



# CHPERS

## California Highway Patrol Enhanced Radio System Project Status 2009





# CHPERS

## CHPERS MISSION

*The CHPERS project is a five year effort which will provide for the development and implementation of an enhanced statewide radio communications system in support of CHP's mission to provide safety, service and security to the public.*

*The CHPERS project will employ modern methodologies to enhance and leverage the existing infrastructure, meet the future operational needs, as well as meet the goals to provide interoperability at the local, regional and federal level.*





## Major CHPERS Project Activities

- 1** Upgrade of radio vaults and antenna towers at existing remote radio sites, typically located on mountain tops. While these upgrades are occurring, CHPERS will also separate the primary and the blue, allowing the blue to act as a tactical frequency for use during emergency events.
- 2** Upgrade of radio equipment in all CHP area offices, communications centers, inspection facilities, air operations, etc, statewide.
- 3** Implement the new frequency plan and cut-over to new frequencies that offer full duplexing and auto-repeat capabilities. Cut-over will effect radios in remote sites and CHP office locations as well as in the patrol vehicles.
- 4** Procurement and implementation of a completely new Consolidated Patrol Vehicle Environment (CPVE) which will allow for enhanced communications capabilities from patrol vehicle to officer, to communications centers, and to allied agencies.
- 5** New portable radios for field operations supporting communications over greater distances.



## 1. Status of Remote Radio Site Upgrades and Separation of the Blue (Tactical) Frequency

The CHPERS team has completed site surveys for remote radio sites and individual site solutions have been developed for nearly half the State to date. These solutions detail what equipment and frequency changes must be made by DGS.

In June, DGS will begin making radio equipment upgrades in both remote sites and Area Offices.

A new statewide frequency plan has been developed and will be implemented in a color by color approach. The first color to be “cut-over” will be the Stockton white. All remote radio sites, Area Offices and vehicles within the Stockton region must be prepared before the cut-over can occur, which is planned for October 2009.



*The existing radio vault located at Barnes Grade.*



*A new pre-fabricated radio vault with superior security, stability and life expectancy.*

## Upgrading deteriorating radio infrastructure

The CHPERS project has identified 23 sites with insufficient or deteriorating infrastructure. The facilities at these sites will be replaced with newer, more secure solutions. This includes replacement of aging radio vaults with newer buildings and replacement of wooden poles with modern antenna towers.





## Remote Radio Sites

Each division has sites that will be upgraded and specific ones will be chosen to support the separation of the tactical (blue) frequency.

	Total	Primary + Blue	Primary Only
Valley	31	21	10
Central	20	12	8
Northern	47	32	15
Coastal	34	21	13
Inland	34	19	15
Border	36	23	13
Southern	28	7	21
Golden Gate	42	19	23
<b>TOTALS</b>	<b>272</b>	<b>154</b>	<b>118</b>



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## 2. CHP Facilities (Radio) Upgrades

The CHPERS team has been contacting Communications Centers and Area Offices to obtain information and photographs of the existing radio equipment to aid in planning for the enhancements and upgrade for each location.

Each office will have new, upgraded low band base stations as well as new 700/800 MHZ equipment installed. Additionally, locations with existing VHF High Band and UHF equipment will be upgraded.

CHPERS will also be enhancing equipment at inspection and scales facilities.



*The radio tower at Hoadley Peak supports antennas as well as microwave dishes.*



## 3. The new CHP Frequency Plan

The CHPERS project will cut-over to the new frequencies using a color by color approach. All frequencies will be cut-over between October 2009 and June 2011, beginning with Valley Division. The following schedule shows projected cut-over dates for the colors in Valley Division.

COLOR		CUT-OVER WEEK
1	Stockton - White	10/5/2009
2	Sacramento - Green	11/16/2009
3	Sacramento - Gold	11/23/2009
4	Sacramento - Black	11/30/2009
5	Truckee - Grey	12/7/2009
6	Chico - Brown	12/14/2009
	<b>Valley Division Complete</b>	



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## Reprogramming patrol vehicles to prepare for the new CHP Frequency Plan

As part of the enhancement to the radio system, the CHP radio frequencies will change statewide to allow for duplex and auto-repeat operations. Duplex capability will allow dispatchers to listen and talk simultaneously with other officers. Auto-repeat function will allow officers to better monitor radio traffic from field units to dispatch.



Beginning in June, and completing in October 2009, every CHP vehicle control head in the state will be programmed with one of nine new profiles. (Eight Divisions and the Academy) These profiles will allow for uninterrupted change from old to new frequencies as each color is cut-over. The profiles will be phased out as the new CPVE equipped vehicles are distributed to the field. CPVE introduction to the field is expected to commence in early 2010.



## 4. New Consolidated Patrol Vehicle Environment (CPVE)

The CHPERS project will design and procure an entirely new environment for the patrol car. The radios, computer, and scanner will be relocated to the trunk area to maximize space in the cockpit. The following steps are being undertaken to implement the new CPVE:

- |                              |                 |
|------------------------------|-----------------|
| • Specifications Development | Completed 7/07  |
| • RFP Release                | Completed 9/07  |
| • Evaluations/Demonstrations | Completed 5/08  |
| • Contract Award             | Completed 10/08 |
| • Compliance Testing Begins  | June 2009       |
| • Production Begins          | December 2009   |
| • Pilot                      | January 2010    |
| • Training and Deployment    | March 2010      |

Once the pilot has been completed, a roll-out schedule will be published to identify when each command can expect to receive the new vehicles. Based on current production schedules, the statewide roll-out is expected to take approximately 34 months.



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## 5. New Portable Radios

The new E.F. Johnson portable radios offer communications over greater distances (up to 1-2 miles) and will be deployed to all field commands in conjunction with the CPVE.

The new E.F. Johnson portable radio has 512 channels compared to 16 channel on the current portable radio.

- Provide better in-building penetration
- Provide additional channel capacity
- Provide interoperability in the 800 MHz frequency band
- Capable of accessing some Regional Communications System (RCS)
- Adjustable power levels to reduce battery consumption





## Other CHPERS Project Activities

### **700/800 MHz Project**

Plan and implement the 700/800 MHz technology for increased interoperability

### **Project Liaison**

Collaborate with Counties, Allied Agencies and other entities also performing radio upgrade projects to maximize efficiency of radio sites and equipment.



**CHPERS**

## **Project Contacts**

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