

# Wireless Telecommunications Committee Annual Report

## *Yellowstone National Park*

*For the period of October 1, 2009 to September 30, 2010*

The purpose of the Telecommunications Committee is to:

1. Receive and address requests for wireless service
2. Ensure proposals adhere to the wireless communications plan
3. Make recommendations to the Superintendent regarding any action to be taken.

Public comments were collected and considered throughout the scoping and planning process for the Wireless Communications Services Plan Environmental Assessment (EA). In lieu of public meetings, the NPS provides this annual report, available to the public, which includes; a list of proposals received/reviewed by the Wireless Telecommunications Committee (WTC), recommendations from the WTC to the Superintendent, action taken by the Superintendent, and a summary of each proposal.

The Committee consists of four representatives from Park Planning, Resource Management, and Telecommunications and is led by the Supervisory Telecommunications Specialist.

	Proposals Rcvd.	Date Received	Recommendation	Superintendent
1	Norris Temperature Logger/Monitor	12/14/2009	Approve	Approved
2	YVO Norris Geyser Basin Seismic Monitor	12/14/2009	Approve	Approved
3	YVO Portable Webcam	12/14/2009	Approve	Approved
4	Cisco Wireless DOI LAN to MHS Garage	1/21/2010	Approve	Approved
5	Cisco Wireless DOI LAN to MHS Garage 4' Transceiver	4/20/2010	Deny	Denied
6	Cellular Courtesy Proposal	7/7/2010	Approve	Approved
7	Grant Fuel Master Cell Booster	7/28/2010	Approve	Approved
8	Emergency Vehicle Cellular Signal Booster	8/9/2010	Approve	Approved
9	Verizon Network Extender (Personal, IP based cellular communications signal transmitter)	9/16/2010	Approve	Withdrawn
10	YVO NE Entrance Seismic Monitoring Station	10/19/2010	Approve	Approved

Recommended:

Bret De Young

Wireless Committee Representative

Signature

Date

Approved:

Colin Campbell

Superintendent

Signature

Date

## **Descriptions of Proposals Received:**

### **1 - Norris Temperature Logger/ Monitor - Approved**

Install a wireless temperature logging network at Norris Geyser Basin. The system consists of up to ten remote data loggers which will not be visible to the public. Data will be sent once a day to USGS computer network servers. The data will then be displayed on the Yellowstone Volcano Observatory (YVO) webpage. This wireless temperature logger network was included in the "Volcano and Earthquake Monitoring Plan for the Yellowstone Volcano Observatory, 2006-2015.

The wireless temperature logger system allows the efficient and timely distribution of temperature data through the Internet. By increasing the download of temperature data to a daily frequency rather than monthly, the temperature data can be used effectively for monitoring purposes. The data will be readily available through the internet. The wireless network decreases the frequency for YNP personnel to be off boardwalk in dangerous thermal areas.

### **2 - Yellowstone Volcano Observatory (YVO) Norris Geyser Basin Seismic Monitor - Approved**

This project involved the installation of a 12 inch directional antenna near the Norris Geyser Basin Museum building, and a 12 inch Yagi antenna near the Qwest repeater building in the administrative area of Norris. These antennas would allow data to be sent from a newly installed seismograph in the Norris Geyser Basin Museum storage room.

No explicit hydrothermal seismic monitoring seismograph exists in Yellowstone and it is expected that this project would provide key information to determine the interactions between geothermal activity, regional tectonism, and magmatic processes.

### **3 - YVO Portable Webcam - Approved**

This project permits the use of a portable solar-powered webcam system consisting of a tripod, a cellular antenna and modem, a camera and solar panels (<120 watts). The webcam system would be used in front country areas in accordance with the Yellowstone Wireless Communications Services Plan. An image would be uploaded to the USGS every 5 minutes. Images would be made public no more frequently than once per hour. Backcountry use would only occur if required for public safety or critical resources monitoring purposes, and with concurrence from Yellowstone National Park management

A portable webcam system allows YVO staff, both inside and outside of the park, to monitor geological features of concern for safety or resource preservation reasons. Such a system could also help in calming public fears during earthquake swarms or episodes of hydrothermal explosions. It could keep YVO staff abreast of current activity and could potentially document critical geological activity. Non-emergency use would be in accordance with the YNP Wireless Communications Services Plan.

### **4 - Cisco Wireless 001 Local Area Network (LAN) to MHS Garage 2' Transceiver - Approved**

This project will install Cisco Wireless LAN network bridges between Building #38 (Telecommunications) and the Mammoth Fleet Maintenance Building. Each building would have a 2-foot open mesh parabolic dual plane antenna, lightning protection, and cabling installed on the building. Additional radio equipment would be installed inside of each building.

This project will improve available network bandwidth to the garage and offices, which will allow improved VOIP (Voice Over Internet Protocol) phone service and faster network access. The objective is to reduce the number of leased Qwest telephone circuits effectively lowering the monthly phone bill for the park.

### **5 - Cisco Wireless 001 LAN to MHS Garage 4' Transceiver - Denied**

This project would install Cisco Wireless LAN network bridges between Building #38 (Telecommunications Bldg – Mammoth) and the Fleet Maintenance Building (Mammoth). The project would require a 4-foot solid parabolic directional antenna, lightning protection, and cabling installed on the existing antenna located behind Building #38 with additional radio equipment inside the building. An additional 4-foot solid parabolic directional antenna,



lightning protection, and cabling would be installed above one of the garage bay doors on the Fleet Maintenance Building with additional radio equipment installed inside the building.

This project will improve available network bandwidth which will allow improved VOIP (Voice Over Internet Protocol) phone service and faster network access. When finished, Yellowstone National Park will be able to reduce the number of leased Qwest telephone circuits which will lower the monthly phone bill for the park.

The WTC explained in their recommendation to the Superintendent to deny the project that the proposed large (four foot diameter) parabolic dish would have a detrimental visual impact when installed on Building 38 which is located in the Fort Yellowstone Historic District.

## **6 - Cellular Courtesy Proposal - Approved**

In accordance with the Yellowstone Wireless Communications Services Plan, the park will take the following actions as the first phase of the Cellular Courtesy initiative. Post courtesy signs at four locations on the boardwalk near the Old Faithful Geyser, four locations on the boardwalk near the Mammoth Terraces, and one location near the Albright Visitor Center. The park will publish guidelines in the Yellowstone Today newspaper beginning with the spring edition. Publish information in Yellowstone Today newspaper informing visitors where they likely can expect to have cellular communications service. Publish cellular courtesy and cellular service information on the "Plan Your Visit" menu on the nps.gov Yellowstone page. Include cellular courtesy information in Interpretation staff training and solicit comments from visitor centers regarding the effectiveness of the plan.

Actions regarding courteous use of cell phones and other devices were discussed within the Yellowstone Wireless Communications Services Plan.

## **7 - Grant Fuel Master Cell Booster - Approved**

This project would replace an obsolete bag phone with a fixed cellular box, amplifier and Yagi antenna, at the Grant Marina FuelMaster site. The fixed cellular box and amplifier would fit inside the existing FuelMaster pedestal. The Yagi antenna will be mounted 2 feet away on the railing of the retaining wall in the administrative area of the Grant Marina.

New technology is needed to allow the Grant Marina FuelMaster to transfer data with the Mammoth Garage.

## **8 - Emergency Vehicle Cellular Signal Booster - Approved**

Install in-vehicle cell phone wired signal boosters in all Yellowstone NPS ambulances and select NPS patrol vehicles to extend the cellular communication range for emergency responders within Yellowstone National Park.

Beneficial impacts would occur for park visitors by increasing the ability of authorized emergency personnel to make contacts during an emergency. Enhanced visitor safety would occur during Emergency Medical Service runs by allowing quicker access to responding medical personnel. Improved communication with cooperating agencies during law enforcement activities is an additional benefit.

## **9 - Verizon Network Extender - Withdrawn**

This project would be for the installation and testing of a Verizon Wireless Network Extender (Personal, IP based cellular communications signal transmitter) at a developed location with NPS WAN connectivity and without any current cellular coverage such as Madison, NE Entrance, Lake or Norris. The test would measure usability and network data usage. The Verizon Network Extender uses an internet connection to provide expanded service to Verizon Wireless handsets, allowing users to receive a cellular signal in an area up to 5,000 square feet that currently does not have, or has marginal cell service. The devices are typically used in an indoor/office setting. They are not designed for outdoor operation. The device will only accommodate three simultaneous calls at a time.

This test is to determine whether the device is usable and does not interfere with existing VOIP, ROIP and Data network traffic. These Verizon Wireless Network Extenders could be a valuable tool for use in Incident Command situations, such as fire camps.

The WTC's recommendation to the Superintendent for approval of testing did not include permanent or temporary deployment in areas that had not been approved for cellular service in the preferred Alternative C of the Wireless Communications Services Plan finding of No Significant Impact (FONSI). The proposal was subsequently withdrawn by the submitter, whose intent was to provide cellular service in government buildings, for government use, in areas where cellular service was not available.

#### **10 - YVO Northeast Entrance Seismic Monitoring Station**

This project would allow for the installation of a seismic station near the Northeast Entrance of Yellowstone National Park. The project was discussed on page 4 of the FONSI for the Wireless Communications Services Plan.

The seismic station was designed to have minimal impact, and would be located approximately 400 meters north of the entrance station outside of proposed wilderness. A solar panel and 8 inch Yagi antenna would be mounted near the seismometer on a 6 foot tall, 6 inch diameter wood post.