MONTEREY COUNTY PLANNING COMMISSION

Meeting: February 29, 2012 **Time:** 10:30 a.m.	**Agenda Item No.: 5**
Project Description: Workshop to receive a preliminary presentation of a proposal to develop a Next Generation (NGEN) radio telecommunications system to replace and upgrade regional public safety wireless telecommunication systems. The project would require the separate approval of a number of wireless telecommunication facilities on sites located throughout the unincorporated areas of Monterey County.	
Project Location: Generally in the Lewis Road, Laguna Seca County Park, Pebble Beach and Carmel Valley areas.	**APN:** Several
Planning File Number: REF100041	**Owner:** Several **Agent:** Monterey County Emergency Communications Department
Planning Area: North County Area Plan, Greater Monterey Peninsula Area Plan, Carmel Valley Master Plan	**Flagged and staked:** No
Zoning Designation: : Several	
CEQA Action: Not Required for Workshop	
Department: RMA - Planning Department; Emergency Communications Department	

RECOMMENDATION:
Staff recommends that the Planning Commission receive the report.

PROJECT OVERVIEW:
The County of Monterey, on its behalf and for all local agencies participating in the Next Generation (NGEN) radio system, is administering a project to replace and upgrade regional public safety wireless communication systems. Members of the NGEN radio system include the County of Monterey, Cities of Carmel-by-the-Sea, Del Rey Oaks, Gonzales, Greenfield, King City, Marina, Monterey, Pacific Grove, Salinas, Seaside, Sand City and Soledad, Monterey Regional Fire Protection District, North County Fire Protection Districts, Spreckels Volunteer Fire Company and Big Sur Volunteer Fire Brigade. Governance of the NGEN radio system is facilitated through the Emergency Communications User Advisory Council (ECUAC). The project is managed by the Emergency Communications Department.

The NGEN project is an upgrade and consolidation of radio communication systems used by its member agencies. Currently, member agencies operate a number of separate systems with redundant service; the attached informational package provided the Communications Department illustrates the location of radio sites that are currently in use. This figure covers thirty three known sites that are used within the County and is not intended to be a comprehensive list, as additional sites may also be used some member agencies. The current NGEN system design has been optimized to meet a number of competing criteria including performance, frequency spectrum and cost constraints. Over the past year our team has also made a number of design changes in order to mitigate anticipated regulatory requirements from the General Plan and the Zoning Ordinance. Any future changes to the system design require approval from the project team and our vendor in order to ensure that our performance criteria are not waived. One of the key performance aspects is a guarantee of a radio coverage service area by the system vendor. The current design consists of fifteen radio sites as displayed on the maps contained in the informational package.

The NGEN system efficiently spreads sites throughout the County to match service levels with population density and terrain. The NGEN System would consolidate some of the existing sites and would result in the need for fewer sites than are used today. However, as each site supports all NGEN members, these sites have more equipment and in some cases require larger tower structures than existing sites.

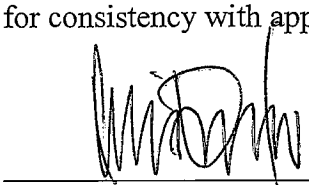
The five sites which require consideration by the Planning Commission include the following:

1. Huckleberry Hill (Del Monte Forest/Pebble Beach)
2. Pinion Peak (Carmel Valley)
3. Laguna Seca (Highway 68 – Greater Monterey Peninsula Area)
4. Lewis Road (North County)
5. Roberts Knoll (Carmel Valley)

The location of the five sites is indicated in the attached package. An additional site known as "Treebones," though planned for a future date, is not yet designed. The other sites are outside of the jurisdiction of the Planning Commission or do not require a Use Permit or Coastal Development Permit.

The goal is to build, test and cutover from existing systems to the operational NGEN system before the January 1, 2013 FCC deadline. Our latest approved project schedule has system cutover beginning in late February 2013 and a final acceptance date of May 27, 2013. We have applied for a six-month waiver from the FCC deadline. Our waiver was submitted to the FCC in December and has been released for a public comment period.

Staff from the RMA – Planning Department has been collaborating with staff from the County Information Technology Department and their consultants on the preliminary review of the project for consistency with applicable requirements from the Zoning Ordinance and the General Plan.



Luis A. Osorio, Senior Planner
(831) 755-5177, osoriol@co.monterey.ca.us
February 7, 2012

cc: Front Counter; Planning Commission; Wanda Hickman, Planning Services Manager; Luis Osorio, Senior Planner; Dan Lister, Assistant Planner; Carol Allen, Senior Secretary; DeAnna Hilbrants, Emergency Communications Department; Landwatch; The Open Monterey Project; Planning File PLN100573

Attachments: Exhibit A Informational Package Provided by the Applicant

This report was reviewed by Wanda Hickman, Planning Services Manager

MONTEREY COUNTY

Emergency Communications Department
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February 16, 2012

Development Project Application
NGEN Public Safety Radio System

This document provides a general plan and overview of the NGEN project and proposed site development for use by the County of Monterey Planning Department. Completion of the NGEN planning process requires approvals from the Planning Commission for the following radio sites:

- Huckleberry Hill – Coastal Development Permit, File Number PLN100516 (REF100041)
- Pinion Peak – Use Permit, File Number PLN100515 (REF100041)
- Laguna Seca – Use Permit, File Number PLN100502 (REF100041)
- Lewis Road – Use Permit, File Number PLN100501 (REF100041)
- Roberts Knoll – Use Permit, File Number PLN100514 (REF100041)
- Treebones – Coastal Development Permit, No File Number

At this time, we are preparing application materials, including required technical reports for these sites. The Treebones site may be excluded from our application and covered by a separate future application.

Background

The County of Monterey, on its behalf and for all local agencies participating in the Next Generation (NGEN) radio system, is administering a project to replace and upgrade regional public safety wireless communication systems. Members of the NGEN radio system include the County of Monterey, Cities of Carmel-by-the-Sea, Del Rey Oaks, Gonzales, Greenfield, King City, Marina, Monterey, Pacific Grove, Salinas, Seaside, Sand City and Soledad, Monterey Regional Fire Protection District, North County Fire Protection Districts, Spreckels Volunteer Fire Company and Big Sur Volunteer Fire Brigade. Governance of the NGEN radio system is facilitated through the Emergency Communications User Advisory Council (ECUAC). The project is managed by the Emergency Communications Department.

The NGEN project is an upgrade and consolidation of radio communication systems used by its member agencies. Currently, member agencies operate a number of separate systems with redundant service areas.

Figure 1 shows the location of radio sites that are currently in use. This figure covers thirty three known sites that are used within the County and is not intended to be a comprehensive list, as additional sites may also be used some member agencies.

Figure 1: Existing Radio Sites

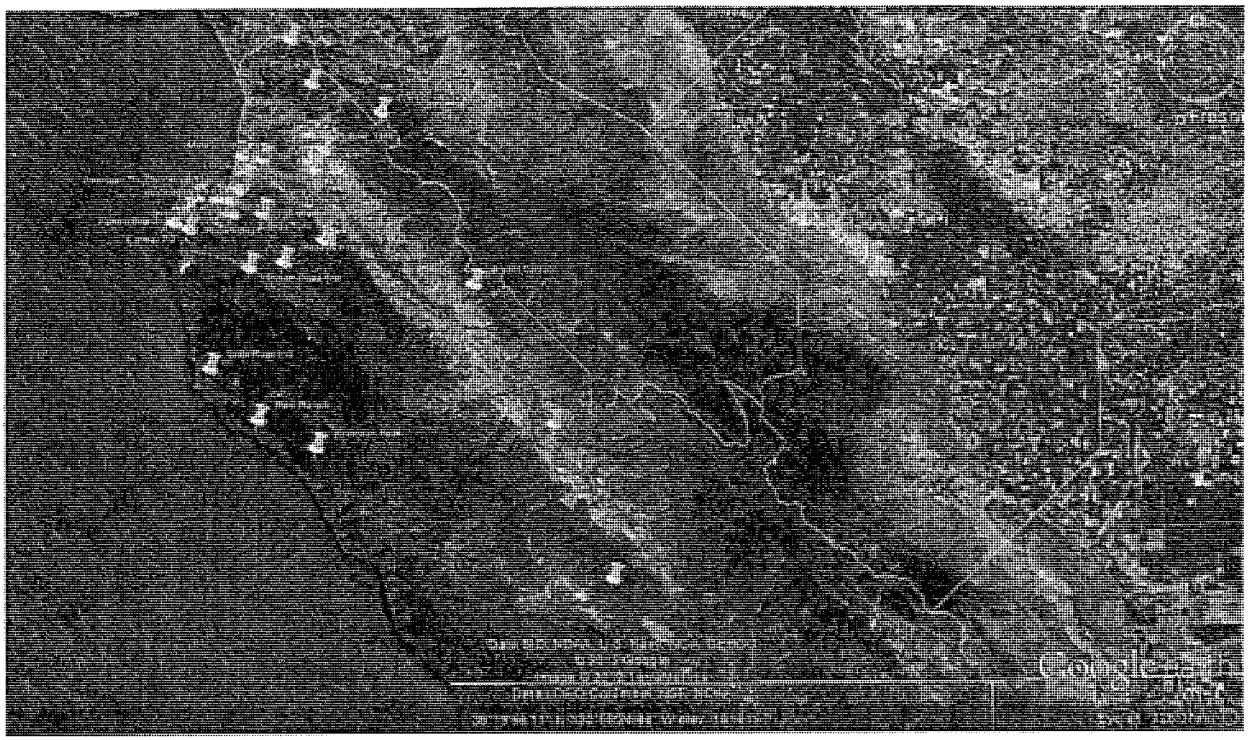


Figure 2 below shows the locations of existing radio sites in the higher population density Salinas and Monterey Peninsula regions.

Figure 2: Radio Sites in Salinas and the Monterey Peninsula

In April 2006, a "Monterey County Operational Area Emergency Communications System Strategic Plan" was completed and presented to the County Board of Supervisors. One of the major drivers for this plan was to address a mandate from the Federal Communications Commission (FCC) that requires all existing radios systems to operate in a new "narrowband" format by January 1, 2013. The plan recommended regionalization of all local public safety radio systems. Local agencies formed an NGEN Task Force as a subcommittee to the ECUAC, an existing governing body of the regionalized Public Safety Answering Point (PSAP) and dispatch center.

As the next phase of the strategic plan, a Request for Proposal (RFP) #9997 was issued seeking consultants to develop a functional design, study of requirements for a new regional system, and provide assistance with drafting of an RFP for the design / build of a next generation radio system. After a detailed evaluation process of that RFP, the NGEN Task Force recommended accepting the bid of DELTAWRX as the lowest, most-responsive bidder for the RFP Consulting Services from the four responses received. That Agreement was approved by the Board of Supervisors on May 22, 2007.

Throughout 2007 and 2008, the NGEN system requirements were developed based on user needs for a regional system. The economic downturn in 2008 caused significant disruption to the project and called into question the overall financial viability of a regional system and commitment of member agencies. On May 12, 2009 a "Memorandum of Agreement re Next Generation Radio System Joint Governance and Financing" (the "NGEN Financing Agreement") was executed. This agreement included a commitment from all of the member agencies to fund a regional radio system.

On June 1, 2009, The County released RFP #10122 soliciting turnkey proposals for the design and implementation of the NGEN radio system. Several proposals were received and evaluated. The selection team conducted an extensive evaluation process, which included site visits, oral presentations and a best and final offer solicitation. On December 7, 2010 the County Board of Supervisors approved the negotiated contract for the NGEN Regional radio system with an award to Harris Corporation.

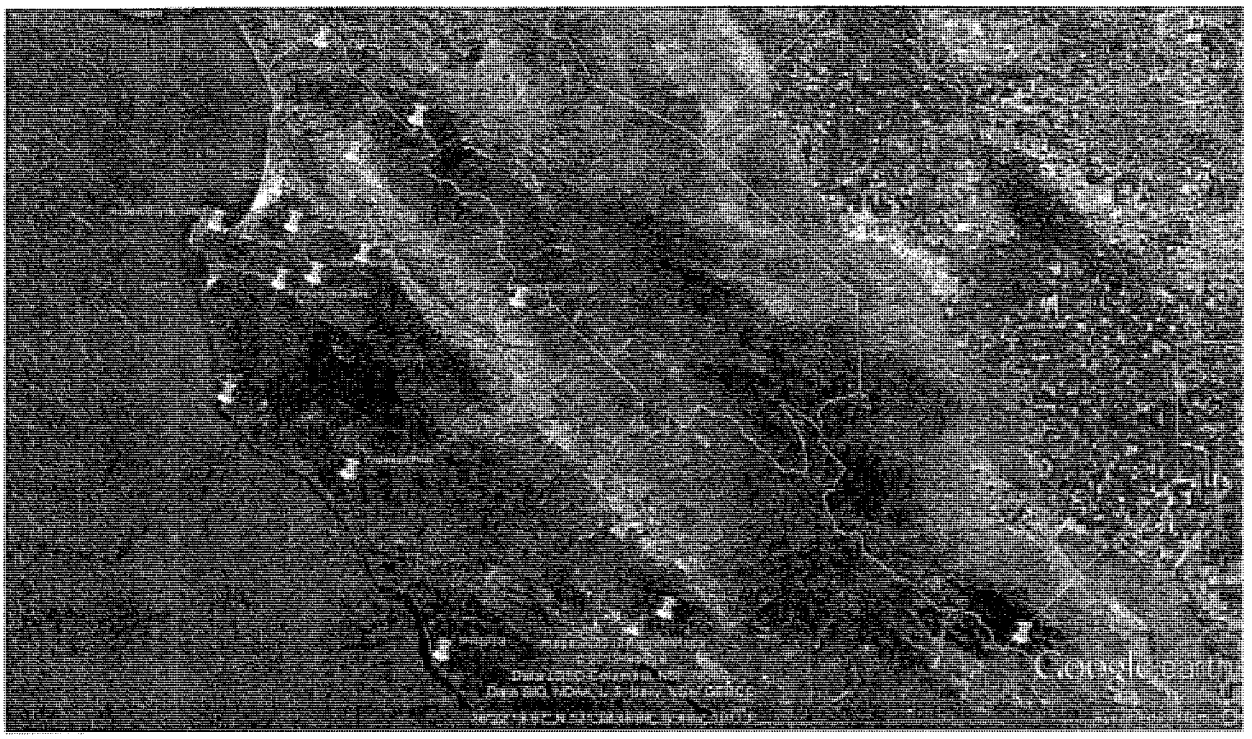
The last year has been spent optimizing the system design to meet performance and contract criteria. The final detailed system design was accepted by NGEN Oversight Committee and approved by the Emergency Communications Department of December 22, 2011. Prior to acceptance, preliminary construction designs were submitted to the Planning Department and site walks were conducted for five of the sites requiring planning permits. The Treebones site design has not been completed and the site has not been reviewed by the Planning Department.

NGEN System Design

The current NGEN system design has been optimized to meet a number of competing criteria including performance, frequency spectrum and cost constraints. Over the past year our team has also made a number of design changes in order to mitigate anticipated planning challenges. Any future changes to the system design require approval from the project team and our vendor in order to ensure that our performance criteria are not waived. One of the key performance aspects is a guarantee of a radio coverage service area by the system vendor. The current design consists of fifteen radio sites as displayed on

Figure 3.

Figure 3: NGEN System Sites



The NGEN system efficiently spreads sites throughout the County to match service levels with population density and terrain. As can been seen, there are many fewer sites in the NGEN System than are used today and most of the sites represent re-use of existing sites. However, as each site supports all NGEN members, these sites have more equipment and in some cases require larger tower structures than existing sites.

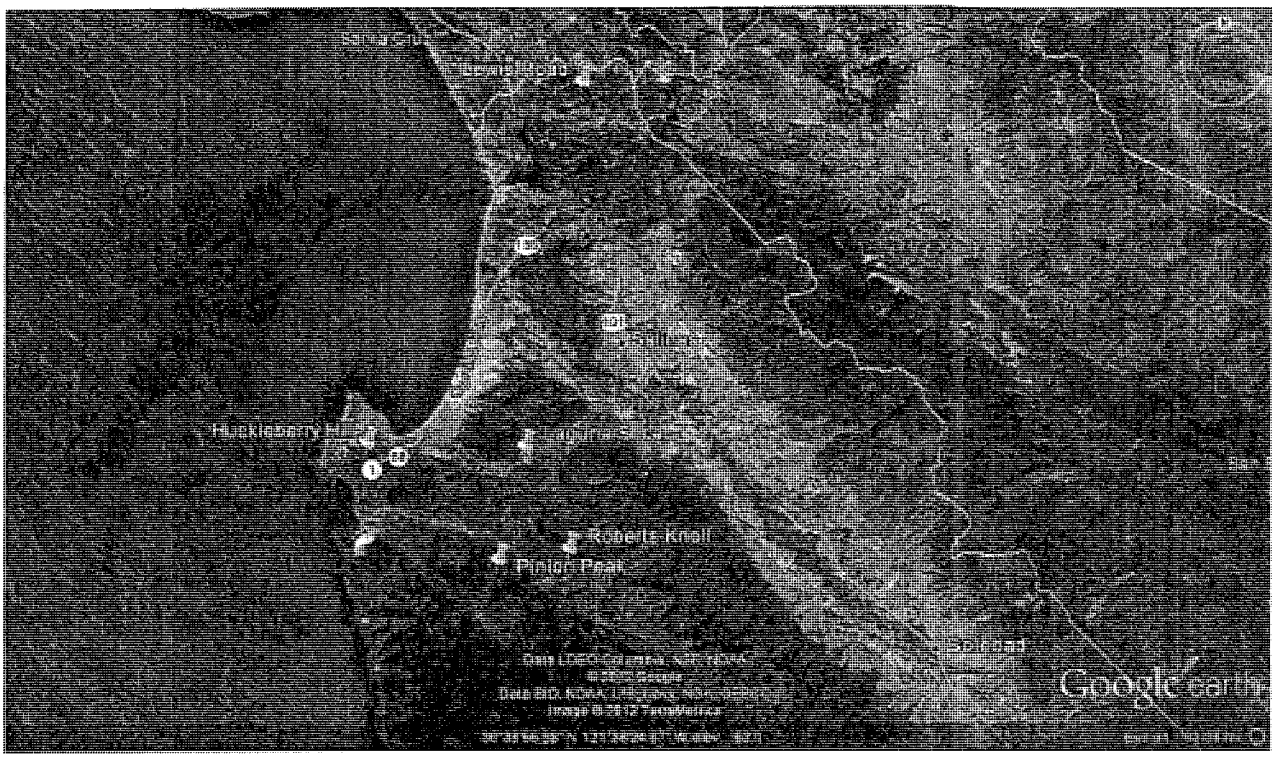
Our goal is to complete the build and test of the new radio sites and cutover from existing systems to the operational NGEN system before the January 1, 2013 FCC deadline. Our latest approved project schedule has system cutover beginning in late February 2013 and a final acceptance date of May 27, 2013. We have applied for a six-month waiver from the FCC deadline. Our waiver was submitted to the FCC in December and has been released for a public comment period.

The remainder of this application provides specific information for each of the sites requiring approval by the Planning Commission. The sites covered in the following order:

1. Huckleberry Hill
2. Pinion Peak
3. Laguna Seca
4. Lewis Road
5. Roberts Knoll

Treebones, though planned for a future date, is not yet designed. The other nine sites are either outside of the jurisdiction of the Planning Commission or do not have a scope of work that requires a Use or Coastal Development Permit. Figure 4 shows the location of the five sites presented in this application. All five are existing sites; each providing service to one or more NGEN members.

Figure 4: Sites Requiring Planning Approval

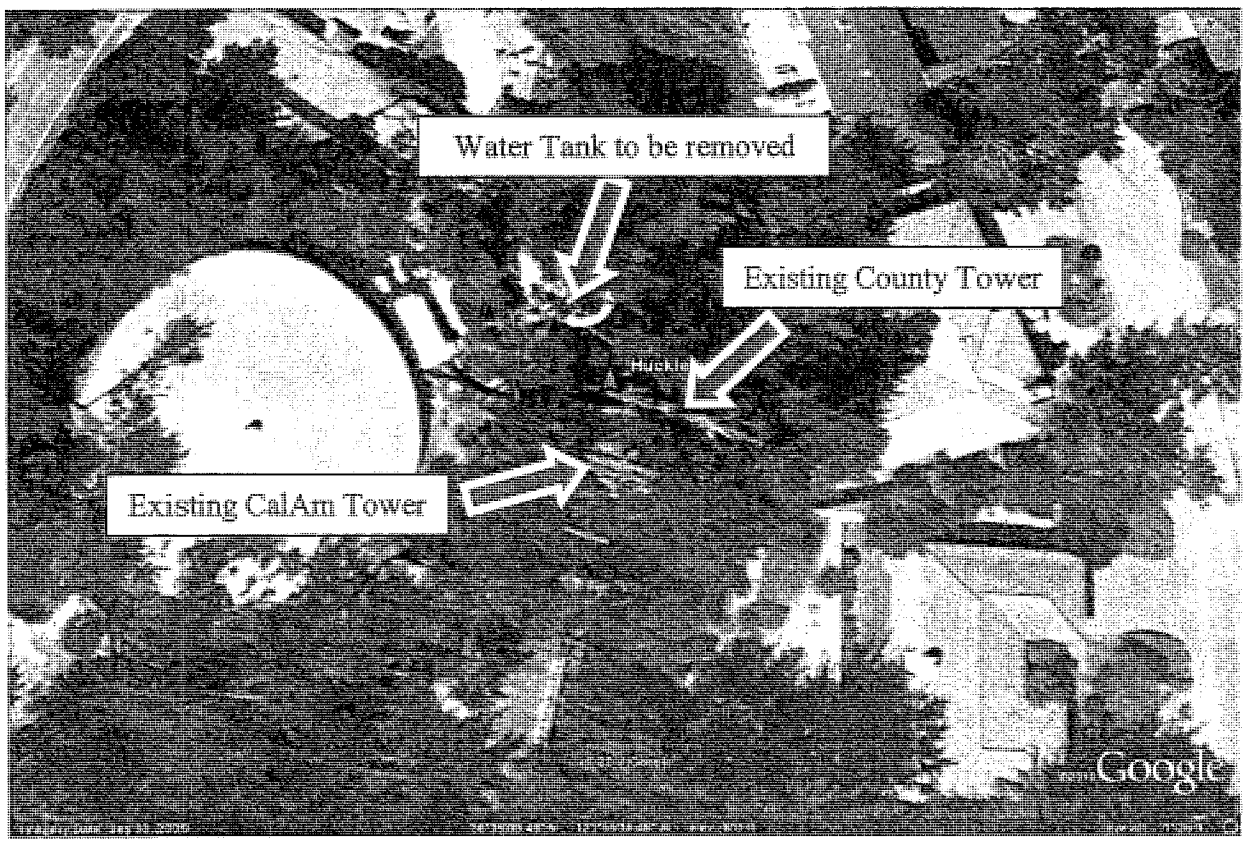


Huckleberry Hill

Overview

Huckleberry Hill is located at 4041 Sunset Lane in Pebble Beach. The site is primarily a water operations location for the California American Water Company (CalAm). This property currently has a telecommunications facility owned by the County serving several NGEN members, as well as a utility, commercial providers, and other government agencies. CalAm also owns a telecommunications facility on the property that provides service for its operations as well as several commercial providers. In addition, PG&E has a telecommunications facility on the same property. The County and CalAm have agreed to consolidate the existing telecommunications facilities into a single site. The agreement includes removal of a water tank from the property and installation of a new tower and equipment shelter. Equipment from the existing towers will be moved to the new tower and the old towers, once all tenants are removed, will be decommissioned. Figure 5 shows an aerial view of the site layout – the blue triangle is the proposed location of the new tower.

Figure 5: Huckleberry Hill Layout



The existing towers are 80' tall and are slightly visible above the tree-line. The new proposed tower will be significantly taller in order to accommodate all of the radio systems, as well as to establish line of site microwave connections to other towers in the NGEN system. The NGEN system is built to operate in the absence of commercial power, and as such cannot rely on telephone or fiber optic connections between sites.

This application for a Coastal Development Permit at Huckleberry Hill contains the following sections:

- Site Selection and Alternatives Analysis
- Coastal Development Permit supplemental application form
- Design Approval Request form
- Site Plans
- Technical Reports
    - Geotechnical Report
    - Archaeological Report
    - Biotic Survey
    - Forest Management Plan
    - NEPA Supplement (for reference only)
- Visual Simulation
- Construction Management Plan
- Co-location Plan
- Noticing Requirements

Site Selection and Alternatives Analysis

The Huckleberry Hill radio site provides service to the Monterey Peninsula region as well as Pebble Beach, Carmel-by-the-Sea and western portions of Carmel Valley.

Huckleberry Hill is one of five sites in the system that uses a technology called "simulcast" in order to maximize coverage and spectrum efficiency. Simulcasting allows our scarce frequency resources to be reused at several radio sites but requires precise engineering to ensure that signals from the sites do not interfere with each other. There are engineering limits to the number of sites in a simulcast cell and the spacing allowed between them in order to function properly. The design required one site to provide coverage over a large area of the Monterey Peninsula. The only way to provide this coverage is from a site along the mountain ridge that separates Pebble Beach from the Cities of Monterey and Pacific Grove. Huckleberry Hill was selected due to its location on this ridge and because it is an existing County site.

[To be supplemental with additional technical analysis when available]

Coastal Development Permit supplemental Application Form

[We do not have this yet]

Design Approval Request Form

[We do not have this yet]

Site Plans

Preliminary site plan with elevations attached as file "Huckleberry Hill - PCD.pdf"

Fire notes have not yet been incorporated.

Note: the current site plan proposes a 120' pine tree type tower. We are currently conducting engineering work for the tower to support all required antenna systems. Preliminary feedback is that the pine tree tower may not work, as too many branches need to be removed. Final design is still pending.

Technical Reports

Geotechnical Report – has been completed but not yet submitted by contractor

Archaeological Report – incomplete, contractor has not been hired

Biotic Survey – incomplete, preliminary report conducted for NEPA

Forest Management Plan – incomplete, contractor has been hired

NEPA Supplemental – incomplete

Visual Simulation

Report in process

Construction Management Plan

In process

Co-location Plan

Co-location is an important consideration at the Huckleberry Hill site. The site currently hosts several communications towers, each with commercial tenants. Part of the goal with development of this site is to consolidate all of the separate initiatives into one well managed and secure facility. As part of a proposed agreement with the County, CalAm will remove a water tank and assist with migration of its other tenants to a single facility. This facility will be managed by both CalAm and the County under the terms of a new lease that will replace the County's existing lease for the site.

The amount of additional capacity for future co-location at this site is unclear at this time. There is sufficient space on the property to accommodate equipment shelters, but antenna locations on the tower are expected to be limited. Analysis is currently underway to evaluate different tower construction options. This application will present options for the Planning Commission to consider.

Noticing Requirements

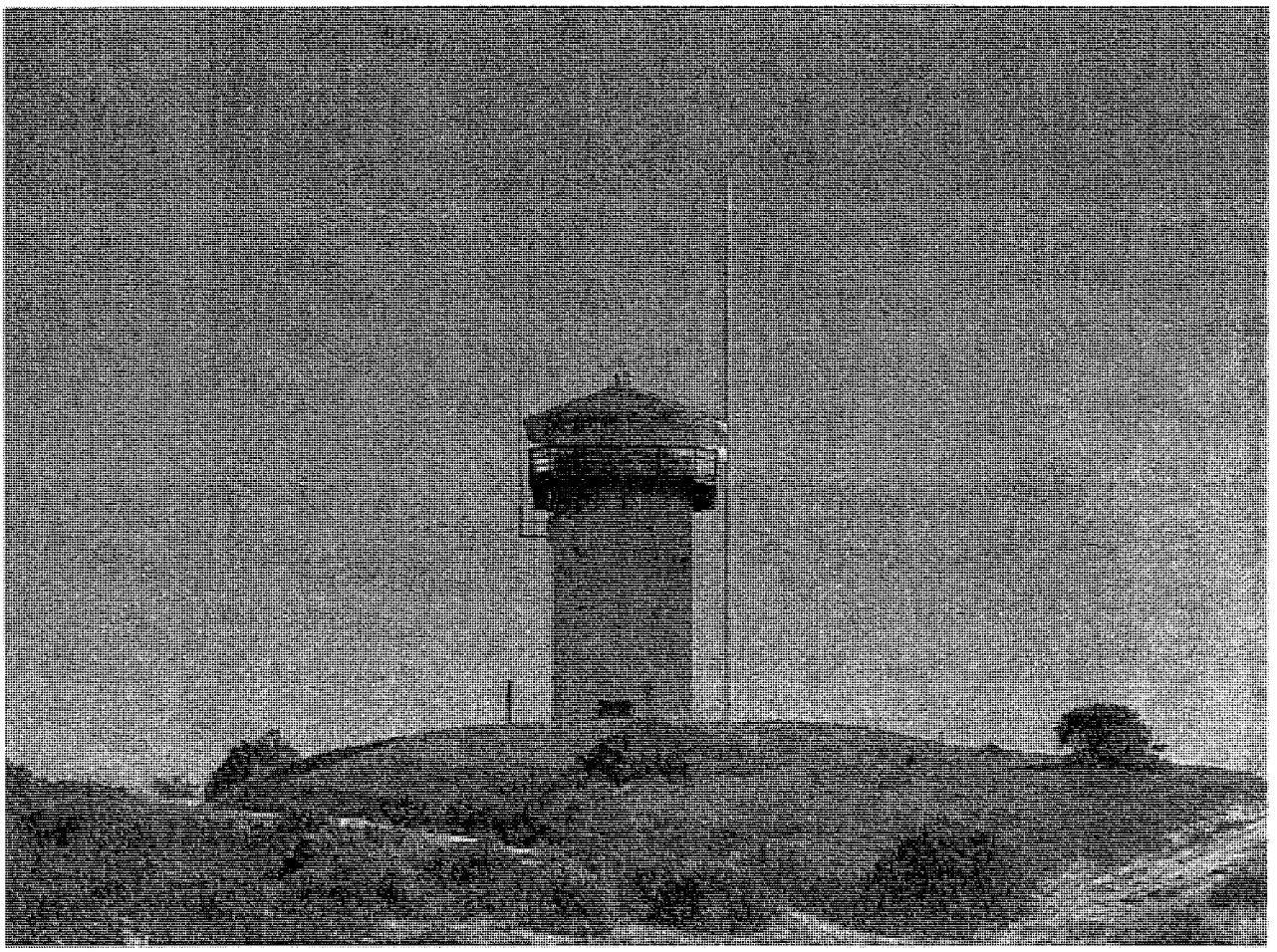
TBD

Pinion Peak

Overview

The Pinion Peak radio site is located in the Santa Lucia Preserve on the southern side of Carmel Valley. Pinion Peak is also known as Penyon, Pinyon and Peñon Peak and is the location of the Sid Ormsbee Lookout tower. The site currently providers radio service the Preserve and Monterey County Regional Fire District. Existing radio systems are located within the lookout tower building and antennas are mounted on the outside of the lookout tower.

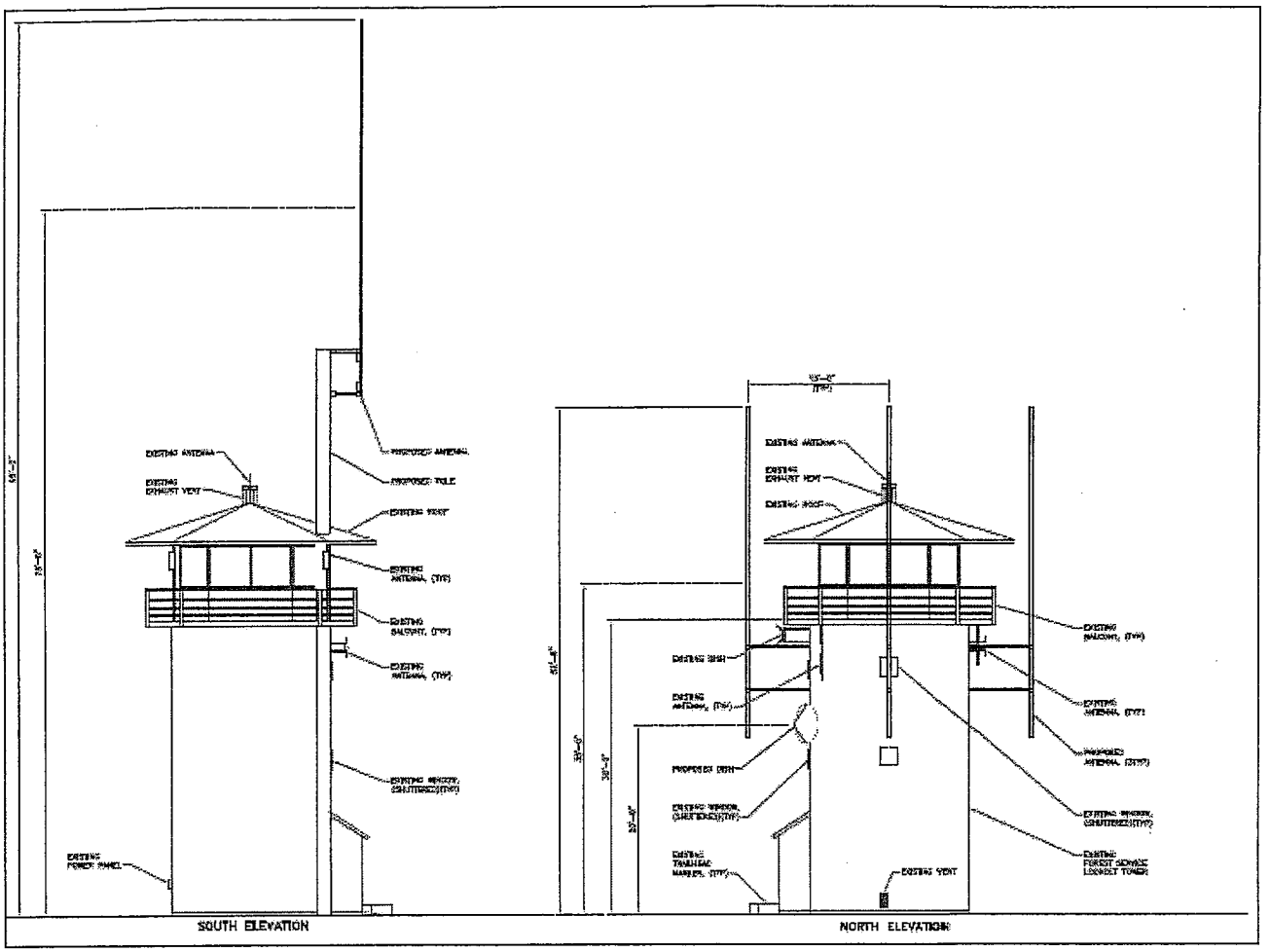
Figure 6: Initial Simulation of Proposed Site at Pinion Peak



The initially proposed design was to install a 100' steel lattice tower next to the lookout building and to modify the building to accommodate the required equipment. As this site can be seen from many areas in Carmel Valley, the project team recognized this as a potential viewshed issue. In addition, the land is protected by a nature conservancy and as a result our goal was to minimize impact to the soil. The team reviewed the minimum performance requirements with the system vendor. After this review, we established that the transmit antennas may be located at as low at 35' and the receive antenna must be at least 40' above the transmitters, giving a minimum height of 75' for the receive antenna. Based on these criteria, the team evaluated the structure of the building and developed a completely building integrated construction that would minimize the visual impact from the valley floor and also limit impact to the conservancy land.

A preliminary construction design for the building integrated solution is illustrated in Figure 7. The receive antenna is shown in the diagram on the left and the transmit antennas are shown in the right diagram.

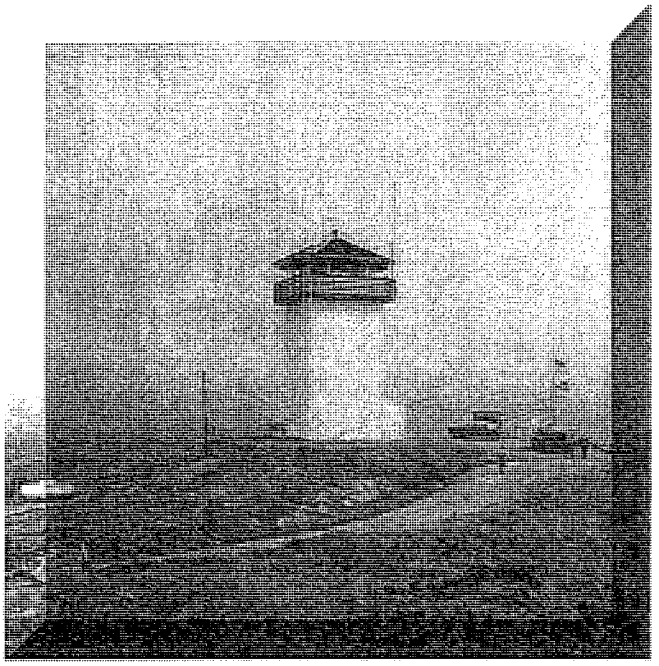
Figure 7: Building Integrated Antenna Design



Subsequent to this second design, we discovered that the Sid Ormsbee Lookout tower is eligible for historic preservation and therefore has protection under the National Historic Preservation Act. Based on this finding, the team reviewed a number of design alternatives with local historians. At this time, no consensus has been reached between all stakeholders and several design alternatives will be presented to the Planning Commission.

It is acknowledged that the lookout tower already has antennas mounted on it and has long been used as a communications facility. A historical photo (Figure 8) clearly shows a large monopole antenna mounted to the top of the building. However, the height of the new receive antenna caused concern to some historians that desired that it be removed from the building and moved as far away as possible. We discussed fake tree type towers, monopole and flagpoles as options to hold the receive antenna. The team concluded that a thin monopole with enough capacity to hold a single antenna and the weight of one person to perform maintenance would be considered at three potential locations at the site.

Figure 8: Vintage Photo of the Sid Ormsbee Lookout

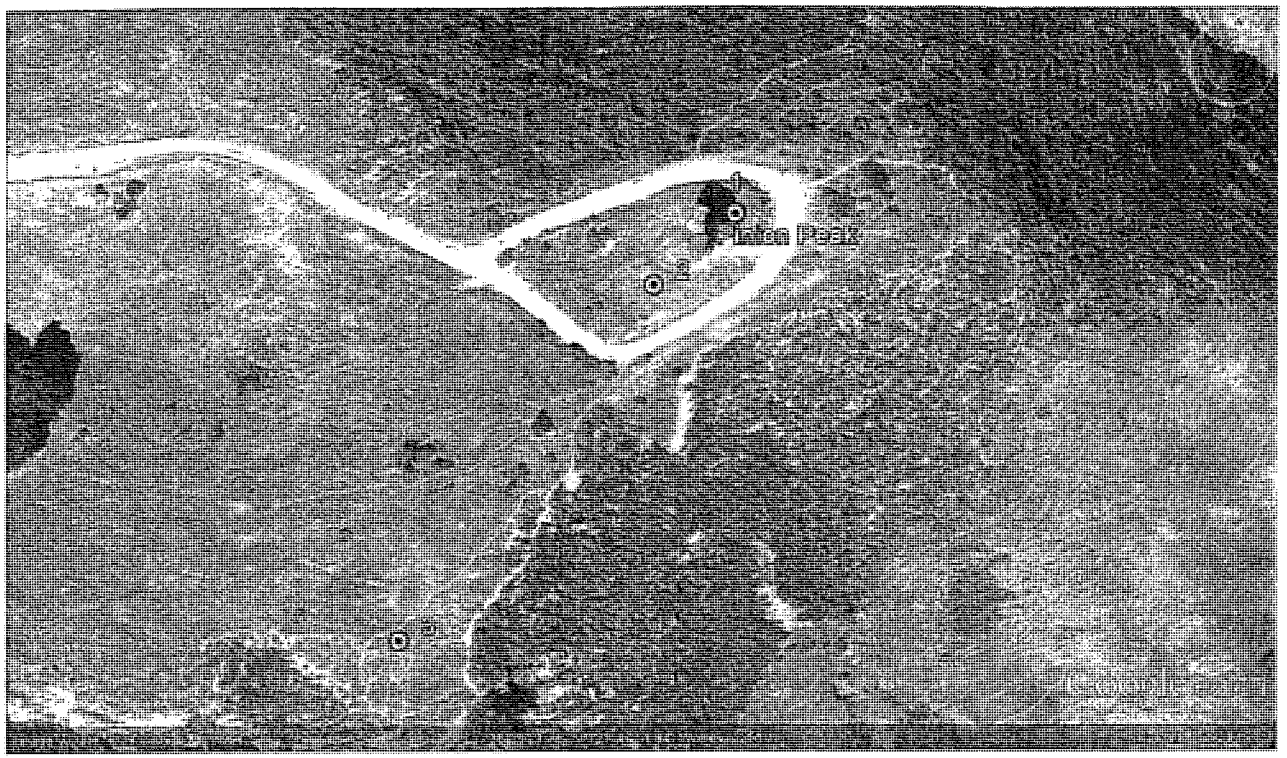


The most preferable location for the monopole is near the front of the lookout. This position provides the best coverage performance as it is nearest to the primary service area (Carmel Valley) and is in the location of an abandoned buried propane tank. As such, the land in this area has already been disturbed and our subsurface work would have minimal additional impact. The second most preferred location is directly behind the lookout. This is the only other area within the allowed lease space that can accommodate a monopole. All other areas have sloped terrain or elevations that have unacceptable coverage performance. The second location provides acceptable performance, but disturbs new ground new the lookout.

The third location is approximately 270' southwest of the lookout. This location is the actual apex of Pinion Peak and is outside of the allowed lease area. This is the most desirable location from a perspective of historic preservation, as it is farthest from the lookout tower. However, the location causes a decrease in coverage as it is farther from the service area. A taller monopole would be required to make up for this performance loss – the exact specifications of which would require approval of the system vendor and have not been determined. In addition, this location causes more disturbance of conservancy land and also creates a viewshed issue for properties within the Santa Lucia Preserve that can see Pinion Peak, but cannot see the lookout tower. The three alternate locations are shown in **Error! Not a valid bookmark self-reference.**.

The County is currently working with the Santa Lucia Preserve, Santa Lucia Conservancy and San Carlos Ranch Club on this project. Our preliminary agreement is that the County will pay rent for use of this property and that this rent will be used to support rehabilitation and maintenance of the site. The Sid Ormsbee Lookout currently is in need of new paint, a new roof and minor repair. The building is not currently used for any other function than telecommunications. There is no public access and the interior of the building is not suited for any other purpose.

Figure 9: Pinion Peak Site and Monopole Location Alternatives



This application for a Use Permit at Pinion Peak contains the following sections:

- Site Selection and Alternatives Analysis
- Design Approval Request form
- Site Plans
- Technical Reports
    - Geological Report
    - Archaeological Report
    - Historic Assessment
    - NEPA Supplement (for reference only)
- Visual Simulation
- Construction Management Plan
- Co-location Plan
- Noticing Requirements

Site Selection and Alternatives Analysis

Pinion Peak provides service to the Carmel Valley region as well as southern outskirts of Salinas and undeveloped areas patrolled by the Sheriff's Office. Like Huckleberry Hill, Pinion Peak is one of five sites in the system that uses a technology called "simulcast" in order to maximize coverage and spectrum efficiency. Pinion Peak is also the anchor site, for which all the other sites in the system are designed around. Simulcasting allows our scarce frequency resources to be reused at several radio sites but requires precise engineering to ensure that signals from the sites do not interfere with each other. There are engineering limits to the number of sites in a simulcast cell and the spacing allowed between them in order to function properly.

Though Pinion Peak is the system anchor site, there was some flexibility based on the terrain to investigate alternative locations.. There were no identified site alternatives on the south side of Carmel Valley as there is very limited development in this area and no areas with sufficient coverage of the valley. Pinion Peak is at a location in Carmel Valley where the population base changes from east-west orientation to more of a north-south orientation, via a right turn in the canyon mirrored by Carmel Valley Road as it goes inland. The only other location to cover the valley is from a ridgeline on the opposite side of the valley from Pinion Peak. Four potential site locations were identified and listed as "Roberts Knoll", "Comcast", "Carmel Valley 1" and "Carmel Valley 2" as shown in Figure 10.

Roberts Knoll is another existing County site that is known to provide complimentary as well as overlapping coverage with Pinion Peak. Comcast is an abandoned radio site just northwest of Roberts Knoll on the same ridge. Carmel Valley 1 is the next site developed along the same ridge. Carmel Valley 2 is not a developed site, but a location that was selected based on its potential to provide coverage to the desired service areas. Coverage models were prepared for each of these site alternatives. In each case simulcast parameters were re-optimized to limit interference on the system. Roberts Knoll was found to provide the best coverage of the four alternatives, but less coverage than is provided by the desired site at Pinion Peak. Roberts Knoll is also a site in the NGEN system and is discussed later in this application.

[Include propagation models and discussion comparing coverage from Pinion Peak and Roberts Knoll]

Figure 10: Pinion Peak Site Location Alternatives

Design Approval Request Form

[We do not have this yet]

Site Plans

Preliminary site plan with elevations attached as file "Pinion Peak - PCD.pdf"

Fire notes have not yet been incorporated.

Note: the current site plan proposes a monopole in an outdated position as well as a propane generator that has been removed from the design. Updated site plans will show the three potential locations for placement of the monopole.

Technical Reports

Geological Report – incomplete, contractor has not been hired

Archaeological Report – incomplete, contractor has not been hired

Historic Assessment – incomplete, contractor has been hired

NEPA Supplemental – incomplete

Visual Simulation

Report in process

Construction Management Plan

In process

Co-location Plan

This site is not planned to support co-location at this time.

Noticing Requirements

TBD

Laguna Seca

Overview

The Laguna Seca radio site is located on County property overlooking the Mazda Raceway at Laguna Seca. The existing County site is located across the road next to an office of the Parks Department. The existing site does not have capacity to accommodate the new system design.

This application for a Use Permit at Laguna Seca contains the following sections:

- Site Selection and Alternatives Analysis
- Design Approval Request form
- Site Plans
- Technical Reports
    - Geological Report
    - Archaeological Report
    - NEPA Supplement (for reference only)
- Visual Simulation
- Construction Management Plan
- Co-location Plan
- Noticing Requirements

Site Selection and Alternatives Analysis

TBD

Design Approval Request Form

[We do not have this yet]

Site Plans

Preliminary site plan with elevations attached as file "Laguna Seca – PCD rev B.pdf"

Fire notes have not yet been incorporated.

Technical Reports

Geological Report –complete, report has not been received

Archaeological Report – incomplete, contractor has not been hired

NEPA Supplemental – incomplete

Visual Simulation

Report in process

Construction Management Plan

In process

Co-location Plan

This site is planned as a telecommunications co-location facility. At this time, the site will be prepared for at least two commercial carriers to share the property. The County is currently engaged in negotiations with Verizon Wireless to locate at this location.

Noticing Requirements

TBD

Lewis Road

Overview

The Lewis Road radio site is located at 1705 Covenant Lane in northern Monterey County. This is an existing County site that provides service to the Sheriff's Office and North County Fire Protection District. The existing site does not have capacity to accommodate the new system design and will be rebuilt with a larger tower and equipment shelter.

This application for a Use Permit at Lewis Road contains the following sections:

- Site Selection and Alternatives Analysis
- Design Approval Request form
- Site Plans
- Technical Reports
    - Geotechnical Report
    - NEPA Supplement (for reference only)
- Visual Simulation
- Construction Management Plan
- Co-location Plan
- Noticing Requirements

Site Selection and Alternatives Analysis

TBD

Design Approval Request Form

[We do not have this yet]

Site Plans

Preliminary site plan with elevations attached as file "Lewis Road – PCD.pdf"

Fire notes have not yet been incorporated.

Note: Several tower options are under review at this time. Alternatives are provided as files:

- "Lewis Road - C-2-A.pdf" – steel lattice
- "Lewis Road - C-2-B.pdf" – monopole
- "Lewis Road - C-2-C.pdf" – monopine

Technical Reports

Geological Report –complete, report has not been received

NEPA Supplemental – complete, attached as file "Lewis Road NEPA.pdf"

Visual Simulation

Report in process

Construction Management Plan

In process

Co-location Plan

This site may be planned as a telecommunications co-location facility. Constrained property space probably only allows for one cellular provider to co-locate in the future.

Noticing Requirements

TBD

Roberts Knoll

The Pinion Peak radio site provides service to the Carmel Valley region as well as southern outskirts of Salinas and undeveloped areas patrolled by the Sheriff's Office.