



Parkwide Communication Data Network (CDN)

Why does Yosemite need a new communication system?

Effective communications are critical to Yosemite National Park's success in protecting park resources and delivering a range of services to park visitors. This exchange of information requires a reliable and cost-effective telecommunications network. Currently, Yosemite relies on outdated and unreliable communication equipment that performs poorly or fails in bad weather and does not share a single "backbone" technology to transmit information. Many developed areas of the park—Wawona, Crane Flat, Hodgdon Meadows, Hetch-Hetchy, and Tuolumne Meadows—are serviced by old copper telephone wires; employees therefore rely on time-consuming dial-up modems for computer network and internet access.

Unfortunately, the existing system cannot be upgraded efficiently or effectively. Yosemite's local service provider has limited bandwidth capabilities and no cost-effective way to provide the necessary bandwidth.

What is a CDN?

A Communication Data Network (or "CDN") could provide Yosemite with a uniform communication platform for computer LAN data, radio, video security, telephones, burglary and fire alarms, traffic data, and telemetry. This CDN would be comprised of point-to-point microwave radio links that create a high bandwidth network among six major areas within the park: El Portal, Yosemite Valley, Wawona/South Entrance, Tuolumne Meadows/Tioga Pass, Hetch Hetchy Entrance, and Big Oak Flat Entrance/Hodgdon Meadow.

How will a new CDN improve services for park visitors and staff?

Benefits of a new Communication Data Network include:

- Enhanced employee and visitor safety by improving Park-wide security video systems, panic and intrusion alarm systems, and fire alarm systems to the Emergency Communications Center. (Implements recommendations in *Yosemite National Park Security Survey Findings and Recommendations Report for Fee Collection Facilities and Personnel*, Federal Protective Service, Region 9, 2001.)
- Improved park-wide digital radio coverage, reducing "dead zones" in backcountry areas.
- A private branch exchange (PBX) phone system covering all park areas. This system uses extensions to dial within the park, rather than dialing out.
- Improved remote sensing to gather resource management data, including water flows, air quality, avalanche, fire behavior, wild land/prescribed fire smoke travel, remote weather data, wildlife telemetry, etc.
- Extended Supervisory Control and Data Acquisition (SCADA)-- a computer monitoring and control process that allows real time data acquisition for maintenance personnel, resulting in faster responses to utility breakdowns.
- Increased bandwidth for remote data terminals allowing text dispatching. Allows text messages to be exchanged between the Emergency Communications Center and emergency vehicles on patrol or traveling to an emergency.
- Improved access from remote areas to the Emergency Communications Center centralized Records Management System database, which stores information for Law Enforcement, Structure Fire, Wildland Fire, and Resource Protection and Management

Where would the CDN be, and what would it look like?

The network would consist primarily of microwave radio links, uniting six geographic areas of the park (or "campuses"): El Portal, Yosemite Valley, Wawona/South Entrance, Tuolumne Meadows/Tioga Pass, Hetch Hetchy Entrance, and Big Oak Flat Entrance/Hodgdon Meadow. Within those areas, a second technology, such as wireless bridges or fiber-optics, could provide campus level networking.

Existing communication sites in this network include Mt. Bullion (state of California), Wawona Point, Hennes Ridge (near the lookout), El Portal (Maintenance area), Turtleback Dome, Sentinel Dome, Sentinel repeater, Yosemite Valley, and Crane Flat lookout. To connect currently un-served areas of the park, new sites would be located at or near Wawona, Big Oak Flat Entrance Station, Hetch Hetchy Entrance Station, and May Lake Junction. Passive reflectors require no commercial power, and would be used to relay signals from Eagle Peak (Stanislaus NF comm. site above El Portal) and Big Oak Flat (Rockefeller Grove Rd.)

Network equipment would vary at each site, but would consist of poles or lattice towers, a power source, and equipment shelters. The alternatives include mitigations to avoid impacts and preserve scenic and cultural resources, for example, by maintaining a minimal footprint, and applying finishes that blend in with the surroundings. At some locations, select trees may be removed to achieve the necessary line-of-sight, or to be able to minimize tower or pole heights. Depending on location (to accommodate for surrounding topography and vegetation), towers would range from small poles and lattices (16-25 ft) to a few larger towers (100 ft lattices). Equipment shelters would range from small cabinets to larger (200 sq ft) walk-in shelters (Crane Flat lookout). Dish antennas would vary from 4 to 12 feet in diameter.

What is the anticipated schedule for this project?

Conduct Public Scoping	November 12 - December 26, 2008
Develop Preliminary Designs	November 2008 – May 2009
Prepare Environmental Assessment	January - December 2009
NPS Development Advisory Board (DAB) Review	December 2009
Public Review of Environmental Assessment	January 2010

Comments can be submitted at public meetings, by mail, fax, email, and through the Planning, Environment, and Public Comment (PEPC) commenting system. A link to project information is posted on the park's website at www.nps.gov/yose/parkmgmt/cdn.htm. You may submit written comments via:

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Visit online: www.nps.gov/yose/parkmgmt/cdn.htm

