

DEPARTMENT OF PUBLIC WORKS

Quality, Excellence, Innovation

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DIRECTOR

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MERA Executive Board
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Accounting

Re: Marin County Fire Department Fire Detection Camera Project

Airport

Dear Directors:

Building Maintenance

The County of Marin Communications Division has been tasked with the potential implementation of an IP-Based Remote Camera Network. The cameras are to be located at Pt. Reyes, Mt. Tamalpais, Dickson Lookout on Mt. Barnabe, and Big Rock Ridge and are intended to provide continuous monitoring of high fire hazard areas throughout the County of Marin. These (4) video feeds are to be directed to a dedicated server, located at the Woodacre Fire Station, for monitoring and potential distribution elsewhere. The cameras view 60° and rotate every 5 minutes. It is proposed that the cameras also be available for viewing by the public on the internet on the County Fire web page.

Capital Projects

Certified Unified Program
Agency (CUPA)

Communications
Maintenance

County Garage

Disability Access

The current proposal is to utilize existing MERA and County backhaul Microwave, as well as additional procured equipment, to facilitate a reliable IP connection to all required areas. Due to the age of the equipment at a majority of the intended sites it is necessary to convert the cameras signaling for network transportation. Marin County's backhaul networks carry the vast majority of the County's Public Safety Communications. Due to the sensitive nature of public safety communications specific security precautions will be taken with the fire camera system. Please see figures "A" and "B" at the end of this document for the proposed network topography.

Engineering & Survey

Flood Control &
Water Resources

Land Development

Purchasing

Real Estate

Reprographic Services

The following three charts explain the various options which are available to accommodate this project. Projected vendor delivery time is 4 weeks.

Road Maintenance

Stormwater Program

Transportation &
Traffic Operations

Waste Management

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Minimum Equipment, Labor, and Resource Costs

Essential Equipment, Quantities, and Costs				
Description	Part Number	Cost	Qty	Total
Router, Encryption Capable	CISCO1921-SEC/K9	\$1,017	4	\$4,068
Rack Mounting Kit	ACS-1900-RM-19	\$60	4	\$240
Dual T1 Interface Card	VWIC3-2MFT-T1/E1	\$1,320	3	\$3,960
Single T1 Interface Card	VWIC3-1MFT-T1/E1	\$858	2	\$1,716
Ethernet Switch	WS-C2960+24TC-L	\$777	1	\$777
Router (Spare)	CISCO1921-SEC/K9	\$1,017	1	\$1,017
Dual T1 (Spare)	VWIC3-2MFT-T1/E1	\$1,320	1	\$1,320
Ethernet Switch (Spare)	WS-C2960+24TC-L	\$777	1	\$777
			Total:	\$13,875

Transport Availability, Bandwidth, and Labor Requirements						
Resource	Woodacre	Barnabe	Pt. Reyes	Mt. Tam	Civic Center	Big Rock
Current T1 Availability	6	See Other	7	3	N/A	N/A
Post T1 Availability	4	See Other	6	2	N/A	N/A
Current Ethernet Availability	N/A	N/A	N/A	50 Mbps	See Other	50 Mbps
Post Ethernet Availability	N/A	N/A	N/A	49.5 Mbps	See Other	49.5 Mbps
Total Transport / BW Cost	2 DS1s	See Other	1 DS1	1 DS1 / 500K	See Other	500K
Labor Hours	4	4	4	4	1	2
Total Transport / Bandwidth:						4x DS1 / 1M
Total Labor (additional 5 hours) @ \$135/hr:						24 hrs / \$3,240

Additional Costs and Options for Path Redundancy and Fault Monitoring

Additional Equipment Required for Path Redundancy and System Monitoring				
Description	Part Number	Cost	Qty	Total
Router, Encryption Capable	CISCO1921-SEC/K9	\$1,017	1	\$1,017
Quad T1 Interface Card	VWIC3-4MFT-T1/E1	\$2,706	1	\$2,706
Provision 1921 GDS	Aviat Custom	\$5,000	1	\$5,000
Provision License Node	Aviat Custom	\$5,000	1	\$5,000
Additional Hourly Labor	County Comm Div.	\$135	4	\$540
			Total:	\$14,263

Further Explanation on Costs

As can be seen from the above charts the minimum cost to complete the installation, configuration, and testing at all proposed sites is **\$17,115**. If it is decided that a fully path redundant system, with fault monitoring, is to be purchased the total cost rises to **\$31,378**. The above figures do not include taxes or shipping.

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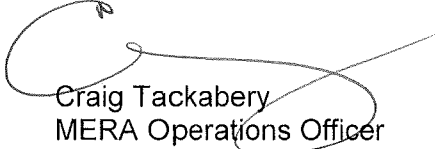
To implement the project as proposed, MERA will need to permanently allocate several of their available T1s. There are available T1s in the system for all locations, with one needing further elaboration. For the link from Mt. Tamalpais to Mt. Barnabe (See Chart 1: Current / Post T1 availability) if this allocation is approved, in conjunction with an impending separate connection need for County Fire's MCC Dispatch Consoles, the MERA system will have a single T1 remaining between Mt. Tamalpais and Mt. Barnabe. This remaining available T1 would still be for MERA future applications.

This project was discussed at the MERA Operational Issues Working Group on September 3, 2014. There was no objection to the allocation of the T1s. With only one T1 remaining from Mt. Tamalpais to Mt. Barnabe, it is recommended that it be reserved for emergency use, and that any further requests for use not be considered.

Three of the sites are under a MERA lease: Pt. Reyes, Mt. Tamalpais, and Big Rock Ridge. Review and possible update of these leases by MERA is needed.

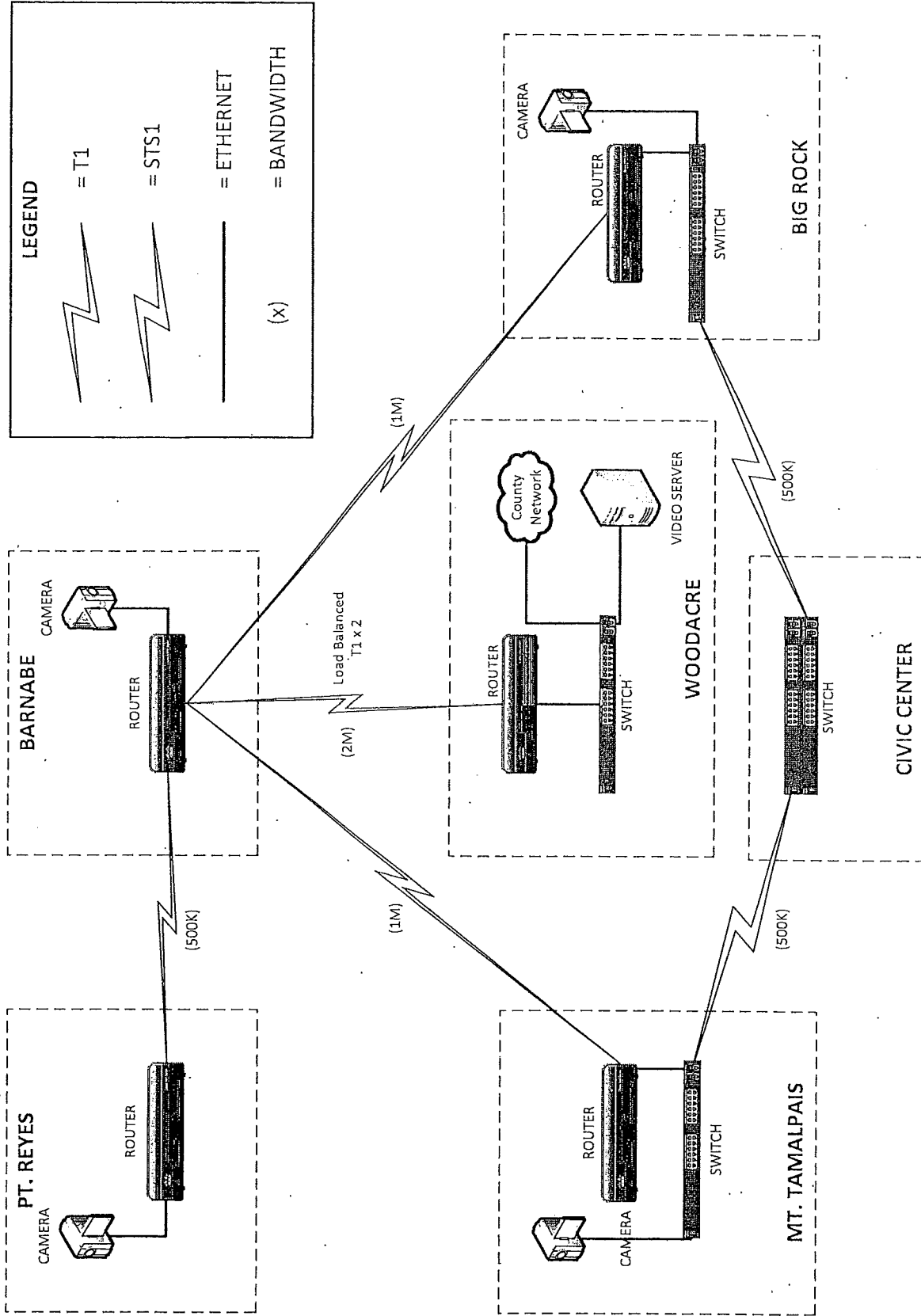
As outlined above, the allocation of the T1s, is recommended.

Very truly yours,



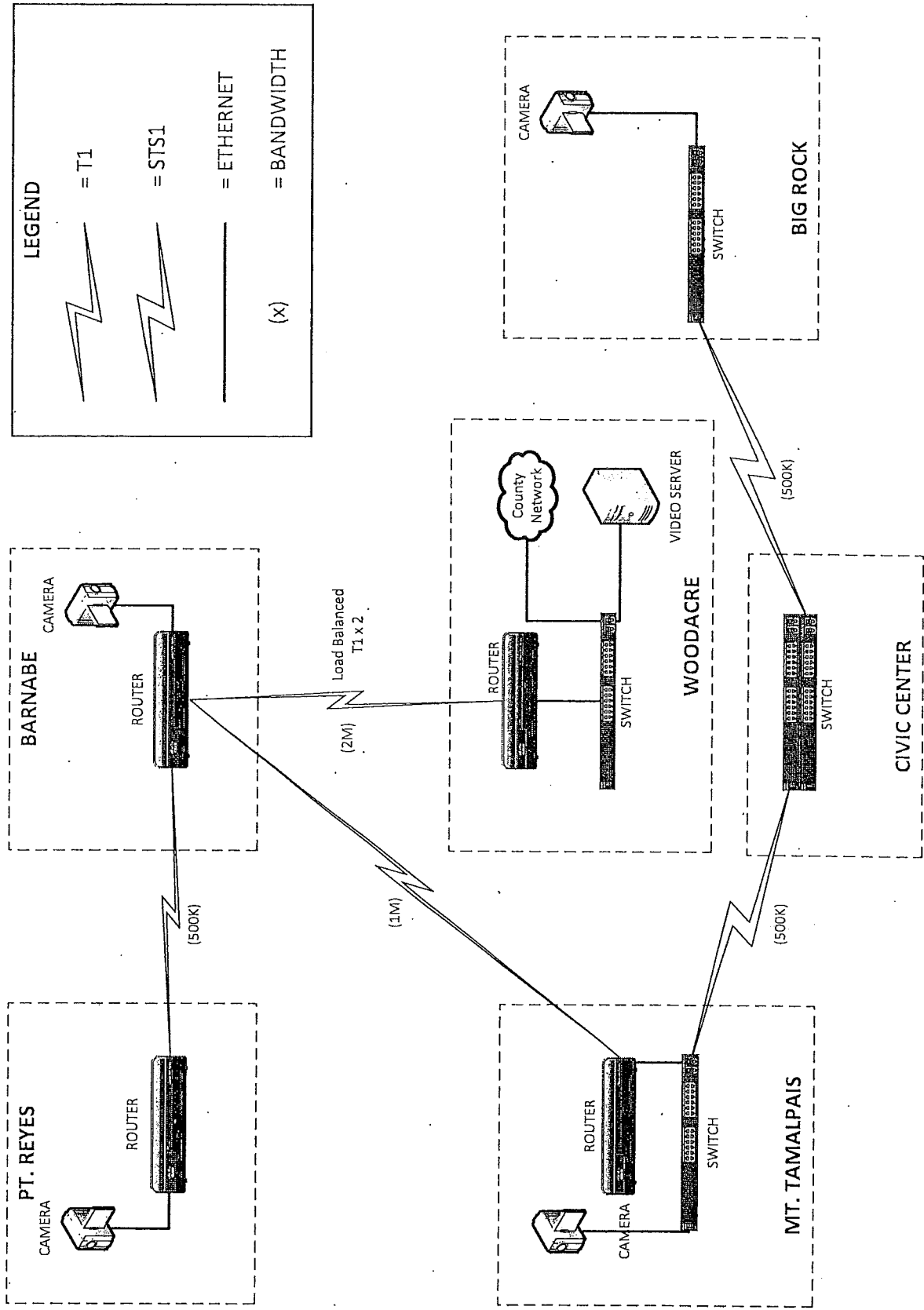
Craig Tackabery
MERA Operations Officer

FIGURE "A"



FULLY REDUNDANT EQUIPMENT AND TRANSPORT REQUIREMENTS TO
SUPPORT RELIABLE / SECURE OPERATION OF COFD FIRE DETECTION CAMERAS

FIGURE "B"



MINIMUM EQUIPMENT AND TRANSPORT REQUIREMENTS TO SUPPORT
 SECURE OPERATION OF COFD FIRE DETECTION CAMERAS