CAPE COD
COMMISSION

Barnstable County
FY27 License Plate Grant Application Submission

Falmouth Amateur Radio Association

CONTACT INFORMATION

Organization Name: Falmouth Amateur Radio Association
Location: Falmouth, MA
Project Manager Name: Thomas Kerrigan
Project Manager Title: Fast Scan Television Working Group Lead
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PROJECT INFORMATION

Name of Project: Pilot Development of Fast Scan Television System

Brief Project Description:
The goal of this pilot project is to test equipment and antennas to determine the best configurations, locations, and operating procedures for a portable wireless video transmission system. The requested funding will be used to purchase the equipment required for the pilot project. It is anticipated that the pilot project will result in an easily deployed, inexpensive portable, wireless video transmission system that can be used to support community and government events, enhance public safety, and connect residents and students with the technology.

How does the project advance one or more 2024 Cape Cod CEDS Key Actions?
This project provides an opportunity for the Falmouth Amateur Radio Association (FARA) to pilot the use of inexpensive, portable wireless video in support of community and government activities. The requested funding will allow FARA to test the technology and implement it on a pilot basis to evaluate equipment configuration and use cases. All of the information learned from field testing the equipment will contribute to the development of an easy to use portable wireless television system, which will serve the greater Falmouth community. The system developed can easily be used across the entire Cape.
This technology will be used to support year-round community activity and civic engagement. Other community organizations will be able to request the help of the FARA to provide a live wireless video feed using this technology. The system can be used to provide live remote video coverage for many

public events such as the Falmouth Road Race, the Cape Cod Marathon, Soldier Ride, and the Falmouth Christmas Parade. The system will also be used to educate members of our community and students on the technology. Local government organizations such as police and fire departments will also benefit from this technology, by enhancing their situational awareness during community events and improving public safety response. They can request FARA assistance in creating temporary live video feeds. It is important to note that this will be done completely on a volunteer basis by members of FARA. The technology does not require a connection to any other infrastructure to operate. The wireless connection is made from transmitter to receiver and can be powered from a battery. The use of this technology could also be especially helpful during emergencies.

The portable wireless video technology will also be used to develop and connect students to educational and training opportunities. FARA conducts multiple community outreach events every year. Some take place in schools like the Falmouth Public Schools STEAM Fair, while others take place in public such as the annual Field Day. FARA also provides licensing classes and test sessions for the public on a regular basis. These opportunities provide valuable lessons to the public in how radio waves are transmitted, how antennas work, and how voice is transmitted over radio. With this new technology we'll be able to take this a step further and explain how video is transmitted using radio waves, the parts of a video signal, and the history of television transmission.

What economic development needs/priorities will this project address?

Cape Cod communities conduct many large events during the tourist season. The availability of inexpensive, easy to deploy live video feeds enhances the events, both for consumers and public safety personnel. Many of these events are significant contributors to the economy of the Cape. For example, the Falmouth Road Race brings approximately 100,000 visitors into Falmouth, which has a significant economic impact. Live video feeds enhance the event for spectators, while improving situational awareness for public safety.

The portable television system further enhances public safety by providing critical temporary infrastructure that can be quickly deployed in the event of an emergency, providing a standalone live video link that can run on batteries, solar, or mains power.

The Cape, in order to further economic development, needs a trained workforce. This project will introduce new training and educational initiatives for people interested in electronics, wireless video transmission and related technologies.

What is the anticipated impact of this project on these economic development needs/priorities? How will this project support Cape Cod's economic resiliency?

As noted above, development of an inexpensive, easily deployed portable wireless video system will enhance local community events that draw thousands of people to Cape Cod, improve public safety during these events and in emergencies, and provide training opportunities for the public and

students alike. The Falmouth Road Race alone brings 100,000 visitors to the Cape. Enhancing the visitor experience at these events will attract additional visitors.

What is the anticipated impact of this project on these economic development needs/priorities? How will this project support Cape Cod's economic resiliency?
As noted above, development of an inexpensive, easily deployed portable wireless video system will enhance local community events that draw thousands of people to Cape Cod, improve public safety during these events and in emergencies, and provide training opportunities for the public and students alike. The Falmouth Road Race alone brings 100,000 visitors to the Cape. Enhancing the visitor experience at these events will attract additional visitors.

Are there any anticipated challenges to implementing the project within the required timeframe of the grant award?
Potential challenges and anticipated mitigation strategies:
Line-of-Sight & RF Interference: Coastal terrain, dense foliage, or structural barriers may degrade wireless video signals. Mitigation: Field test high-gain directional antennas and portable elevated masts.
Supply Chain Delays: Custom or specialized amateur radio equipment may face manufacturing backorders. Mitigation: Initiate equipment orders immediately upon contract execution and utilize temporary loaner gear if necessary.
Field Dependencies: Outdoor testing is subject to weather conditions and volunteer availability. Mitigation: Cross-train multiple FARA operators and establish flexible field-test windows.

Would the funding be used to support a grant program? Yes / No
No

Which municipality or municipalities are supportive of this project? (Optional)

SCOPE OF WORK AND TIMELINE

Task 1

Description: Purchase the equipment for testing.
Deliverable: Provide a purchase receipt for equipment and delivery of television equipment.
Estimated Completion Date: Months 1-2

Task 2

Description: Work with local community and government organizations to demonstrate and explain benefits of live portable television links and actively deploy the technology for these organizations.
Deliverable: Deliver a report of agencies, organizations, and public education sessions completed including a report of demonstrations of the technology.
Estimated Completion Date: Months 5-10

Task 3

Description: Test radio propagation from different locations around Falmouth using different frequencies.
Deliverable: Final report of different locations tested, received signal quality, and best channels for transmit and receive.
Estimated Completion Date: Months 3-6

Task 4

Description: Evaluate available equipment to determine the optimum configurations.
Deliverable: Final report of equipment evaluated and recommended configurations.
Estimated Completion Date: Months 11-12

FY27 LICENSE PLATE GRANT APPLICATION BUDGET Pilot development of Fast Scan Television System

Please upload this sheet as a PDF as part of your application.

Please fill in all budget categories relevant for your proposed project, including a brief description of the funds requested. The total amount requested should equal the total amount noted in the scope of work. All project expenses are provided on a reimbursement basis.

Category	Amount Requested	Match Amount (optional)	Total Project Cost	Budget Narrative
Personnel/Labor from Staffing Plan)	0	0	0	
Fringe Benefits (from Staffing Plan)	0	0	0	
Travel	0	0	0	
Equipment	6290	0	6290	Modulators, amplifiers, antennas, batteries, protective cases, mounting options (Detailed budget is attached)
Supplies	600	0	600	Cable making materials and cable
Contractual/Consulting	0	0	0	
Small Grants Program	0	0	0	
Other	0	0	0	
Total Direct Cost	6870	0	6870	
Indirect Costs*	0	0	0	
Total	6890	0	6890	

*Maximum of 15% of project direct cost unless the project applicant has a Negotiated Indirect Cost Rate Agreement.

2x HiDes 320 Modulator @399/unit- $798

2x HiDes 110 Receiver @119/unit- $238

1x HiDes Shipping Fee - @~$160 + Customs

2x Model 23-14PA 23 cm, 12dBi Gain Antenna @$105/unit - $210

1x Model 23-11A 23 cm, 50 dB, 30/15/4.5 W RF LINEAR POWER AMPLIFIER - $450

1x Model 23-7 23 cm DOWN - CONVERTER- $400

1x Model 23-12B 23 cm, 50 dB, 15/10/2 Watt RF LINEAR POWER AMPLIFIER (900 Mhz option) (cooling Fan option) (PTT option) - $390

2x 12V 30Ah LiFePOBattery - Bioenno Power BLF-1230A PVC Powerbox +chargeroption) @$415/unit- $830 +$50 shipping - $880

2x Samlex Desktop Switching Power Supplies SEC-1235P-M @235/unit - $470

2x 200 Amp Inline DC Power Analyzer and Watt Meters DC-VAWM-200- $37

1xDiamond Antenna Monoband Mobile Antennas NR920 ($59) with Diamond Antenna Magnet Mounts DPK4NM-N (57) - $116 +$10 shipping fee- $126

1x I0JXX 23cm Yagi Antennas 18470-16-23 - $240 +$10 shipping fee- $250

1x Diamond Antenna BC920 (or Comet KP-20 UHF Base Vertical Antennas KP-20) - $227 +$10 shipping fee- $237

2x Fused distribution $180

1x Pelican 1654 Waterproof 1650 Case with Yellow and Black Divider Set (Black) $534

1x Godox Heavy-Duty Steel Roller Stand (Large, 14.8') - $330

Cables, Connectors, Crimp Tools - $600

Total: ~$6,590
+$300 for shipping, customs, and incidentals

$6,890

FY27 LICENSE PLATE GRANT APPLICATION STAFFING PLAN - Pilot development of Fast Scan Television System

Please upload this sheet as a PDF as part of your application.

For each individual participating in this project, please share their name, title, and associated hourly rate, number of hours. In addition, please list the tasks that each staff member/volunteer will participate in. The staffing plan should be uploaded at the end of the application.

Staff Name and Title	Hourly Rate	Number of Hours	Total Project Cost	Amount Requested	Match Amount
Thomas Kerrigan	$0.00	50	$0.00	$0.00	$0.00
William Plikaitis	$0.00	50	$0.00	$0.00	$0.00
Ralph Swenson	$0.00	50	$0.00	$0.00	$0.00
Lawrence Gray	$0.00	50	$0.00	$0.00	$0.00
Henry Brown	$0.00	50	$0.00	$0.00	$0.00
Total Personnel	5				
Fringe (enter fringe rate as percent):	N/A				
TOTAL:	0				

Staff Name and Title	Tasks/Responsibilities
Thomas Kerrigan	Voulenteer Team Lead / Ham Radio Operator - Schedule meetings, generate reports, help with testing and outreach, manage equipmer
William D. Plikaitis	Voulenteer / Ham Radio Operator - Attend meetings, help with testing, outreach, and education
Ralph Swenson	Voulenteer / Ham Radio Operator / Tower & Equipment Specialist - Attend meetings, help with testing, outreach, and education
Lawrence Gray	Voulenteer / Ham Radio Operator - Attend meetings, help with testing, outreach, and education
Henry Brown	Voulenteer / Ham Radio Operator - Attend meetings, help with testing, outreach, and education