

**VISTA TOWERS -- RANCHITA**  
**27865 OLD MINE ROAD, RANCHITA CA 92066**  
**ALTERNATE SITE ANALYSIS**

**SITE SELECTION/PREFERRED SITES PER SECTION 6986**

The proposed project site is zoned A-70, limited agriculture, which is classified as a residential use per Section 6983 R of the County Zoning Ordinance. Hence, the proposed project site is not located in a preferred zone per Section 6986 of the County Zoning Ordinance. The proposed wireless communication facility is planned for two wireless carriers. The proposed site is at an elevation of 3867 feet above mean sea level (AMSL) on two separate 35-foot high faux pine trees (monopines), located on a 10-acre parcel. The monopine for Verizon will have 12 panel antennas, 12 remote radio units (RRU), and a four-foot diameter microwave dish; the other monopine will service AT&T and will have eight panel antennas, eight RRU's, and one four-foot diameter microwave dish. The proposed site will provide coverage along Montezuma Valley Road and to the surrounding rural residential area.

**EVALUATION OF EXISTING FACILITIES AND PREVIOUSLY APPROVED WIRELESS FACILITIES**

There are no existing facilities located in the area. The closest neighboring site is a communications tower on Volcan Mountain (Rutherford Peak), approximately five miles south of the proposed project. The communication tower site also incorporates Verizon and AT&T co-located wireless telephone providers on the taller tower; Nextel had a facility located on a separate, shorter tower, which may be now operated as Sprint PCS.

**1. Communications Tower, Rutherford Peak, Julian**

Three wireless communications facilities share this tower. The tower was formerly used as a microwave link for long distance telephone and telephone connections between San Diego County and points to the east, including Imperial County. As discussed above, this site is approximately five miles south of the project site and includes the following wireless carriers:

- Verizon
- AT&T
- Sprint PCS (formerly Nextel)

There is one commercially-zoned property approximately two miles east on Montezuma Valley Road, a C-40 zone. There are no industrial zones, preferred zones, preferred locations, or co-locatable facilities (planned or existing) within a five mile radius that meets the coverage objective. The coverage objective is a 7.2 mile stretch of canyon along Montezuma Valley Road and the community of Ranchita. Currently, no carriers have coverage in this area.

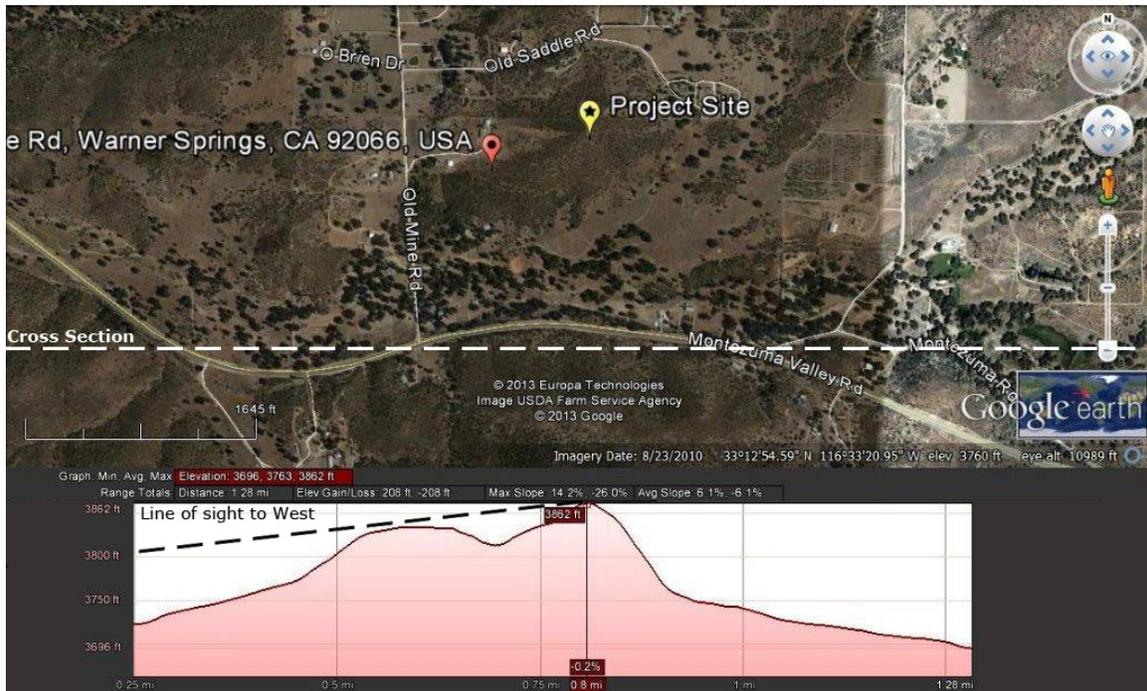
At the request of county planning staff, Vista Towers evaluated the following zoning applications/permits and determined that they are not adequate co-location opportunities.

- A. P08-046 Rutherford Peak (Volcan Mountain):** 2973 Volcan Mountain Ranch Road. Site is approximately 5.25 miles southwest of the proposed site location and too far west to meet coverage objectives. AT&T already operates a site at this location. Verizon Wireless received approval in 2012 and is now on air. An east-west ridgeline between Rutherford Peak and the intended coverage area blocks a major portion of the signal and only allows partial coverage on east end of targeted area.
- B. P06-075:** 25570 Highway 79, a proposed site with a faux tree. Site is 8.4 miles west and too far away to provide coverage; intervening ridgelines to the east prohibit a signal from reaching the Montezuma Valley Road. The application was withdrawn and no site was built.
- C. P06-036 Nextel:** 42' high monopine proposed. Site is 8.8 miles away and too far west to provide coverage. Application was withdrawn and no site was built.
- D. P06-096 Vista Towers Mesa Grande Site:** 24890 State Highway 79. 60' high mono-broadleaf tree. This multi-carrier site is already owned by Vista Towers. Both AT&T and Verizon have existing sites at this location. The proposed site will fill the coverage gap along SR79 but does not provide coverage to the intended coverage area for the project site.
- E. P11-009 Mobilitie** at 36139 Old Wilson Road: Proposed design was a 70' high windmill. Project was withdrawn due to significant sensitive biology on site. No site built.

#### **OTHER SITES CONSIDERED:**

- F. Residential Property on Old Saddle Road:** Approximately three (3) years ago, Vista Towers obtained a lease with a property owner on Old Saddle Road for a multi-carrier site. The Old Saddle Road site is approximately one-third of a mile northeast of the proposed location. In an attempt to relocate the site to avoid sensitive biology, the lease needed to be renegotiated. Vista Towers was not comfortable moving forward with the project under the new lease terms required by the property owner.

**G. Fire Station, 37552 Montezuma Valley Road:** The local fire station is located two miles east of the project site. Coverage to the west is blocked by a predominant ridgeline between the fire station and the project site; further blockage to the west occurs due to the ridge where the project site is located. A graphic illustration of the ridgeline at the project site is shown in the cross-section below; easterly sites will not cover to the west.



**H. Commercial Zoned Property, Montezuma Valley Road:** A commercially-zoned property located on Montezuma Valley Road is near the fire station site, discussed in item G above. The same coverage characteristics apply for this site in terms of the blockage of the signal to the west.

**Evaluation of Potential Alternate Sites per Section 6986 A.2. (a)(1.):**

**Water Tanks** – There are no publicly-owned water tanks in the project area. Most, if not all, properties in the area are on privately-owned wells.

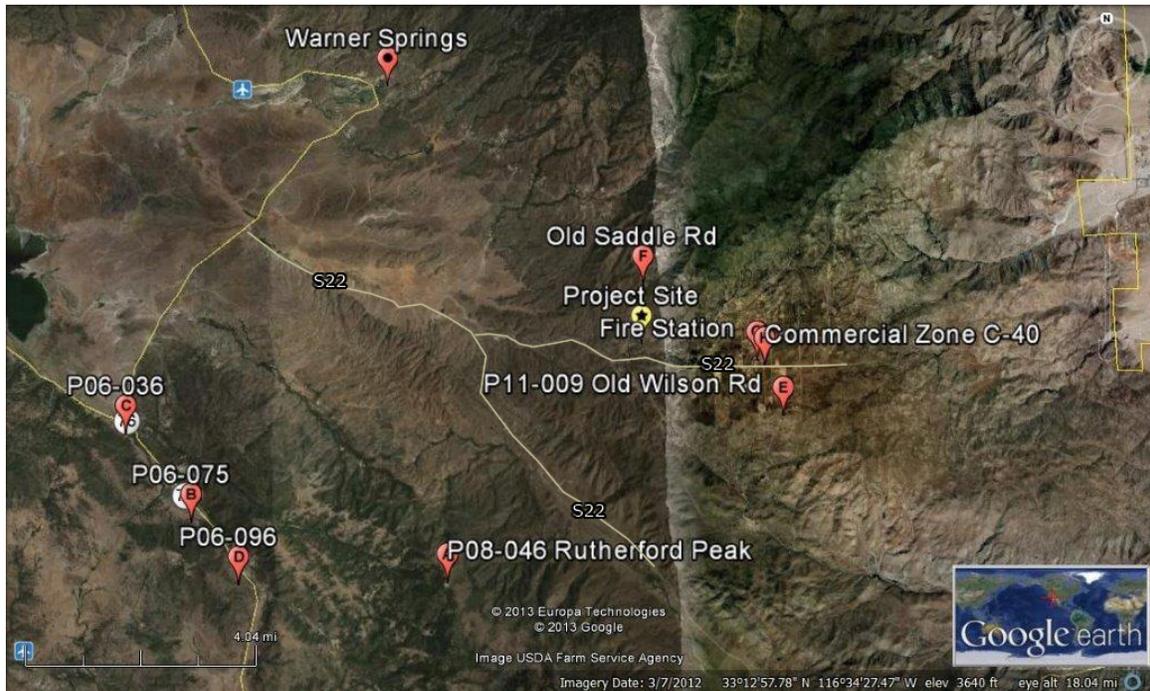
**Utility Towers** – Existing utility poles in the area, along Montezuma Valley Road, are at much lower elevations along the existing roadways and would not provide adequate coverage due to blockage by the rolling terrain and the roadside vegetation; there are no utility towers in the project area.

**Cobra Style Street Lights** – There are no street lights in the area along Montezuma Valley Road.

**Commercial or Industrial Buildings**—There is a small area of commercial use property near the post office. No industrial use properties are in the area.

**County or Government Facilities**—a fire station is located approximately two miles east of the project site and is discussed above.

#### Aerial View of Alternate Sites



- A. P08-046 Rutherford Peak (on –air)
- B. P06-075 (not built)
- C. P06-036 (not built)
- D. P06-096, Vista Towers Mesa Grande (Verizon and ATT on-air)
- E. P11-009 Old Wilson Road (withdrawn)
- F. Old Saddle Road, alternate site withdrawn due to environmental concerns
- G. Fire Station, 37552 Montezuma Valley Road
- H. Commercial Property, Montezuma Valley Road

## Technical Explanation (RF) for Location and Height of Proposed Project

The coverage objective or goal for the Ranchita site is to: (1) provide coverage and service to Ranchita for both general and emergency service; and (2) to connect the service to existing coverage to allow for continuity in coverage.

The best way to interpret or analyze coverage is to think of radio waves as line of sight plus 10 to 20 degrees for bending. Additionally, radio waves generally travel in a downward direction better than they do if projected at a higher angle.

For references, the orange line on the left/west of **Exhibit A** below is near the intersection of San Felipe Road and Montezuma Valley Road, and the orange line at the right/east is near the drop off on Montezuma Valley Road on the way to Borrego Springs. The lines are roughly 6.5 miles apart. For additional reference, yellow pins have been added with ground elevations for various locations.

To be most effective, a site will need to connect to the existing coverage to the west. Currently, the existing coverage along Montezuma Valley Road extending towards the orange line on the west is a weak signal at best. With more overlap of signal in this area, dropped calls can be avoided.

Even the best placed site in Ranchita will lose coverage at the crest of the grade to the east going to Borrego. Therefore, an effective location will provide coverage along Montezuma Valley Road to the orange line on the east.



Exhibit A

The location of the proposed site indicated by the PINK pin (Exhibit A) is ideal because:

- Signal to the East of proposed site (Pink Pin): The proposed site is at 3850 AGL; While it is not usually ideal to propagate RF signals from lower to higher elevations, Ranchita gets progressively higher in elevation to the east. The best analogy would be to stand

inside a large bowl. From the bottom of the bowl, you can actually look up and see every point or part of the bowl. As provided above, radio propagation is line of site. Therefore, in this one instance, using a lower elevation will accomplish coverage objectives since there are no undulations in the topography.

- Signal to the West of proposed site (Pink Pin): The area west of the pink pin drops down in elevation, but also has many undulating, small hills on both the north and south sides of the road. As signal is line of site, plus a little bend, the proposed site provides a necessary angle or path required to avoid leaving large dead spots on Montezuma Road.

**As support of the above statements, please see Attachments:**

- **Vista Towers Propagation Map**. The orange line reference points in the above aerial have been added to the Vista Towers Propagation Map for comparison purposes. As you can see, the coverage east is good and the coverage along the road to the west is "OK". Actual signal propagation typically tends to be slightly better than shown on computer modeling.
- **Verizon's Coverage Plots Map #1** shows the existing Verizon signal coverage without the proposed coverage afforded by the Vista Towers Ranchita site. Again, the orange line reference points from the above aerial map have been added for comparison purposes, even though the map scales are not identical.
- **Verizon's Coverage Plots Map #2** shows current and proposed Verizon signal coverage from the Vista Towers Ranchita and the ability of the site to provide coverage and connection of the signals to the East and West.

**ALTERNATE SITES:**

1. **All Sites to the East as shown on the aerial map (Yellow Pins)**. Site locations to the east of the proposed location were considered and dismissed as they would only provide coverage down to the area of the proposed site (Pink Pin); they would leave a two mile gap on the west end of Montezuma Road as the signal would be blocked by the small hills and turns in the road.

This dead area would mean that every call would drop in this area and would have to be re-initiated by another site placed further to the west; no emergency coverage would be available in this area. The carriers would eventually solve coverage to this dead area by installing an additional tower to cover the gap, resulting in the impact of two towers where only one is needed.

Furthermore, Vista Towers does not find the site in town feasible for a co-locatable facility due to its inability to provide signal to the west. The attached **Downtown/Fire Station Coverage Exhibit Map** reflecting an antenna tip height of 50 feet (55 foot high tree) shows the gaps in coverage along Montezuma Valley Road to the West that would result in a tree located at or near the Fire Station in Ranchita. Therefore, each of the prominent 3 carriers would want a separate tower in this location. The likely result would be 2 or 3 towers near the fire station area and 2 to 3 towers out in the gap area to the west. The eventual towers needed to fill that gap would be relatively near the area currently proposed. Therefore, the impact from not

permitting one tower at the proposed location is likely to be 4 to 6 towers clustered in two different locations, Ranchita Fire Station and to the west along Montezuma Valley Road.

To eliminate the need for multiple towers in town and at the west end of the valley, a site of at least 55 feet would have to be installed at each of the locations by a tower company that has the ability to successfully negotiate the use of short antennas at three foot tip-to-tip separations with the carriers. Without an effective tower company to properly manage the sites, each tower would need to be closer to 70 feet high to achieve a carrier-acceptable, co-locatable site design.

**2. Volcan Mountain (Rutherford Peak).** Volcan Mountain has two main limitations. First, the site is over 6 miles from the targeted area. Due to its distance, Volcan Mountain has difficulty providing in-building coverage due to signal strength. It may also have problems providing reliable in-car coverage. Secondly, there is a ridgeline between Volcan Mountain and the area immediately west of Ranchita. That ridgeline blocks the signal and leaves a 3+ mile dead zone back to existing coverage. Therefore, a site at Volcan Mountain would be less desirable than a site in the downtown area, which would have a smaller dead zone and allow for in building coverage.

Additionally, both Verizon and AT&T already have equipment at Volcan Mountain; another site or a site upgrade at Volcan Mountain would not provide any additional benefit or improvement in coverage to Ranchita.

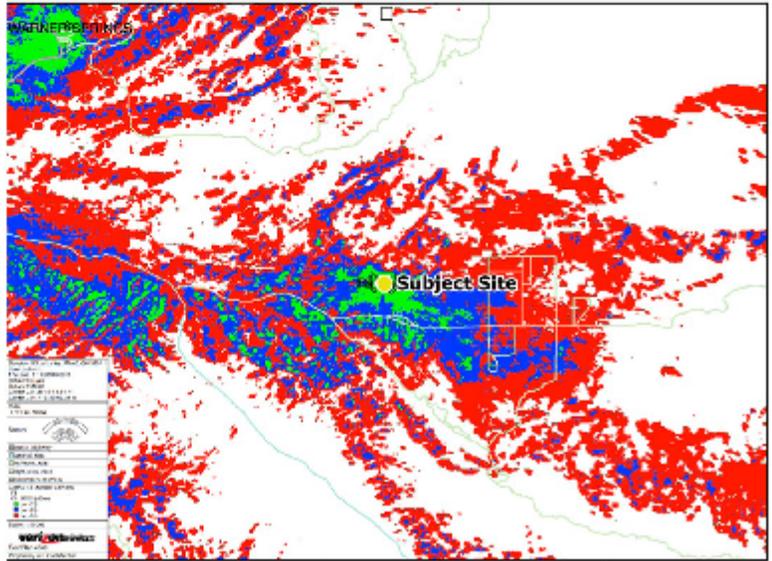
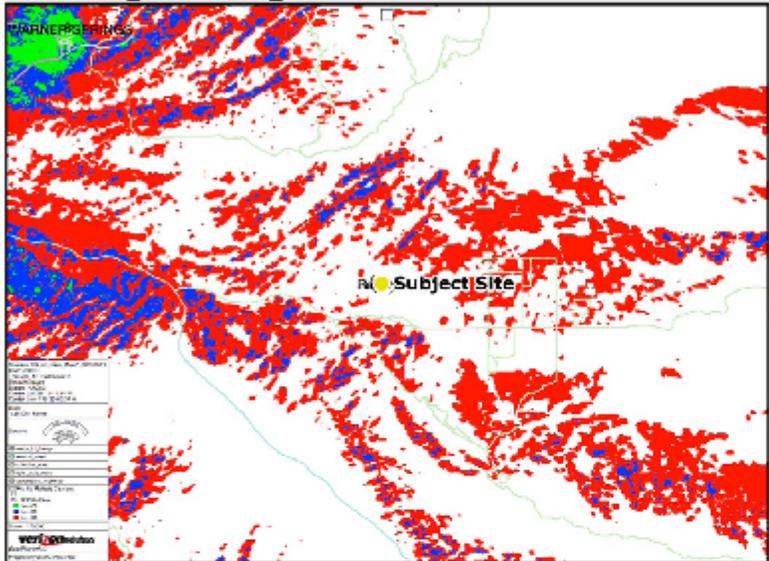
# Coverage Maps

**Ranchita**  
 27865 Old Mine Rd.  
 Ranchita, CA 92066  
 APN: 195-060-12

**Vista Towers**  
 Wireless Site Solutions



## Existing coverage



**Coverage Levels:**

- Excellent
- Good/Variable
- Fair

12/13/2011

*Proposed coverage*