellular Technology

The specifications and operation of digital cellular call boxes remain very similar to those of the original call boxes installed at the beginning of the Mendocino SAFE's call box program in 1994. Although largely transparent to the motorist, a number of technological improvements have been made by the call box manufacturer over time. These improved versions of the call box were installed in June 30, 2006.

Recent advances in communications technology may provide other opportunities for enhancing contributions from call box programs. Digital communication services are now available in many areas and geographic

coverage by providers of these technologies is gradually expanding. Digital providers are able to transmit both voice and data communications quickly and efficiently with unlimited access. The cellular companies are no longer installing towers to provide any additional analog service. Furthermore, a FCC ruling required the analog service providers to maintain their systems until July 2007 after which analog service was discontinued. The Mendocino SAFE program has fully implemented the digital conversion throughout the county.

Satellite Technology

While a large portion of call boxes installed in the Mendocino SAFE call box system remain supported by cellular, in the previous implementation plan satellite technology was introduced to the Mendocino County system. The differences between the call boxes are very minimal and may not be easily noticed by the motorist or user. Satellite technology allows for call boxes to be installed at various locations throughout the county that could not be previously supported by cellular communications. The functionality of the satellite box does, however differ slightly by the amount of time needed to connect to the CHP dispatcher. Satellite boxes are a growing need for rural areas. Whereas their costs are remain higher than the traditional cellular box, their utility outweighs cost considerations in providing service to remote areas.

Decreasing Call Volume

Although Mendocino SAFE has noted a decrease in call volume in areas where there is reliable cellular service, an increase in calls has also been noted in areas with poor or no cellular service. It is believed that the main reason for the decrease in calls is overall increased usage of cellular phones. However, call boxes continue to provide a safety net for those motorists without a cell phone; and due to overall limited reception call boxes tend to be more reliable. Batteries of call boxes are continuously recharged so they are rarely low on power. Regular self-diagnostic checks through the maintenance computer report call box operational status to identify mechanical problems should hardware fail. Most importantly, the boxes automatically identifies location to help aid both the motorist and CHP in sending the appropriate assistance to the correct location if a motorist is unable to communicate with the CHP dispatcher.

Call Box Maintenance

One of the early concerns with implementing a call box service in a remote rural area was with call box maintenance. In the early years there were few boxes in operation and the equipment was new. Maintenance was intermittent and not of a major concern. As the system grew, Mendocino SAFE and Lake SAFE acquired a maintenance computer. The computer provided both SAFEs print-outs of call box status and identified maintenance issues. Staff, over time, acquired limited maintenance capabilities and began responding to minor maintenance issues. The equipment supplier, CASE Systems, offered maintenance contracts on an annual cost per box basis. The cost of an annual contract for Mendocino SAFE was prohibitive at the time, so major repairs have since been performed on an "as needed" basis.

With many more call boxes installed recently due to full implementation, continuing major call box maintenance on an "as needed" basis is untenable. The SAFE will need maintenance providers that possess the necessary skills and are able to respond in a timely manner. The "as needed" basis results in response delays ranging from several days to several weeks. In the meantime, these boxes are bagged and taken out of service. Currently, responding technicians travel from Sacramento and Union City. This inefficiency results in lengthy delays and high costs.

IV. IMPLEMENTATION PLAN STATUS AND SCHEDULE

The Mendocino County SAFE has been in operation since 1994. Since then, fees have been collected and background work regarding priority call box placement has been completed. As the implementation of the call box system along state routes nears completion, the Mendocino County SAFE will begin extensive monitoring and evaluation of the service. Later in the implementation plan county roads will assessed to determine the necessity and value to the service. Under Section 2557 of the California Streets and Highways Code, the Mendocino County SAFE is authorized to use SAFE funds for the implementation, maintenance, and operation of call boxes along unincorporated county roads.

Motorist safety continues to be the primary concern for Mendocino SAFE. There is no need in Mendocino County to provide a call box system with minimal spacing requirements as a congestion management tool. Other than segments of U.S. 101, State highways in Mendocino County are two-lane roadways in mountainous areas. Daily volumes on most of these routes are relatively low and decline in the winter months. Mendocino SAFE has based call box placement priorities upon accident and volume data. Unlike the urban areas, low traffic volume is one of major criteria used to determine call box placement. Availability of cellular service continues to dictate placement on most routes, however it is the goal of this plan to, where possible, provide two-mile spacing between call boxes.

Mendocino SAFE intends to closely monitor actual costs as the service nears full implementation. If costs vary significantly from projected costs, revised implementation plans will be prepared and submitted. It is expected that there will be sufficient revenues available to fully implement all phases of the plan as submitted.

Year-to-Year Call Box Development Plan:

Fiscal Year	Route 1	Route 20	Route 101	Route 128	Route 162	Route 175	Route 253	Total Boxes	
Prior	25	15	13	24	7	3	8	95	
Installations									
2015/16	0	10	7	0	18	0	0	35	
2016/17	11	0	0	0	0	0	0	11	
2017/18	First stage of extensive system wide monitoring, call box usage evaluation and ADA Compliance.								
2018/2019		Continued monitoring and evaluation of the system, development of sustainable maintenance options and review of ADA Compliance.							
2019/2020	System adjustments, sustainable maintenance implementation, and evaluation of county road priorities.							2*	
Total	38*	25	20	24	25	3	8	143	
Per Route:									

^{*}Two call boxes are planned on SR1 but within private right-of-way. Agreements must be developed and in place prior to deployment. This will likely occur after FY 2016/17.

This implementation plan expects revenues to be sufficient to provide for the 143 call box service identified herein. If costs decline or if call boxes are removed due to enhanced cellular coverage (resulting in declining usage) within the time frame of this plan, implementation on County roads will be considered.

Call Box Deployment on the County Road System:

County roads (or segments thereof) that are widely used and penetrate remote areas may be served, as funding becomes available, as follows:

- CR 122 Fish Rock Road CR 502 Old Stage Road to CR 503 Iversen Road
- CR 132 Philo Greenwood Road SR 1 (Elk) to SR 128
- CR 135 Flynn Creek Road SR 128 to CR 223 Campeche-Ukiah Road
- CR 223 Campeche Ukiah/Orr Springs Road SR1 (Mendocino) to North State Street (Ukiah)
- CR 240B Eel River Road CR 240 East Side Potter Valley Road to Lake County Line
- CR 237D Tomki Road CR 237 West Road (Redwood Valley) to CR 306 Hearst-Willits Road
- CR 311 Sherwood Road Main Street (Willits) to CR 419 Fort Bragg/Sherwood Road
- CR 336 Mina Road SR 162 to Trinity County Line
- CR 338 Mendocino Pass Road SR 162 to Glenn County Line
- CR 429 Branscomb Road SR 1 to US 101
- CR 501A Old State Highway SR 1 to CR 502 Old Stage Road
- CR 502 Old Stage Road CR 501A Old State Highway (Gualala) to CR 122 Fish Rock Road
- CR 503 Iversen Road CR 122 Fish Rock Road to CR 503A Ten Mile Cutoff Road
- CR 503A Ten Mile Cutoff Road CR 503 Iversen Road to CR 506 Ten Mile Road
- CR 505 Eureka Hill Road Riverside Drive (Point Arena) to CR 506 Ten Mile Road
- CR 506 Ten Mile Road CR 503A Ten Mile Cutoff Rd to CR 505 Eureka Hill Road
- CR 510 Mountain View Road SR 1 to SR 128

Initial County Road implementation priorities recognize the need for supporting alternative travel routes in times of periodic flooding on SR 128 (Navarro River) and SR 1 (Garcia River) as well as key east-west routes through mountainous terrain. These are, by County Road number:

- CR 135 Flynn Creek Road
- CR 223 Comptche-Ukiah/Orr Springs Road
- CR 429 Branscomb Road
- CR 510 Mountain View Road

V. CALL BOX FINANCIAL PLAN

Revenues & Expenditures

Funding for the SAFE Call Box Program is provided by a \$1 per vehicle annual registration surcharge imposed in each SAFE county. The surcharge is collected by the DMV as part of the normal vehicle registration process. The net proceeds (less 0.5% DMV administrative fee) have been the sole source of funding administration, planning, capital acquisition, installation, maintenance, and operations for the Mendocino SAFE. DMV revenues have remained relatively stable over the course of the previous implementation plan. During periods when there were high fund balances and higher interest rates, interest earned was a significant revenue component. In recent years, interest earned has declined consistent with national trends. Since fund balances are anticipated to be marginal, interest generated is expected to be minimal in this plan.

Please refer to Table IV-1 and Table IV-2 below which provide details of all actual and projected revenues and expenditures for the past and future five fiscal years.

Mendocino SAFE Actual Revenues and Expenditures Fiscal Year 2010/11 through 2014/15

Table IV-1

Fiscal Year	DMV Revenues	Interest Earned	Total Revenues	Expenditures	Fund Balance
2010/11	\$113,108	\$3,130	\$116,238	\$35,908	\$873,845
2011/12	\$87,579	\$5,179	\$92,758	\$52,791	\$913,812
2012/13	\$101,179	\$5,518	\$106,697	\$40,749	\$979,760
2013/14	\$103,254	\$3,721	\$106,975	\$57,710	\$1,029,025
2014/15	\$103,713	\$2,218	\$105,931	\$549,648	\$585,308

Projected Revenues and Expenditures Fiscal Year 2015/16 through 2019/2020

Table IV-2

	2015/16	2016/17	2017/18	2018/19	2019/20
Beginning Fund Balance	\$585,308	\$288,590	\$134,990	\$122,258	\$106,476
Gross DMV Revenue (estimate)	\$104,982	\$105,000	\$105,000	\$105,000	\$105,000
Interest (estimated at 1.35%)	\$1,400	\$1,418	\$1,418	\$1,418	\$1,418
Revenue Total:	\$691,690	\$395,090	\$241,408	\$228,676	\$212,894
Total Projected Expenses	\$403,100	\$260,100	\$119,150	\$122,200	\$114,250
(See Breakdown in next table)					
Annual Balance:	\$288,590	\$134,990	\$122,258	\$106,476	\$98,644

Expenses (Details)	2015/16	2016/17	2017/18	2018/19	2019/2020
Administration	\$34,000	\$36,000	\$38,000	\$45,000	\$40,000
(Contracted thru 2018/19)					
Planning & Operations (Contracted thru 2018/19)	\$15,000	\$16,000	\$17,000	\$0	\$0
New System Installations & Upgrades	\$310,000	\$150,000	\$5,000	\$5,000	\$5,000
Existing System Maintenance	\$11,000	\$20,000	\$20,000	\$33,000	\$30,000
Cellular	\$500	\$500	\$550	\$600	\$650
Satellite Charges	\$32,000	\$37,000	\$38,000	\$38,000	\$38,000
CHP Call Answering	\$600	\$600	\$600	\$600	\$600
Total Expenses:	\$403,100	\$260,100	\$119,150	\$122,200	\$114,250

Call Box Installation	2015/16	2016/17	2017/18	2018/19	2019/2020
Total Standard Call Boxes	24	11	0	0	0
• Standard Box Expenses (\$5,500/ box)	\$132,000	\$60,500	\$0	\$0	\$0
Total Satellite Call Boxes	11	0	0	0	0
• Satellite Box Expenses (\$10,000/ box)	\$110,000	\$0	\$0	\$0	\$0
Total Call Box Installation Expenses:	\$242,000	\$60,500	\$0	\$0	\$0

^{*}Call Box Installation expenses (above table) do not include any labor or Per Diem expenses that will be incurred by the contractor installing the boxes, strictly proposed cost of supplies

Expenditures

Expenditures generated from operating and maintaining the Mendocino Call Box System can be divided into three general categories:

- 1. **Administrative**. These expenses are generated primarily by Mendocino SAFE staff for the administration and oversight of the contractors, partners, and the system. These expenses include labor, benefits, overhead, travel, printing, and any professional services contracts. Upon completion of current contract periods (ending FY 2018/19) for Dow & Associates (Administration) and Dave-Bates Consulting (Planning), responsibility for Operations will revert to the administration function.
- 2. Call Box Operations and Maintenance. These expenses are for expenses to oversee and operate the system and include the contract for the current call box planning consultant (Davey-Bates Consulting), communications (Verizon Wireless/SatCOM), maintenance, equipment, and installations (Case Systems Inc.), and call answering/dispatch (California Highway Patrol). With completion of planning activities at the end of the current contract periods (ending FY 2018/19) for Dow & Associates (Administration) and Dave-Bates Consulting (Planning), there will be no need to continue the Planning function into FY 2019/20. Funding currently programmed to Planning and Operations is redistributed to Administration (+\$5,000) for increased operational duties and to Existing System Maintenance (+\$13,000).
- Capital Programs. These projects are outside of the day to day system operations and include the
 purchase of new call boxes for in-filling and expansion and upgrades to the existing system needed to
 comply with ADA and Caltrans site designs requirements. Capital expenditures will diminish rapidly

after the early years of this plan. Most capital needs thereafter are likely to be system upgrades due to new regulations and advances in technology.

Conclusions

The 2017 version of the *Mendocino SAFE Five-Year Strategic and Financial Plan* will be one of transition. The early years will complete a long implementation process that has been interrupted by insufficient funding, lawsuits and threatened lawsuits, changes in technology and technology support, and finally development new technology that provides a more meaningful service to motorists on Mendocino highways. The middle years will concentrate on analysis of the fully implemented system. SAFE staff will monitor the fully implemented system, making adjustments as necessary. Finally, the period will conclude with analysis of long term maintenance delivery. It is expected that a system of sustainable maintenance will be developed and implemented by the last year of the plan. The last year of the plan will coincide with the first year of a new contract for Administration. With planning for new installations complete, there will be no need for a separate contract for planning services beyond Fiscal Year 2018/19.

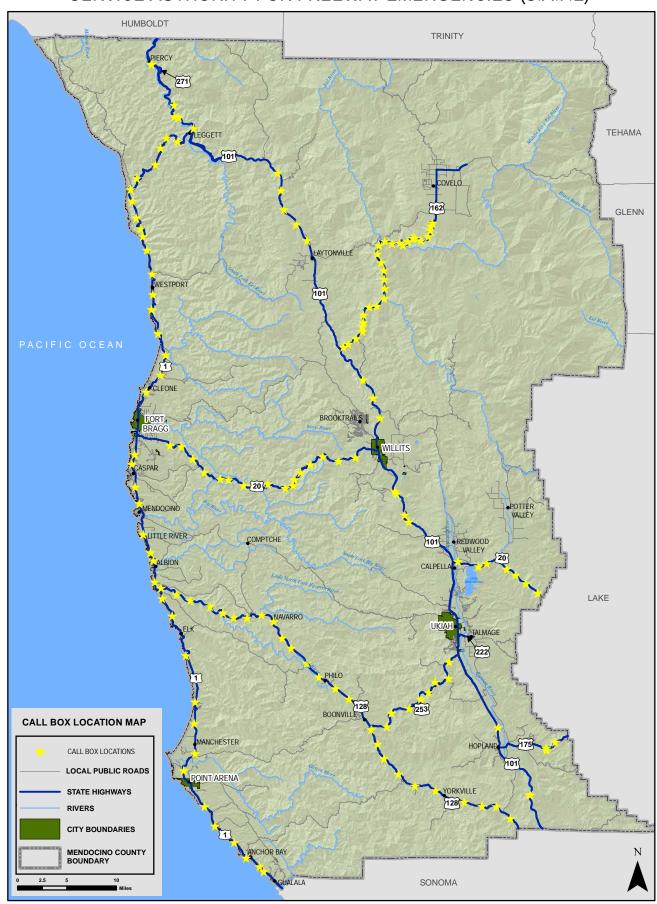
With full implementation, Mendocino SAFE's extended period of large fund balances will subside. Funding will be available within the time frame of this plan to operate and maintain the system and still provide fund balance carry-over to cover unanticipated capital and operational needs. The biggest unknown at this time is the cost of an effective and sustainable maintenance program. This will be implemented during the last year of the plan. Maintenance costs for the fully implemented system will determine whether or not there will be capacity in the future to extend the call box program onto the County Road System.

APPENDIX

- Appendix A-1: Map of Existing Call Boxes
- Appendix A-2: 2016 Annual SAFE Report from Maintenance Computer

Appendix A-1: Map of Existing Call Boxes

MENDOCINO COUNTY SERVICE AUTHORITY FOR FREEWAY EMERGENCIES (S.A.F.E)



Appendix A-2: FY 2015/16 SAFE Report from Maintenance Computer

START DATE 7/1/2015 END DATE 6/30/2016 TOTAL DAYS 366

TOTAL CALLBOXES	99.00
TOTAL CALLS PAP	842.00
TOTAL CALL TIME PAP .	1,766.68 min
AVG CALL TIME PAP	2:06
AVG PAP CALLS PER DAY	2.30
AVG PAP CALLTIME /DAY	4.83 min
AVG PAP CALLS PER BOX	8.51
AVG PAP CALL TIME /BOX	17.85 min
TOTAL REPORT CALLS	8,758.00
AVG REP CALLS /BOX	88.46
TOTAL REPORT CALL TIME	2,919.33 min
TOTAL CALLS TOTAL TIME	9,600.00 4,686.02 min
AVG CALLS PER BOX AVG CALL TIME /BOX	96.97 47:20

PAP = Primary Answering Point

CALL BOX USAGE REPORT
START DATE 7/1/2015 END DATE 6/30/2016 TOTAL DAYS 366
Page:

ART DATE		END DATE 6/30/20	16 TOTAL DAYS 366		
ANI	REPORT CALLS	PAP CALLS TIME	TOTAL TIME SIGN MIN NUMBER	CALL BOX PHONE NUMBER	CALL BOX LOCATION
400 401 402 403 406 407 408 410 411 412 423 424 423 424 423 424 423 424 425 421 421 422 423 424 425 421 421 422 423 424 425 426 1,137 1,144 1,145 1,147 1,155 1,155 1,155 1,155 1,160 1,177 1,162 1,177 1,177 1,192 1,193 1,193 1,194 1,195 1,190 1,1	97 117 113 110 110 107 111 113 110 110 110 111 112 111 112 115 104 113 106 106 112 93 106 118 98 114 109 110 110 110 110 110 110 110 110 110	8 0:11:26 10 0:40:49 16 0:25:27 6 0:07:46 8 0:28:19 3 0:05:40 6 0:11:28 3 0:00:23 2 0:00:15 5 0:03:42 3 0:01:47 3 0:01:47 3 0:09:32 16 0:22:33 4 0:13:14 4 0:14:42 2 0:00:22 2 0:00:23 2 0:00:45 10 0:19:52 9 0:22:47 1 0:00:05 3 0:15:44 4 0:08:30 8 0:09:39 10 0:46:47 12 0:35:34 8 0:27:08 8 0:09:39 10 0:46:47 12 0:35:34 8 0:27:08 10 0:46:47 12 0:35:34 8 0:27:08 10 0:46:47 12 0:35:34 8 0:27:08 10 0:46:47 11 0:00:05 11 0:46:46 12 0:35:34 13 0:06:13 2 0:00:23 2 0:00:23 2 0:00:23 2 0:00:23 2 0:00:23 2 0:00:23 2 0:00:23 2 0:00:23 2 0:00:23 2 0:00:23 2 0:00:23 2 0:00:30 10 0:46:47 11 0:21:47 12 0:35:31 10 0:20:21 10 0:20:21 10 0:20:21 10 0:20:21 10 0:20:21 10 0:20:21 10 0:20:21 10 0:20:21 10 0:20:21 10 0:20:21 10 0:20:21 10 0:20:21 10 0:20:21 10 0:20:21	2:03:26 MC-128-0495 2:35:49 MC-128-0457 1:57:46 MC-128-0457 1:57:46 MC-128-0386 2:19:19 MC-128-0336 2:19:19 MC-128-0336 2:14:28 MC-128-0336 2:14:28 MC-128-0317 1:50:15 MC-128-0298 1:42:42 MC-128-0298 1:42:42 MC-128-0298 1:42:42 MC-128-0201 1:56:03 MC-128-0178 1:54:22 MC-128-0143 2:09:33 MC-128-0143 2:09:33 MC-128-0178 1:54:22 MC-253-0019 2:06:14 MC-253-0037 2:04:42 MC-253-0078 1:52:23 MC-253-0097 1:51:15 MC-253-0115 1:55:39 MC-010-0124 2:08:47 MC-001-0124 2:08:47 MC-001-0127 2:07:44 MC-001-0255 1:44:45 MC-001-0255 1:41:30 MC-001-0367 2:44:47 MC-001-0409 2:13:34 MC-001-0561 1:52:41 MC-001-0646 2:27:42 MC-001-0646 2:27:42 MC-001-0646 2:27:42 MC-001-0646 2:27:42 MC-001-0648 2:27:42 MC-001-0648 2:27:42 MC-001-0648 2:27:42 MC-001-0648 2:27:42 MC-001-0648 2:27:43 MC-001-0649 2:24:18 MC-001-0640 2:24:18 MC-001-0640 2:24:18 MC-001-0640 2:24:18 MC-001-0640 2:24:18 MC-001-0640 2:24:18 MC-001-0745 2:12:23 MC-000-0955 2:21:250 MC-001-0860 2:40:46 MC-020-0055 2:21:250 MC-001-0745 2:12:30 MC-020-0266 2:40:46 MC-020-0055 2:21:250 MC-001-0745 2:12:30 MC-020-0266 2:09:33 MC-020-0266 2:09:34 MC-010-0375 1:49:32 MC-101-0449 2:18:16 MC-101-0043 2:15:05 MC-101-0043 2:15:05 MC-101-0044 2:15:05 MC-101-0049 2:18:16 MC-101-0049	707-671-3424 707-671-3425 707-671-3426 707-671-3428 707-671-3430 707-671-3431 707-671-3431 707-671-3433 707-671-3434 707-671-3435 707-671-3435 707-671-3436 707-671-3437 707-671-3440 707-671-3442 707-671-3442 707-671-3444 707-671-3444 707-671-3445 707-671-3445 707-671-3445 707-684-9071 707-684-9071 707-684-9071 707-684-9071 707-684-9072 707-684-9072 707-684-9072 707-684-9072 707-684-9072 707-684-9072 707-684-9072 707-684-9072 707-684-9072 707-684-9072 707-684-9072 707-684-9075 707-684-9075 707-684-9075 707-684-9075 707-684-9075 707-684-9075 707-684-9075 707-684-9075 707-684-9075 707-684-9075 707-684-9075 707-684-9075 707-684-9075 707-684-9075 707-684-9075 707-684-9075 707-684-9075 707-684-9075 707-684-9076 707-684-9091 707-684-9091 707-684-9091 707-684-9091 707-684-9091 707-7272-55666 707-272-55884 707-272-5884 707-272-58884 707-272-58891 707-272-5896 707-272-5896 707-272-5906 707-671-4677	MC-128-0495 W/B MPM 49.47 - 1 MI S/O MTN. HOUSE R MC-128-0457 W/B MPM 45.61 - 2.8 MI N/O MTN. HOUSE R W/B MPM 45.61 - 2.8 MI N/O MTN. HOUSE R W/B MPM 45.61 - 2.8 MI N/O MTN HOUSE R W/B MPM 45.61 - 2.8 MI N/O MTN HOUSE R W/B MPM 31.66 - 4.3 MI N/O MTN HOUSE R W/B MPM 37.884 MI N/O HIBBARD E/B MPM 33.39 - 1 MI N/O FISH ROC MC-128-0336 E/B MPM 33.39 - 1 MI N/O FISH ROC MC-128-0261 W/B MPM 31.67 - 4.9 MI N/O FISH ROC MC-128-0243 W/B MPM 29.87 - 6.6 MI N/O FISH ROC MC-128-0241 W/B MPM 20.12 - 200FT W/O PHALD G MC-128-0201 W/B MPM 20.12 - 200FT W/O PHALD G MC-128-0201 W/B MPM 20.12 - 200FT W/O PHALD G MC-128-0201 W/B MPM 20.12 - 200FT W/O PHALD G MC-128-0018 E/B MPM 17.834 MI S/E OF CLAR MC-128-0037 W/B MPM 1.84 S - 7.3 MI W/O PHALD G MC-253-0037 E/B MPM 1.84 S - 7.3 MI W/O PHALD MC-253-0037 W/B MPM 5.79 MC-253-0078 W/B MPM 1.84 MPM 22.30-019 W/B MPM 1.85 MC-253-0015 W/B MPM 1.85 MC-253-015 W/B MPM 1.85 MM 1.85

1,202 1,203 1,204 1,205 1,206 11,220 1,221 1,222 1,223 1,223 1,224 1,225 1,226 1,227 1,228 1,229 9,985 9,987 9,988 9,989	69 43 37 41 43 45 49 48 58 59 62 58 541 57 83	2 2 3 7 3 1 3 4 7 2 4 3 3 6 8 8 2 7 7 7	0:02:18 0:09:40 0:02:53 0:04:10 0:06:25 0:00:29 0:02:16 0:00:43 0:02:04 0:05:56 0:05:56 0:05:56 0:01:22 0:01:38 0:02:40 0:40:25 0:29:14 3:07:58 0:59:03 0:47:22	1:11:18 0:52:40 0:39:53 0:45:10 0:49:25 0:42:29 0:47:16 0:49:43 0:50:04 0:47:53 0:53:56 1:00:22 1:03:38 1:00:40 1:35:25 1:10:14 4:04:58 2:03:03 2:10:22	MC 101 752 MC 101 773 MC 101 794 MC 101 950 MC 101 973 MC 162 6 MC 162 13 MC 162 23 MC 162 23 MC 162 202 MC 162 202 MC 162 202 MC 162 223 MC 162 232 MC 162 232 MC 162 232 MC 162 232 MC 162 232 MC 162 020 MC 162 020	nendo 2016 Plan 707-472-7116 707-472-7418 707-472-7564 707-272-5586 707-472-6653 707-472-6653 707-472-6658 707-472-6658 707-472-8083	MC-020-0143	S/B MPM 75.22 S/B MPM 77.39 N/B MPM 77.39 N/B MPM 94.99 N/B MPM 94.97 N/B MPM 97.27 E/B MPM 0.30 W/B MPM 1.38 W/B MPM 1.38 W/B MPM 2.4 W/B MPM 2.4 E/B MPM 20.13 E/B MPM 20.13 E/B MPM 21.1 W/B MPM 22.32 E/B MPM 22.32 E/B MPM 24.99 W/B MPM 24.99 W/B MPM 10.04 W/B MPM 10.24 E/B MPM 17.23 E/B MPM 17.23 E/B MPM 15.91 SAT W/B MPM 15.91 SAT W/B MPM 14.26 SAT
1 225		4						
1,223		3						
1,225		4						
1,226		7						
1,227								
		4						
		3						
9,985								
9,986	41	36	0:29:14	1:10:14				
9,987	57							
9,988			0:59:03					
9,989			0:47:22					
9,990	83	37	1:44:14	3:07:14	MC-020-0121	162-247-5685	MC-020-0121	W/B MPM 12.11 SAT
9,991	75	7	0:05:46	1:20:46	MC-162-0182	162-245-9738	мС-162-0182	E/B MPM 18.24
9,992	58	26	0:13:52	1:11:52	MC-162-0162	162-346-5866	мс~162~0162	E/B MPM 16.25
9,993	59	14	0:23:04	1:22:04	MC~162-0145	162~243-8109	MC-162-0145	w/B MPM 14.40
9,994	54	17	0:37:39	1:31:39	MC-162-0123	162-244-4816	мс-162-0123	w/B MPM 12.35
9,995	57	8	0:34:59	1:31:59	MC-162-0105	162-244-5040	MC-162-0105	W/B MPM 10.42
9,996	53	11	0:20:38	1:13:38	MC-162-0085	162-245-7055	MC-162-0085	W/B MPM 8.40
9,997	58	4	0:01:54	0:59:54	мс-162-0065	162-244-5238	MC-162-0065	W/B MPM 6.46
9,998	57	11	0:22:09	1:19:09	MC-101-0546	162-246-1265	MC~101-0546	N/B MPM 54.6