

## INDEX TO ADMINISTRATIVE RECORD

0 EUCLID AVENUE

Use Permit #ZP2018-0236

Prepared: June 16, 2020

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# Z O N I N G A D J U S T M E N T S B O A R D S T A F F R E P O R T

FOR BOARD ACTION  
JUNE 27, 2019

## 0 Euclid Avenue – Berryman Reservoir

**Use Permit #ZP2018-0236 to establish a new 50' high “monopole” 4G LTE wireless facility operated by Verizon Wireless at the East Bay Municipal Utility District site consisting of six antennas, six remote radio units, and associated ground equipment.**

### I. Background

#### A. Land Use Designations:

- General Plan: Low Density Residential
- Zoning: R-1H, Single Family Residential District – Hillside Overlay

#### B. Zoning Permits Required:

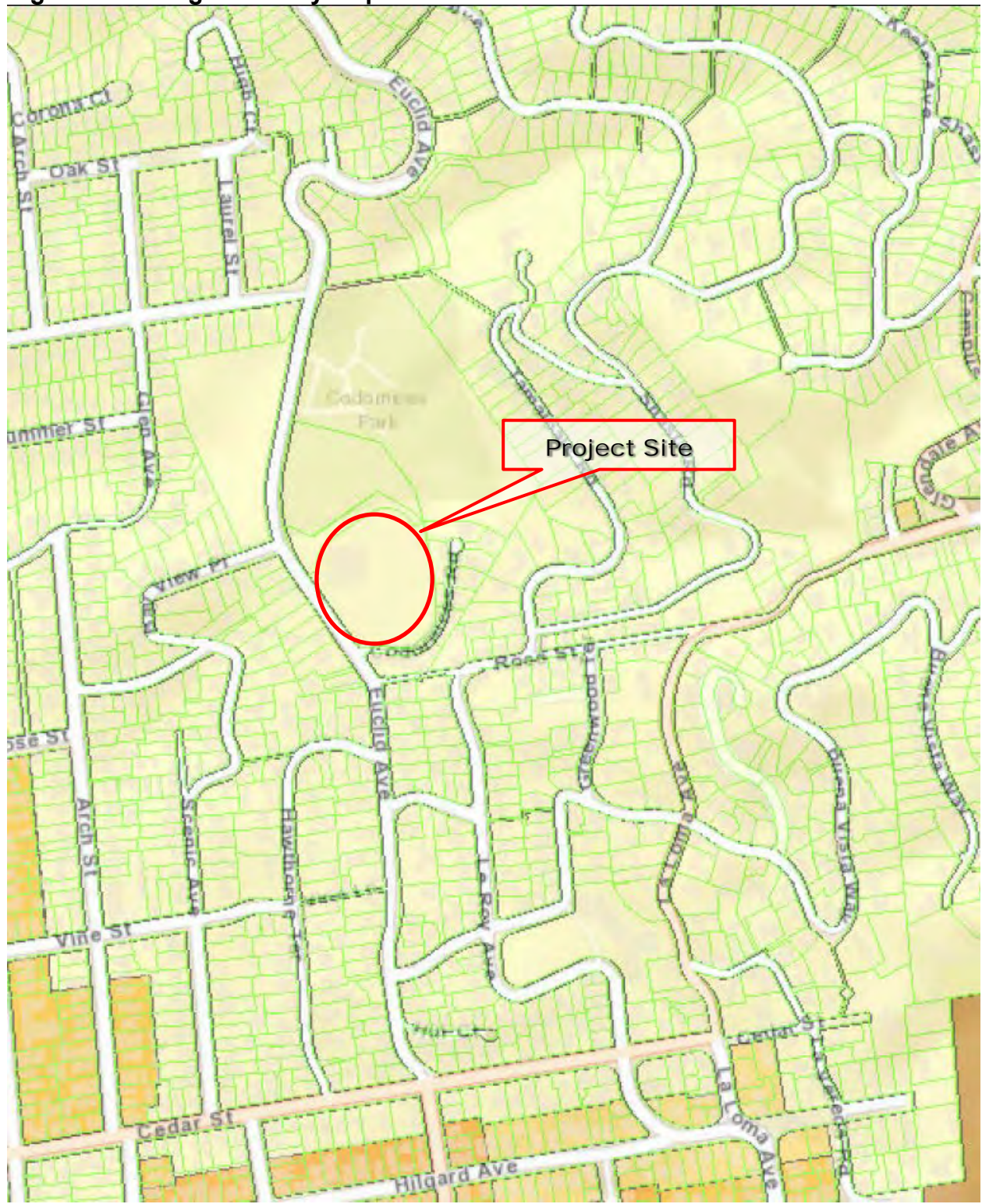
- Use Permit to establish a Wireless Telecommunications Facility, under BMC Section 23C.17.100.A.2;
- Use Permit to establish a Wireless Telecommunications Facility in the R-1 Single Family Residential District, Hillside Overlay, under BMC Section 23D.16.030; and
- Administrative Use Permit to establish Wireless Telecommunications Facility, other than those located within the public right-of-way built higher than 35' in height in the R-1H Single Family Residential District, Hillside Overlay under BMC Sections 23E.96.070 and 23D.04.020.

#### C. CEQA Determination: Categorically exempt pursuant to Sections 15301 and 15303 of the CEQA Guidelines (“Existing Facilities” and “New Construction or Conversion of Small Structures”).

#### D. Parties Involved:

- Applicant                      David Haddock, Ridge Communications Inc  
for Verizon Wireless  
12919 Alcosta Blvd, Suite 1, San Ramon, CA 94583
- Owner                              East Bay Municipal Utility District, Rob Korn  
PO Box 24055, Oakland, CA 94623

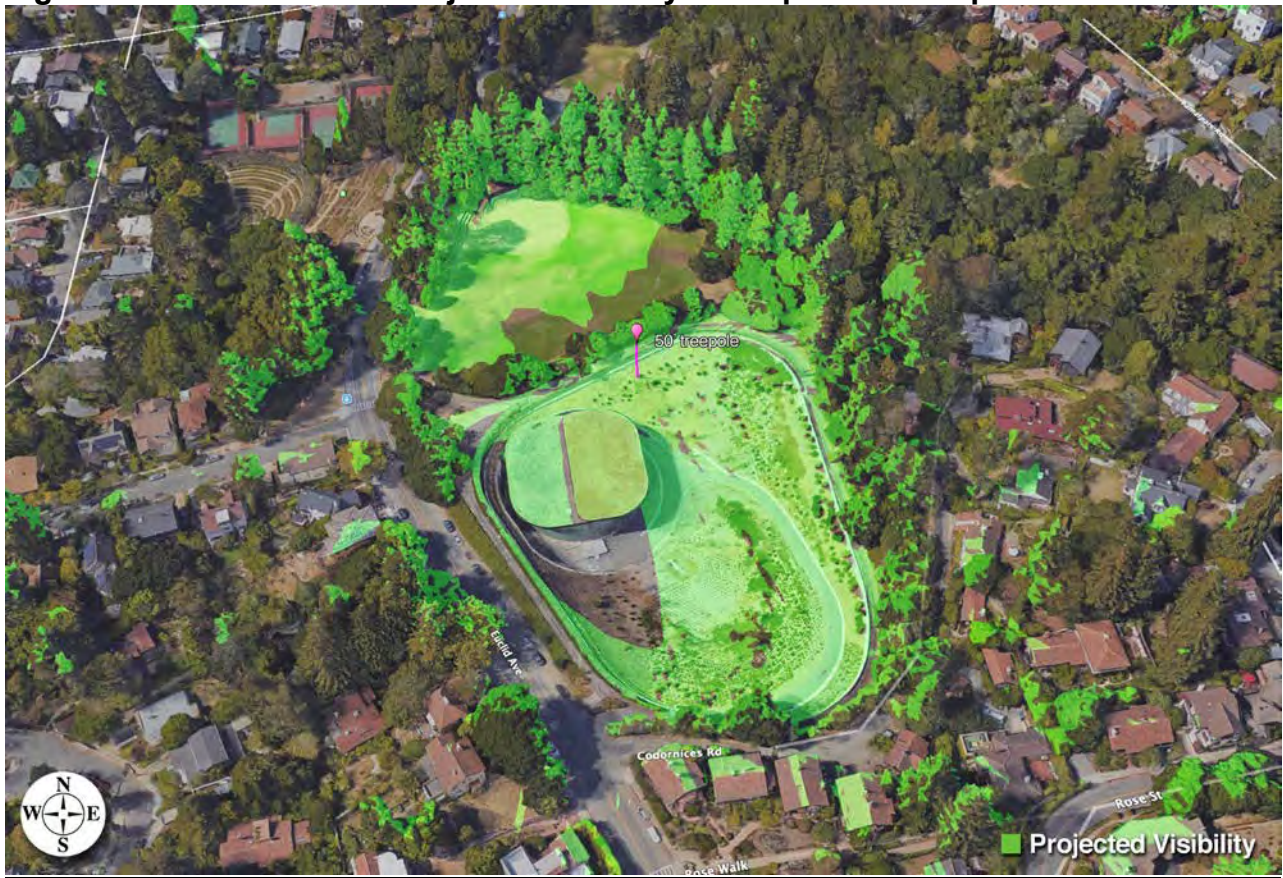
**Figure 1: Zoning & Vicinity Map**



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June 27, 2019

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**Figure 2: Aerial View and Projected Visibility of Proposed Monopole\***



\*See Attachment 2a for site plan and Attachment 2b for photosimulations of existing view, applicant's proposed faux tree design and staff's recommended design of un-camouflaged monopole.

**Table 1: Project Chronology/Shot-Clock**

Date	Action
December 17, 2018	Application Submitted
January 16, 2019	Application Deemed Incomplete
March 12, 2019	Additional Photosimulations submitted per Staff's request
April 11, 2019	Application Deemed Complete
June 12, 2019	ZAB Meeting noticed mailed/posted
June 27, 2019	ZAB Hearing

This application is subject to FCC Ruling 09-99, allowing local governments 150 days as a “reasonable period of time” in which to act on new facility applications. The FCC considers a new wireless facility on pole structure to be new facility. Under California law (Govt. Code 65091) this is also a new facility, eligible for a 150-day Shot-clock. The shot clock expires on July 10, 2019 and the applicant has not executed a tolling agreement.

**Table 2: Land Use Information**

Location		Existing Use	Zoning District	General Plan Designation
Subject Property		Berryman Reservoir (East Bay Municipal Utility District)	R-1H	Low Density Residential
Surrounding Properties	North	Codornices Park	R-1H	Low Density Residential
	South	Residential Dwellings		
	East	Residential Dwellings		
	West	Residential Dwellings		

**Table 3: Special Characteristics**

Characteristic	Applies to Project?	Explanation
Compliant with FCC standards for RF EME levels and, therefore, permissible	Yes	47 United States Code § 332 (c) (7) (iv) prohibits the regulation of personal wireless facilities by state and local governments on the basis of radio frequency emissions to the extent that such facilities comply with the Federal Communication Commission’s regulations concerning such facilities and emission levels. This application demonstrates compliance with all applicable FCC standards as described in Section V.A of this report and documented in Attachment 4a; the City’s RF EME consultant has reviewed and confirmed these facts.
Compliant with Federal shot clock timeframe for 150-day review	Yes	47 United States Code § 332 (c) (7) (iii) and implementing FCC Regulations, including Regulation 09-99 as well as Section 6409 of the Spectrum Act (2012), require state and local governments to act on wireless telecommunication applications within a reasonable time period of time and mandate the following periods: 60 days for non-substantial changes, 90 days for colocations, and 150 days for new facilities where future co-locations are presumed. This proposed facility is considered a new facility because it is a monopole design Accordingly the 150-day shot clock is applicable. Please see Table 1
Subject to preemptive State approval	No	Pursuant to California Government Code Section 65964.1 for Wireless telecommunications facility approval, this request may not be deemed approved if the reasonable timeframes of the federal regulations are not met (see explanations, above) because it is a new facility and does not meet the State’s criteria under California Government Code Section 65850.6.
Historic Resources	No	The site of the proposed wireless project is not on a parcel that contains a City Landmark. Therefore, the project was not referred to the Landmarks Preservation Commission for comment.

## II. Project Setting

- A. Neighborhood/Area Description:** The site is on the east side of Euclid Avenue near Bay View Place, in the Berkeley hills. The elevation in the area increase west to east. The surrounding area primarily consists primarily of single family residential dwellings and parks, including Codornices Park and the Berkeley Rose Garden.
- B. Site Conditions:** The subject property is a 3.7 acre (161,401 square foot) parcel belonging to the East Bay Municipal Utility District (EBMUD). It is developed with an approximately 2.6 million gallon water storage tank (reservoir). The balance of the property includes vehicular access for maintenance trucks, and landscaping.

## III. Community Discussion

- A. Neighbor/Community Concerns:** Prior to submitting the application to the City, a pre-application poster was erected on the project site by the applicant in December 2018. On June 12, 2019, public hearing notices were posted on the site and at three locations in the vicinity; notices were also mailed to property owners and occupants within a 300' radius, and to interested neighborhood organizations. As of writing this staff report, staff has received approximately 40 emails regarding the proposed monopole, with the majority of the comments focused on the location and design of the proposed monopole and stating that the faux tree was not a desirable design (see Attachment 7).
- B. Committee Review:** Additional committee review is not required for this facility. Land Use and Design Review staff worked with the applicant team on alternative design options; see Section V.B. Design and Aesthetic Quality, below.

## IV. Project Description

Verizon is proposing to install a new wireless telecommunications facility consisting of a freestanding tower also commonly referred to as a "monopole", designed as a "monopine" or "treepole" in order to be disguised as an evergreen tree. Antennas, remote radio units, and other related cables and equipment are proposed to be mounted on the monopole. Other equipment cabinets, including a standby generator are proposed be installed on the ground near the monopole and would not be visible from the street as the property is bowl shaped with the lowest elevations surrounded by an earthen berm. Verizon is proposing to provide LTE "data only" service from this facility.

## V. Issues and Analysis

- A. Zoning Compliance – BMC Chapter 23C.17 for Wireless Telecommunication Facilities:** The Federal Communications Commission, pursuant to regulations established under the Telecommunications Act of 1996 and the Spectrum Act of 2012, regulates the development of wireless communications infrastructure, limiting the scope and duration of local government review (47 USC § 332). The City of Berkeley's regulations with respect to wireless facilities were written to compliment the Federal requirements, while protecting public safety, and promoting community welfare and aesthetic quality. These regulations focus on compliance with established standards

for facility necessity, Radio Frequency exposure and noise, and regulate provider compliance with applicable Federal Regulations, design and parking. As summarized in Table 4, below, the application is in compliance with the requirements established in Chapter 23C.17 for the approval of Use Permits for new wireless communication facilities.

**Table 4: Wireless Facilities Compliance Checklist – BMC 23C.17**

Regulatory requirement	Satisfied?	Explanation
<p><b>Necessity.</b> The applicant's statement of the project objectives and necessity demonstrate that project will prevent or fill a significant gap in coverage or capacity; and these statements have been peer reviewed to confirm that the project will meet these objectives per BMC Sections 23C.17.040 and 23C.17.100</p>	Yes	A peer review confirmed that the applicant's statement of project necessity complied with applicable FCC standards.
<p><b>RF exposure.</b> Compliance with FCC RF exposure limits shall be demonstrated and peer reviewed. Per BMC Sections 23C.17.040.F.1</p>	Yes	See Attachment 4a. Maximum RF exposure at ground level from project was calculated at 60% of applicable public exposure limit. Maximum exposure in adjacent residences was calculated at 12% of applicable public exposure limit. Peer reviews by the City's RF EME consultant confirmed these calculations, methodology used, and compliance with FCC standards.
<p><b>Noise.</b> Applicant shall provide a noise study demonstrating that the facility will comply with the Berkeley Community Noise Ordinance (BMC 13.40) per 23C.17.080.C</p>	Yes	See Attachment 5. The City's noise consultant peer reviewed the applicant's noise study (Hammett & Edison, Inc) and provided comments to ensure compliance with the Community Noise Ordinance and Conditions of Approval require that the final noise study be review and approved prior to the issuance of Building Permits.
<p><b>Provider compliance certification.</b> Operator has filed a statement of compliance with FCC requirements with respect to all of their facilities in the City of Berkeley, per BMC Sections 23C.17.090.A.2 or 23C.17.100.B.4</p>	Yes	Verizon Wireless has provided the requisite annual compliance report for 2019. See Attachment 6.
<p><b>Height.</b> Project is within the applicable height limits. Per BMC Sections 23C.17.060.D, 23D.16.070, 23E.96.070, and 23D.04.020</p>	Yes	BMC Section 23D.04.020 requires that an Administrative Use Permit is secured for Wireless Telecommunications Facilities built to a height greater than the limit established for the district other than those located within the public right-of-way. The Wireless Ordinance allows wireless facilities to extend up 15' above the height limit of the district. In this case, the R-1H district height limit is 35', accordingly, the proposed 50' wireless tower would be within the applicable height limit.

<p><b>Design.</b> Project is designed to minimize potential visual impacts per BMC Section 23C.17.070</p>	<p>Yes</p>	<p>The applicant presented a design intended to minimize visual impacts and integrate the new antennas and equipment with the surroundings, based on recent experience with other wireless applications in Berkeley. See the discussion in V.B, below.</p>
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**B. Design and Aesthetic Quality:** The federal and state laws limit or prohibit local discretionary review over many technical aspects of wireless telecommunication facilities including the establishment of radio frequency emission levels and demonstration of need or alternative siting requirements that are excessively burdensome to applicants. Furthermore, local government permitting time limits are mandated by Federal regulations, as shown in Table 1. The City's discretion over this request is limited to design and aesthetic consideration and the BMC prescribed design requirements for these facilities. Therefore, only these aspects of the discretionary application have become the City's focus when reviewing requests for new and modified wireless facilities. Staff's discussion of this proposed facility's placement, design and aesthetic qualities follows for the Board's consideration.

BMC Section 23C.17.070 lists extensive design requirements for telecommunication facilities, including all facilities shall be designed and located to minimize their visibility to the greatest extent feasible, considering technological requirements, by means of placement, screening, and camouflage and colors and materials for facilities shall be chosen to minimize visibility. Subsection C.3 states: "*All monopoles and lattice towers shall be designed to be the minimum functional height and width required to support the proposed antenna installation unless a higher monopole or lattice tower will facilitate co-location or other objectives of this Chapter.*"

Per BMC Section 23C.17.100.B.2, the Zoning Adjustments Board must make a finding that the facility the proposed antenna or related facility, operating alone and in conjunction with other telecommunications facilities, would comply with all applicable state and federal standards and requirements and would either:

*(1) not be readily visible; or*

*(2) be readily visible, but it is not feasible to incorporate additional measures that would make the facility not readily visible.*

In this case, staff believes that the applicant's original proposal of a "monopine" design would comply would comply with #1, above, to not be readily visible, as it is a camouflaged monopole designed to look like a pine tree and blends in with the surrounding tree cover and vegetation as depicted in the photosimulations.

Per staff's request, the applicant has provided multiple photo simulations of design alternatives of the monopole (see Attachment 2b) including the following:

- a "monopine"/"treepole", faux tree design;
- an un-camouflaged monopole painted grey;
- an un-camouflaged monopole painted green;
- a four legged tower with RF screen enclosure painted grey; and



- a four legged tower with RF screen enclosure painted green.

Alternative design options consisting of large enclosure screen walls were found to make the facility more noticeable and visible.

Multiple public comment letters sent to the City state that the proposed faux tree is not a desirable design and in response Staff has evaluated the un-camouflaged design of the monopole. A monopole in proximity to the existing vegetation and tree cover minimizes the its visibility as required under #1 or #2 above, without the installation of faux tree as shown in the applicants submitted alternative photosimulations. Additionally, the proposed faux tree would require monitoring and maintenance to ensure that the faux branches designed to obscure the antennas are in good condition and not damaged due to weather. Because the un-camouflaged monopole can be painted green and its location would minimize the visibility of its respective components and preserve the aesthetic quality of the area, staff recommends that the Board approve the request for a new monopole wireless facility, with Condition of Approval that the wireless facility be designed as an un-camouflaged monopole painted green.

**C. General Plan Consistency:** The 2002 General Plan contains several policies applicable to the project, including the following:

1. Policy LU-7–Neighborhood Quality of Life, Action A: Require that new development be consistent with zoning standards and compatible with the scale, historic character, and surrounding uses in the area.

Staff Analysis: The un-camouflaged monopole painted green option of proposal is consistent with the relevant zoning standards, which require that need for the wireless telecommunication facility be demonstrated and that the facility not be readily visible and not result in negative effects on public health (see Design and Aesthetic Quality and Zoning Compliance, above).

2. Policy UD-16–Context: The design and scale of new or remodeled buildings should respect the built environment in the area, particularly where the character of the built environment is largely defined by an aggregation of historically and architecturally significant buildings.
3. Policy UD-24–Area Character: Regulate new construction and alterations to ensure that they are truly compatible with and, where feasible, reinforce the desirable design characteristics of the particular area they are in.

Staff Analysis: The un-camouflaged monopole painted green design option of the proposed wireless facility as shown in the submitted photo simulations is within an area which will reduce the visibility of the facility and will blend in with the surrounding vegetation at the reservoir.

## VI. Recommendation

Because of the project's consistency with the Zoning Ordinance and General Plan, staff recommends that the Zoning Adjustments Board **APPROVE** Use Permit #ZP2018-0236,

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June 27, 2019

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pursuant to BMC Sections 23B.32.030 and 23C.17.100, subject to the attached Findings and Conditions that the wireless facility be the **un-camouflaged monopole painted green** option presented by the applicant. (See Attachment 1).

**Attachments:**

1. Findings and Conditions
2. a. Project Plans, March 3, 2018  
b. Photosimulations, dated November 6, 2016
3. Notice of Public Hearing, dated June 12, 2019
4. a. RF-EME Peer Review memo and Report, Hammett & Edison, Inc.  
b. Statement of need and coverage maps
5. Acoustic Report, Bollard Acoustical Consultants and Peer Review memo
6. Annual Compliance Certification, June, 6 2019
7. Correspondences Received

**Staff Planner:** Loyal Nawfal, lnawfal@cityofberkeley.info, (510) 981-7424

# ATTACHMENT 1

## FINDINGS AND CONDITIONS

JUNE 27, 2019

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### 0 Euclid Avenue – Berryman Reservoir

**Use Permit #ZP2018-0236 to establish a new 50' high “monopole” 4G LTE wireless facility operated by Verizon Wireless at the East Bay Municipal Utility District site consisting of six antennas, six remote radio units, and associated ground equipment.**

#### CEQA FINDINGS

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1. The project is categorically exempt from the provisions of the California Environmental Quality Act (CEQA, Public Resources Code §21000, et seq. and California Code of Regulations, §15000, et seq.) pursuant to Sections 15301 and 15303 of the CEQA Guidelines (“Existing Facilities” and “New Construction or Conversion of Small Structures”). Furthermore, none of the exceptions in CEQA Guidelines Section 15300.2 apply, as follows: (a) the site is not located in an environmentally sensitive area, (b) there are no cumulative impacts, (c) there are no significant effects, (d) the project is not located near a scenic highway, (e) the project site is not located on a hazardous waste site pursuant to Government Code Section 65962.5, and (f) the project will not affect any historical resource.

#### GENERAL NON-DETRIMENT FINDING

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2. Pursuant to Berkeley Municipal Code Section 23B.32.040, the Zoning Adjustments Board finds that the proposed project, under the circumstances of the particular case existing at the time at which the application is granted, will not be detrimental to the health, safety, peace, morals, comfort, or general welfare of persons residing or working in the area or neighborhood of such proposed use or be detrimental or injurious to property and improvements of the adjacent properties, the surrounding area or neighborhood, or to the general welfare of the City, for the following reasons:
  - A. A report prepared by a registered engineer, and peer-reviewed by the City, demonstrates that the Verizon wireless telecommunications facility would comply with the Federal Communications Commission (FCC) standards for limiting human exposure to radio frequencies.
  - B. A report prepared by a registered engineer, and peer-reviewed by the City, confirmed that the proposed facility would significantly increase the capacity of Verizon’s wireless data network in the subject area.
  - C. A noise study prepared for the project and peer-reviewed by the City demonstrated that the proposed equipment is not expected to generate audible noise levels and would not contribute to the ambient noise environment; and

- D. The facility is conditioned to meet all standards of the California Building Code and all portions of the facility shall be anchored so that an earthquake does not dislodge them or tip them over.

OTHER REQUIRED FINDINGS

3. Pursuant to Berkeley Municipal Code Section 23C.17.100.B.1, the Zoning Adjustments Board finds that the project *is consistent with the general requirements of this chapter and any specific requirements applicable* because the project meets the provisions of the 2002 General Plan, particularly Policy LU-7 Neighborhood Quality of Life, Action A, Policy UD-16 Context, and Policy UD-24 Area Character.
4. Pursuant to Berkeley Municipal Code Section 23C.17.100.B.2, the Zoning Adjustments Board finds that project *“will comply with all applicable state and Federal standards and requirements”* for the following reasons:
  - A. A report prepared by Hammett & Edison concludes that the Verizon will comply with the FCC standards for limiting human exposure to radio frequency energy; and
  - B. An independent licensed engineer peer reviewed this RF report and concurred with its analysis and concludes that the proposed facility will comply with the FCC guidelines for radio frequency emissions.
5. Pursuant to Berkeley Municipal Code Section 23C.17.100.B.2.a, and 23C.17.100.C, the Zoning Adjustments Board finds that the design (i.e. location and height) of the new antennas is the least visible means of achieving the intent of their installation. The location of the monopole will ensure that is a less visible project than if located elsewhere in the neighborhood. The associated equipment enclosures are located in an area of the property which below grade of the surrounding public right of way and is surrounded by vegetation and will not be visible.
6. Pursuant to Berkeley Municipal Code Section 23C.17.100.B.3, the Zoning Adjustments Board finds that the facility *“is necessary to prevent a significant gap in coverage or capacity shortfall in the applicant’s service area, and is the least intrusive means of doing so”* because the City’s peer reviewer independently reviewed the Verizon proposal and concluded that the facility is necessary to support the existing Verizon facilities, particularly in order to increase the capacity of Verizon’s network.
7. Pursuant to Berkeley Municipal Code Section 23C.17.100.B.4, the Zoning Adjustments Board finds that Verizon, is in compliance with Sections 23C.17.090.A.1 and 23C.17.090.A.2 based on written certification that each Verizon facility in the City of Berkeley is operating in accordance with the approved local and federal permits, that includes contact information for Verizon, and provides written certification by a licensed professional engineer that the new facilities’ radio frequency emissions are in compliance with the approved application and any required conditions.

**STANDARD CONDITIONS OF APPROVAL FOR ALL PROJECTS**

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**1. Conditions Shall be Printed on Plans**

The conditions of this Permit shall be printed on the *second* sheet of each plan set submitted for a building permit pursuant to this Use Permit, under the title 'Use Permit Conditions.' *Additional sheets* may also be used if the *second* sheet is not of sufficient size to list all of the conditions. The sheet(s) containing the conditions shall be of the same size as those sheets containing the construction drawings; 8-1/2" by 11" sheets are not acceptable.

**2. Applicant Responsible for Compliance with Conditions**

The applicant shall ensure compliance with all of the following conditions, including submittal to the project planner of required approval signatures at the times specified. Failure to comply with any condition may result in construction being stopped, issuance of a citation, and/or modification or revocation of the Use Permit.

**3. Uses Approved Deemed to Exclude Other Uses (Section 23B.56.010)**

- A. This Permit authorizes only those uses and activities actually proposed in the application and excludes other uses and activities.
- B. Except as expressly specified herein, this Permit terminates all other uses at the location subject to it.

**4. Modification of Permits (Section 23B.56.020)**

No change in the use or structure for which this Permit is approved is permitted unless the Permit is modified by the Zoning Adjustments Board, in conformance with Section 23B.56.020.A.

**5. Plans and Representations Become Conditions (Section 23B.56.030)**

Except as expressly specified herein, the site plan, floor plans, elevations, photosimulations and any additional information or representations submitted by the applicant during the Staff review and public hearing process leading to the approval of this Permit, whether oral or written, which indicated the proposed structure or manner of operation are deemed conditions of approval.

**6. Subject to all City and Other Regulations (Section 23B.56.040)**

The approved use and/or construction are subject to, and shall comply with, all applicable City Ordinances and laws and regulations of other governmental agencies.

**7. Exercised Permit for Use Survives Vacancy of Property (Section 23B.56.080)**

Once a Permit for a use is exercised and the use is established, that use is legally recognized, even if the property becomes vacant, except as set forth in Standard Condition #8 below.

**8. Exercise and Lapse of Permits (Section 23B.56.100)**

- A. A permit for the use of a building or a property is exercised when, if required, a valid City business license has been issued, and the permitted use has commenced on the property.
- B. A permit for the construction of a building or structure is deemed exercised when a valid City building permit, if required, is issued, and construction has lawfully commenced.



- b. The plans shall strike all 'future' elements from the Plans and submittal materials.
12. All final Noise Study and RF studies shall reflect final approval design and Conditions of Approval prior to issuance of Building Permit. The applicant shall provide a statement which expressly agrees to follow all of the City's Municipal Code pertaining to RF safety, including but not limited to BMC Section 23C.17.040.D, sworn statement and BMC Section 23C.17.090 Requirement for Certification of Facilities in its entirety.
  13. The applicant shall provide signage identifying the name and phone number of a party to contact in event of an emergency. The design, materials, colors and location of signs shall be subject to the Conditions of Approval. The plans submitted for a building permit shall include a sample of the proposed emergency sign(s) as well as the warning signs as required in COA #25 & #26 below, as well as the location for posting such signs.
  14. Any outstanding Land Use Planning Fees or Peer Review Invoices shall be paid prior to issuance of a Building Permit.
  15. The applicant shall either secure a bond or provide financial assurances in a form acceptable to the City Manager for the removal of the facility in the event that its use is abandoned or the approval is otherwise terminated.
  16. Transportation Construction Plan. The applicant and all persons associated with the project are hereby notified that a Transportation Construction Plan (TCP) is required for all phases of construction, particularly for the following activities:
    - Alterations, closures, or blockages to sidewalks, pedestrian paths or vehicle travel lanes (including bicycle lanes);
    - Storage of building materials, dumpsters, debris anywhere in the public ROW;
    - Provision of exclusive contractor parking on-street; or
    - Significant truck activity.

The applicant shall secure the City Traffic Engineer's approval of a TCP. Please contact the Office of Transportation at 981-7010, or 1947 Center Street, and ask to speak to a traffic engineer. In addition to other requirements of the Traffic Engineer, this plan shall include the locations of material and equipment storage, trailers, worker parking, a schedule of site operations that may block traffic, and provisions for traffic control. The TCP shall be consistent with any other requirements of the construction phase.

Contact the Permit Service Center (PSC) at 1947 Center Street or 981-7500 for details on obtaining Construction/No Parking Permits (and associated signs and accompanying dashboard permits). Please note that the Zoning Officer and/or Traffic Engineer may limit off-site parking of construction-related vehicles if necessary to protect the health, safety or convenience of the surrounding neighborhood. A current copy of this Plan shall be available at all times at the construction site for review by City Staff.

**During Construction:**

17. Construction activity shall be limited to between the hours of 8:00 AM and 6:00 PM on Monday through Friday, and between 9:00 AM and 12:00 PM on Saturday. No

construction-related activity shall occur on Sunday or any Federal Holiday.

18. Public Works. All piles of debris, soil, sand, or other loose materials shall be covered at night and during rainy weather with plastic at least one-eighth millimeter thick and secured to the ground.
19. Public Works. The applicant shall ensure that all excavation takes into account surface and subsurface waters and underground streams so as not to adversely affect adjacent properties and rights-of-way.
20. Public Works. The project sponsor shall maintain sandbags or other devices around the site perimeter during the rainy season to prevent on-site soils from being washed off-site and into the storm drain system. The project sponsor shall comply with all City ordinances regarding construction and grading.
21. Public Works. Prior to any excavation, grading, clearing, or other activities involving soil disturbance during the rainy season the applicant shall obtain approval of an erosion prevention plan by the Building and Safety Division and the Public Works Department. The applicant shall be responsible for following these and any other measures required by the Building and Safety Division and the Public Works Department.
22. Public Works. The removal or obstruction of any fire hydrant shall require the submission of a plan to the City's Public Works Department for the relocation of the fire hydrant during construction.
23. Public Works. If underground utilities leading to adjacent properties are uncovered and/or broken, the contractor involved shall immediately notify the Public Works Department and the Building & Safety Division, and carry out any necessary corrective action to their satisfaction.

**Prior to Issuance of Occupancy Permit or Final Inspection:**

24. Compliance with Approved Plan. The project shall conform to the plans and statements in the Use Permit. All landscape, site and architectural improvements shall be completed per the attached approved drawings dated March 3, 2018 except as modified by Conditions of Approval,

**At All Times:**

25. Signage identifying the name and phone number of the individual to contact in the event of an emergency shall be installed at the project site (see Condition #13 above).
26. Verizon Wireless, the operator, shall install warning signs and provide RF training for persons authorized to access the facility, as called for as mitigation measures in the RF-EME Report for the project by Hammett & Edison and the City's Peer Reviewer, including the following:
  - a. The permittee shall keep all access points to the site locked at all times, except when active maintenance is performed on the equipment.
  - b. The permittee shall install and at all times maintain in good condition an "RF Notice" sign and a network operations center sign adjacent to all access points



of the site. The signs required in this condition must be placed in a location where they are clearly visible to a person approaching the access point(s) whether in the open or closed positions.

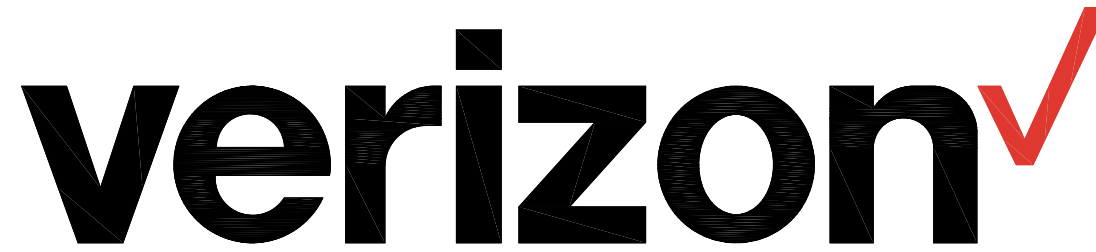
- c. The permittee shall ensure that all signage complies with FCC OET Bulletin 65 and ANSI C95.2 for color, symbol, and content conventions. All such signage shall at all times provide a working local or toll-free telephone number to its network operations center, and such telephone number shall be able to reach a live person who can exert transmitter shut-down control over this site as required by the FCC.
- 27.** Subject to review and approval by the Zoning Officer, future changes to or replacement of the wireless equipment shall be permitted through issuance of a Zoning Certificate, rather than a Modification of the Use Permit, so long as the proposed changes are not detrimental, comply with performance standards within this Use Permit (e.g. noise levels, visual appearance, and RF standards), do not increase the size or visibility of any legally established wireless telecommunication facility, and complies with the FCC's MPE limits for electric and magnetic field strength and power density for transmitters within the designated equipment area.
- 28.** The wireless telecommunications facility and related equipment, including lighting, fences, shields, cabinets, and poles, shall be maintained in good repair, free from trash, debris, litter and graffiti and other forms of vandalism, and any damage from any cause shall be repaired as soon as reasonably possible so as to minimize occurrences of dangerous conditions or visual blight. Graffiti shall be removed from any facility or equipment as soon as practicable, and in no instance more than forty-eight (48) hours from the time of notification by the city.
- 29.** The wireless telecommunications facility shall be operated in a manner that will minimize noise impacts to surrounding residents and persons using nearby parks, trails, and similar recreation areas. Except for emergency repairs, testing and maintenance activities that will be audible beyond the property line shall only occur between the hours of 8:00 am and 7:00 pm on Monday through Friday, excluding holidays. All air conditioning units and any other equipment that may emit noise that would be audible from beyond the property line shall be enclosed or equipped with noise attenuation devices. Backup generators shall only be operated during periods of power outages or for testing. At no time shall equipment noise from any source exceed the standards specified in the Berkeley Community Noise Ordinance (BMC Chapter 13.40).
- 30.** The exterior walls and roof covering of all aboveground equipment shelters and cabinets shall be constructed of materials rated as nonflammable in the Uniform Building Code.
- 31.** Openings in all aboveground equipment shelters and cabinets shall be protected against penetration by fire and windblown embers to the extent feasible.
- 32.** Material used as supports for antennas shall be fire resistant, termite proof, and subject to all applicable requirements of the California Building Code.
- 33.** Telecommunications antenna towers shall be designed to withstand forces expected during earthquakes to the extent feasible. Building-mounted facilities shall be anchored

- so that an earthquake does not dislodge them or tip them over. All equipment mounting racks and attached equipment shall be anchored so that a quake would not tip them over, throw equipment off its shelves, or otherwise damage equipment.
- 34.** All connections between various components of the wireless telecommunications facility and necessary power and telephone lines shall, to the extent feasible, be protected against damage by fire, flooding, and earthquake. Reasonable measures shall be taken to keep wireless telecommunication facilities in operation in the event of a natural disaster.
  - 35.** No wireless telecommunications facility or combination of facilities shall at any time produce power densities that exceed the FCC's limits for electric and magnetic field strength and power density for transmitters. In order to ensure continuing compliance with all applicable emission standards, all wireless telecommunications facilities shall be reviewed by an approved engineer in accord with the schedule and procedures set forth in Section 23C.17.090. All reasonable costs of such inspections shall be borne by the owner or operator of the facility. The City may require, at the operator's expense, independent verification of the results of any analysis. If an operator of a telecommunications facility fails to supply the required reports or fails to correct a violation of the Federal Communications Commission standard following notification, the Use Permit is subject to modification or revocation by the Zoning Adjustments Board following a public hearing.
  - 36.** Within forty five (45) days of initial operation or modification of a telecommunications facility, the operator of each telecommunications antenna shall submit to the Zoning Officer written certification by an approved engineer that the facility's radio frequency emissions are in compliance with the approved application and any required conditions. The engineer shall measure the radio frequency radiation of the approved facility and determine if it meets the FCC requirements. A report of these measurements and the engineer's findings with respect to compliance with the FCC's MPE limits shall be submitted to the Zoning Officer. If the report shows that the facility does not comply with applicable FCC requirements, the owner or operator shall cease operation of the facility until the facility complies with, or has been modified to comply with, this standard. Proof of compliance shall be a certification provided by the engineer who prepared the original report. In order to assure the objectivity of the analysis, the City may require, at the applicant's expense, independent verification of the results of the analysis.
  - 37.** Hereafter, prior to January 31 of every year, an authorized representative for each wireless carrier providing service in the City of Berkeley shall provide written certification to the City that each facility is being operated in accordance with the approved local and federal permits and shall provide the current contact information.
  - 38.** Once every two years, the City may retain, at the operator's expense, an approved engineer to conduct an unannounced spot check of the facility's compliance with applicable FCC radio frequency standards.
  - 39.** In the event of a change in the FCC's Maximum Permissible Exposure (MPE) limits for electric and magnetic field strength and power density for transmitters, the operator of the facility shall be required to submit to the Zoning Officer written certification by an

- approved engineer of compliance with applicable FCC radio frequency standards within 90 days of any change in applicable FCC radio frequency standards or of any modification of the facility requiring a new submission to the FCC to determine compliance with emission standards. If calculated levels exceed 50% of the FCC's MPE limits, the operator of the facility shall hire an approved engineer to measure the actual exposure levels. If calculated levels are not in compliance with the FCC's MPE limit, the operator shall cease operation of the facility until the facility is brought into compliance with the FCC's standards and all other applicable requirements. A report of these calculations, required measurements, if any, and the engineer's findings with respect to compliance with current MPE limits shall be submitted to the Zoning Officer.
- 40.** If the Zoning Officer at any time finds that there is good cause to believe that a telecommunications antenna is not in compliance with applicable FCC radio frequency standards, he/she may require the operator to submit written certification that the facility is in compliance with such FCC standards.
- 41.** Within thirty (30) days of cessation of operations of any wireless telecommunications facility approved pursuant to this chapter, the operator shall notify the Zoning Officer in writing. The permit for said wireless telecommunications facility shall be deemed lapsed and of no further effect six (6) months thereafter unless:
- A. The Zoning Officer has determined that the same operator resumed operation within six (6) months of the notice; or
  - B. The City has received an application to transfer the permit to another operator.
- 42.** No later than thirty (30) days after a permit has lapsed under the preceding condition of approval, the operator shall remove all wireless telecommunication facilities from the site. If the operator fails to do, the property owner shall be responsible for removal, and may use any bond or other assurances provided by the operator pursuant to the requirements of Section 23C.17.050 to do so. If such facilities are not removed, the site shall be deemed to be a nuisance pursuant to Section 23B.64 and the City may call the bond to pay for removal.
- 43.** Failure to inform the Zoning Officer of cessation of operations of any existing facility shall constitute a violation of the Zoning Ordinance and be grounds for:
- A. Prosecution;
  - B. Revocation or modification of the permit;
  - C. Calling of any bond or assurance secured by the operator pursuant to the requirements of Section 23C.17.050; and/or
  - D. Removal of the facilities.
- 44.** Any FCC-licensed telecommunications carrier that is buying, leasing, or considering a transfer of ownership of an already approved facility, shall provide written notification to the Zoning Officer and request transfer of the existing Use Permit. The Zoning Officer may require submission of any supporting materials or documentation necessary to determine that the proposed use is in compliance with the existing Use Permit and all of its conditions including, but not limited to, statements, photographs, plans, drawings, models, and analysis by a State-licensed radio frequency engineer demonstrating compliance with all applicable regulations and standards of the Federal Communications Commission and the California Public Utilities Commission. If the

Zoning Officer determines that the proposed operation is not consistent with the existing Use Permit, he/she shall notify the applicant who may revise the application or apply for modification to the Use Permit pursuant to the requirements of Section 23B.56.

45. The applicant shall be responsible for paying all costs (including City staff time) associated with monitoring and/or enforcement of the above conditions. Fees shall be based on the adopted City fee schedule in place at the time the work is performed or action is taken.
  46. All exterior lighting shall be energy efficient where feasible; and shielded and directed downward and away from property lines to prevent excessive glare beyond the subject property.
  47. This permit is subject to review, imposition of additional conditions, or revocation if factual complaint is received by the Zoning Officer that the maintenance or operation of this establishment is violating any of these or other required conditions or is detrimental to the health, safety, peace, morals, comfort or general welfare of persons residing or working in the neighborhood or is detrimental or injurious to property and improvements in the neighborhood or to the general welfare of the City.
  48. Noise and exterior lighting shall be controlled so as to prevent verified complaints from the surrounding properties.
-



**BERKELEY HILLS**  
EBMUD BERRYMAN RESERVOIR, BERKELEY, CA 94708  
LOCATION NUMBER: 273566

**BERKELEY HILLS**  
  
273566  
EBMUD BERRYMAN RESERVOIR  
BERKELEY, CA 94708

**verizon**  
2785 MITCHELL DRIVE, BLDG 9  
WALNUT CREEK, CA 94598

**Streamline Engineering**  
and Design Inc.  
8446 Sierra College Blvd, Suite E Granite Bay, CA 95961  
Contact: Larry Houghton Phone: 916-275-4180  
E-Mail: larry@streamlineeng.com Fax: 916-960-1941  
THIS IS A PRELIMINARY DRAWING. ALL DIMENSIONS AND NOTES ARE SUBJECT TO CHANGE WITHOUT NOTICE. THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE ACCURACY OF ALL INFORMATION AND DATA. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL GOVERNING AUTHORITIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL GOVERNING AUTHORITIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL GOVERNING AUTHORITIES.

PRELIMINARY:  
NOT FOR  
CONSTRUCTION  
  
KEVIN R. SORENSEN  
S4469

ISSUE STATUS			
Δ	DATE	DESCRIPTION	REV.
	10/27/17	ZD 90%	D.G.
	12/11/17	CSR RED LINES	C.C.
	02/06/18	ZD 100%	D.L.
	03/13/18	CLIENT REV	D.G.
	-	-	-
	-	-	-

DRAWN BY: D. GARCIA  
CHECKED BY: J. GRAY  
APPROVED BY: -  
DATE: 03/13/18

**SHEET TITLE:**  
TITLE  
**SHEET NUMBER:**  
T-1

VERIZON WIRELESS EQUIPMENT ENGINEER: SIGNATURE _____ DATE _____	VERIZON WIRELESS REAL ESTATE: SIGNATURE _____ DATE _____
VERIZON WIRELESS CONSTRUCTION: SIGNATURE _____ DATE _____	VERIZON WIRELESS RF ENGINEER: SIGNATURE _____ DATE _____
PROPERTY OWNER: SIGNATURE _____ DATE _____	RIDGE COMMUNICATIONS - LEASING SIGNATURE _____ DATE _____
RIDGE COMMUNICATIONS - CONSTRUCTION SIGNATURE _____ DATE _____	RIDGE COMMUNICATIONS - ZONING SIGNATURE _____ DATE _____

**PROJECT DESCRIPTION**

A (P) VERIZON WIRELESS UNMANNED TELECOMMUNICATION FACILITY CONSISTING OF INSTALLING:

- (P) 50'-0" HIGH MONOPINE W/ (6) (P) VERIZON WIRELESS ANTENNAS
- (6) (P) RRU UNITS
- (2) (P) SURGE SUPPRESSORS, (1) Ⓞ EQUIPMENT & (1) Ⓞ ANTENNAS
- (P) VERIZON WIRELESS 25'-0"X20'-0" (500 SQ FT) EQUIPMENT LEASE AREA
- (P) VERIZON WIRELESS (177 SQ FT) MONOPINE LEASE AREA
- (P) GPS ANTENNA
- (P) VERIZON WIRELESS 30KW DIESEL GENERATOR ON 132 GALLON UL 2085 RATED FUEL TANK

**PROJECT INFORMATION**

SITE NAME:	BERKELEY HILLS	SITE #:	273566
COUNTY:	ALAMEDA	JURISDICTION:	CITY BERKELEY
APN:	060-2468-001-04	POWER:	PG&E
SITE ADDRESS:	EBMUD BERRYMAN RESERVOIR BERKELEY, CA 94708	FIBER:	AT&T
CURRENT ZONING:	R-1H (SINGLE FAMILY RESIDENTIAL)		
CONSTRUCTION TYPE:	V-B		
OCCUPANCY TYPE:	U, (UNMANNED COMMUNICATIONS FACILITY)		
PROPERTY OWNER:	EAST BAY MUNICIPAL UTILITY DISTRICT P.O. BOX 24055 OAKLAND, CA 94623 CONTACT: ROB KORN (510) 287-1246 ROBERT.KORN@EBMUD.COM		
APPLICANT:	VERIZON WIRELESS 2785 MITCHELL DRIVE, BLDG 9 WALNUT CREEK, CA 94598		
SITE ACQUISITION COMPANY:	RIDGE COMMUNICATION, INC (925)498-2340 12667 ALCOSTA BLVD, SUITE 175 SAN RAMON, CA 94583		
LEASING CONTACT:	ATTN: DAVID HADDOCK (916) 420-5802 DAVID.HADDOCK@RIDGECOMMUNICATE.COM		
ZONING CONTACT:	ATTN: DAVID HADDOCK (916) 420-5802 DAVID.HADDOCK@RIDGECOMMUNICATE.COM		
CONSTRUCTION CONTACT:	ATTN: KEITH SCHMID (408) 679-1141 KEITH.SCHMID@RIDGECOMMUNICATE.COM		

**VICINITY MAP**



**DRIVING DIRECTIONS**

FROM: 2785 MITCHELL DRIVE, BLDG 9, WALNUT CREEK, CA 94598  
TO: EBMUD BERRYMAN RESERVOIR, BERKELEY, CA 94708

1. HEAD NORTHEAST ON MITCHELL DR TOWARD OAK GROVE RD 30 FT
2. TURN RIGHT ONTO OAK GROVE RD 0.4 MI
3. TURN RIGHT ONTO YGNACIO VALLEY RD 3.4 MI
4. YGNACIO VALLEY RD TURNS RIGHT AND BECOMES HILLSIDE AVE 0.2 MI
5. TURN RIGHT ONTO THE 24 W RAMP TO OAKLAND 1.2 MI
6. CONTINUE ONTO CA-24 W/HWY 24 W 8.1 MI
7. KEEP LEFT AT THE FORK TO CONTINUE ON CA-24 W 1.4 MI
8. TAKE EXIT 5B TO MERGE ONTO CA-13 N TOWARD BERKELEY 0.4 MI
9. MERGE ONTO CA-13 N 1.0 MI
10. TURN RIGHT ONTO CLAREMONT AVE 164 FT
11. TURN LEFT ONTO CLAREMONT BLVD 0.2 MI
12. CONTINUE ONTO BELROSE AVE 0.1 MI
13. BELROSE AVE TURNS LEFT AND BECOMES DERBY ST 0.2 MI
14. TURN RIGHT ONTO WARRING ST 0.2 MI
15. SLIGHT LEFT ONTO PIEDMONT AVE 0.2 MI
16. AT THE TRAFFIC CIRCLE, CONTINUE STRAIGHT TO STAY ON PIEDMONT AVE 0.4 MI
17. CONTINUE ONTO GABLEY RD 0.3 MI
18. CONTINUE STRAIGHT ONTO LA LOMA AVE 0.1 MI
19. TURN LEFT ONTO LE CONTE AVE 0.2 MI
20. TURN RIGHT AT THE 2ND CROSS STREET ONTO EUCLID AVE 0.5 MI

END AT: EBMUD BERRYMAN RESERVOIR, BERKELEY, CA 94708  
ESTIMATED TIME: 29 MINUTES ESTIMATED DISTANCE: 18.4 MILES

VERIZON WIRELESS EMERGENCY CONTACT NUMBER TO BE POSTED AT SITE: VERIZON NOC#: (800) 264-6620

**CODE COMPLIANCE**

ALL WORK & MATERIALS SHALL BE PERFORMED & INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

2016 CALIFORNIA ADMINISTRATIVE CODE, PART 1, TITLE 24 C.C.R.  
2016 CALIFORNIA BUILDING CODE (CBC), PART 2, VOLUME 1&2, TITLE 24 C.C.R. (2015 INTERNATIONAL BUILDING CODE AND 2016 CALIFORNIA AMENDMENTS)  
2016 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 C.C.R. (2014 NATIONAL ELECTRICAL CODE AND 2016 CALIFORNIA AMENDMENTS)  
2016 CALIFORNIA MECHANICAL CODE (CMC) PART 4, TITLE 24 C.C.R. (2015 UNIFORM MECHANICAL CODE AND 2016 CALIFORNIA AMENDMENTS)  
2016 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 C.C.R. (2015 UNIFORM PLUMBING CODE AND 2016 CALIFORNIA AMENDMENTS)  
2016 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24 C.C.R.  
2016 CALIFORNIA FIRE CODE, PART 9, TITLE 24 C.C.R. (2015 INTERNATIONAL FIRE CODE AND 2016 CALIFORNIA AMENDMENTS)  
2016 CALIFORNIA GREEN BUILDING STANDARDS CODE, PART 11, TITLE 24 C.C.R.  
2016 CALIFORNIA REFERENCED STANDARDS, PART 12, TITLE 24 C.C.R.  
ANSI/EIA-TIA-222-G

ALONG WITH ANY OTHER APPLICABLE LOCAL & STATE LAWS AND REGULATIONS

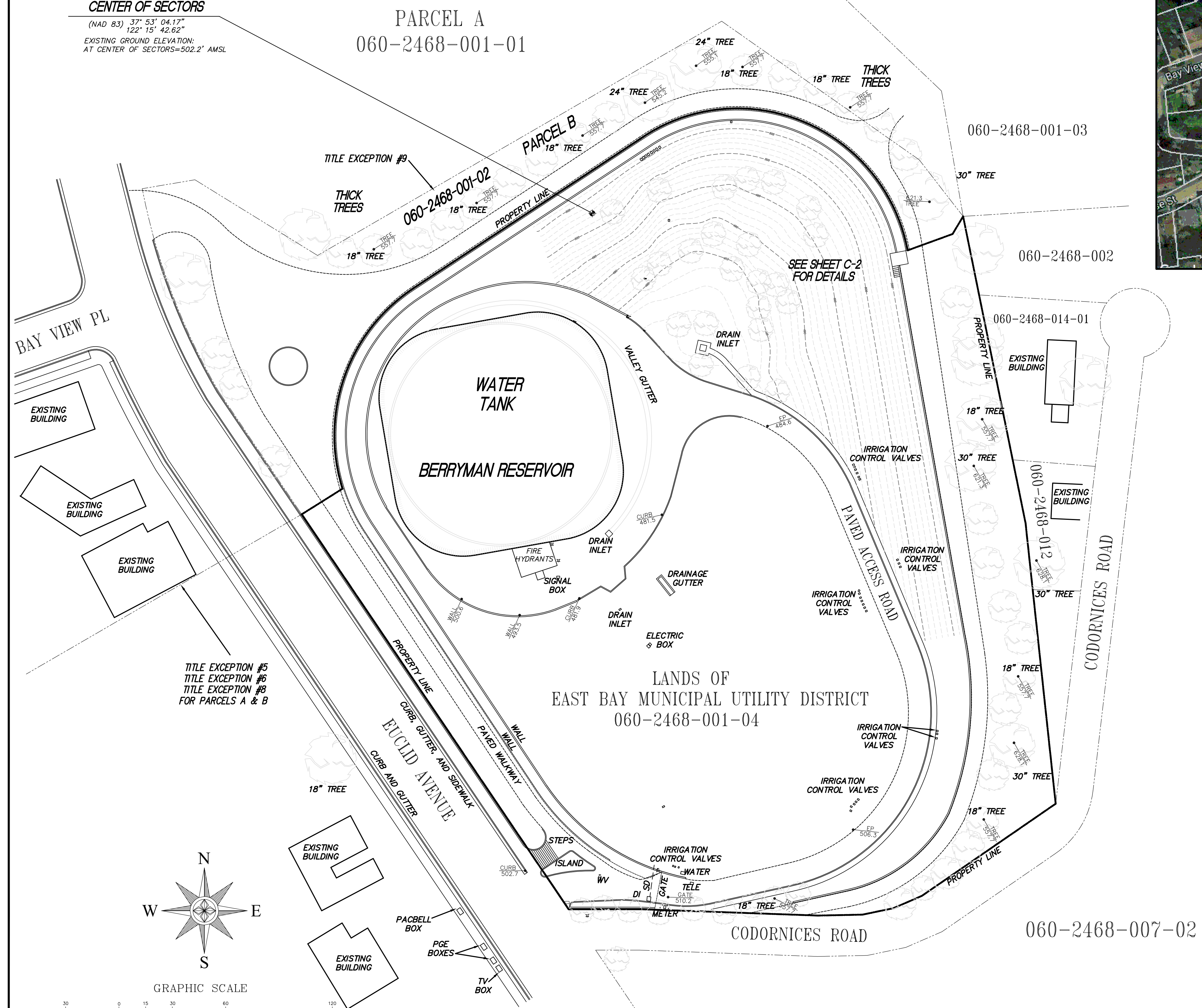
**DISABLED ACCESS REQUIREMENTS**

THIS FACILITY IS UNMANNED & NOT FOR HUMAN HABITATION. DISABLED ACCESS & REQUIREMENTS ARE NOT REQUIRED IN ACCORDANCE WITH CALIFORNIA STATE BUILDING CODE, TITLE 24 PART 2, SECTION 11B-203.4

**SHEET INDEX**

SHEET	DESCRIPTION	REV
T-1	TITLE SHEET	-
C-1	TOPOGRAPHIC SURVEY	-
C-2	TOPOGRAPHIC SURVEY	-
C-3	TOPOGRAPHIC SURVEY	-
A-1	SITE PLAN	-
A-2	ENLARGED SITE PLAN	-
A-3	EQUIPMENT PLAN & DETAILS	-
A-4	ANTENNA PLAN & DETAILS	-
A-5	ELEVATION	-
A-6	ELEVATION	-

GEODETIC COORDINATES TAKEN HERE AT CENTER OF SECTORS  
 (NAD 83) 37° 53' 04.17" 122° 15' 42.62"  
 EXISTING GROUND ELEVATION: AT CENTER OF SECTORS=502.2' AMSL



**PROPERTY INFORMATION**

OWNER: EAST BAY MUNICIPAL UTILITY DISTRICT  
 ADDRESS: 375 11TH STREET OAKLAND, CA 94607  
 SITE: BERKELEY HILLS EDMUND BERRYMAN RESERVOIR BERKELEY, CA 94708  
 ASSESSOR'S PARCEL NUMBER: 060-2468-001-04  
 EXISTING GROUND ELEVATION: AT CENTER OF SECTORS=502.2' AMSL

**UTILITY NOTES**

ALL EASEMENTS CONTAINED IN SAID TITLE REPORT AFFECTING THE IMMEDIATE AREA SURROUNDING THE LEASE HAVE BEEN PLOTTED. SURVEYOR HAS NOT PERFORMED A SEARCH OF PUBLIC RECORDS TO DETERMINE ANY DEFECT IN TITLE ISSUED. THE BOUNDARY SHOWN HEREON IS PLOTTED FROM RECORD INFORMATION AND DOES NOT CONSTITUTE A BOUNDARY SURVEY OF THE PROPERTY.

**TITLE REPORT**

TITLE REPORT WAS PROVIDED BY FIRST AMERICAN TITLE INSURANCE COMPANY, DOC. NO: 5026900-5517887, DATED: AUGUST 15, 2017. THE ABOVE TITLE REPORT COVER ALL OF THE ORIGINAL PARCELS FROM THE 1920'S, NOT JUST THE APN: 060-2468-001-04.

**SURVEYOR'S NOTES**

SURVEYOR DOES NOT GUARANTEE THAT ALL UTILITIES ARE SHOWN OR THEIR LOCATIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND DEVELOPER TO CONTACT U.S.A. AND ANY OTHER INVOLVED AGENCIES TO LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION. REMOVAL, RELOCATION AND/OR REPLACEMENT IS THE RESPONSIBILITY OF THE CONTRACTOR.

**BASIS OF BEARING**

BEARINGS SHOWN HEREON ARE BASED UPON U.S. STATE PLANE NAD83 COORDINATE SYSTEM STATE PLANE COORDINATE ZONE 3, DETERMINED BY GPS OBSERVATIONS.

**BENCHMARK**

ELEVATION ESTABLISHED FROM GPS DERIVED ORTHOMETRIC HEIGHTS, APPLYING GEOID 99 SEPARATIONS, CONSTRAINING TO NGS CONTROL STATION 'LUTZ' ELEVATION=450.0' (NAVD88)

**LESSOR'S LEGAL DESCRIPTION**

THE LAND IS SITUATED IN THE COUNTY OF ALAMEDA, STATE OF CALIFORNIA RECORDED MARCH 1, 1969 IN DOCUMENT NO. 079963.

**SURVEY DATE**

10/8/17

**LEGEND**

- |        |                      |                        |
|--------|----------------------|------------------------|
| P.O.B. | POINT OF BEGINNING   | WATER CONTROL VALVE    |
| TFC    | TOP FACE CURB        | FIRE HYDRANT           |
| R/W    | RIGHT OF WAY         | GUY CONDUCTOR          |
| GS     | GROUND SHOT          | FOUND AS NOTED         |
| DW     | ACCESS DRIVEWAY      | POWER POLE             |
| TOP    | TOP OF SLOPE         | LIGHT POLE             |
| SW     | SIDEWALK             | ELECTRICAL TRANSFORMER |
| JP     | JOINT POLE           | AIR CONDITIONING UNIT  |
| FH     | FIRE HYDRANT         | TELEPHONE PEDESTAL     |
| LN     | LOT NUMBER           | TELEPHONE VAULT        |
| CC     | GEODETIC COORDINATES | TELEPHONE MANHOLE      |
| SP     | SPOT ELEVATION       | GAS VALVE              |
| DA     | DISH ANTENNA         | GAS METER              |
|        |                      | PROPERTY LINE          |
|        |                      | CHAIN LINK FENCE       |

REV.	DESCRIPTION	DATE
1	SITE PLAN	10/15/2017
2	FINALIZE SURVEY	1/29/2018
3	EASEMENTS PLOTTED	5/20/2018



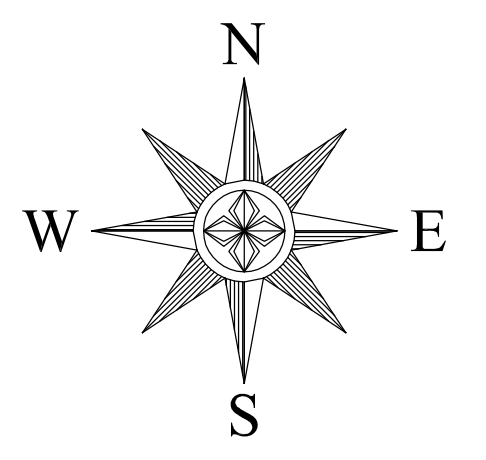
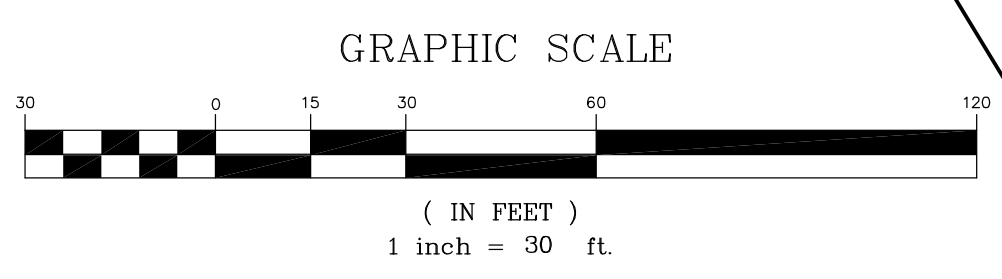
2785 MITCHELL DRIVE  
 WALNUT CREEK, CA. 94598  
 OFFICE: 925-279-6000  
 (925) 279-6333

**TOPOGRAPHIC SURVEY EXISTING CONDITIONS**

PSI# 273566  
 BERKELEY HILLS  
 EDMUND BERRYMAN RESERVOIR  
 BERKELEY, CA 94708

**C-1**  
 SHEET 1 of 3

OVERALL VIEW  
 30 SCALE



PARCEL A  
 060-2468-001-01

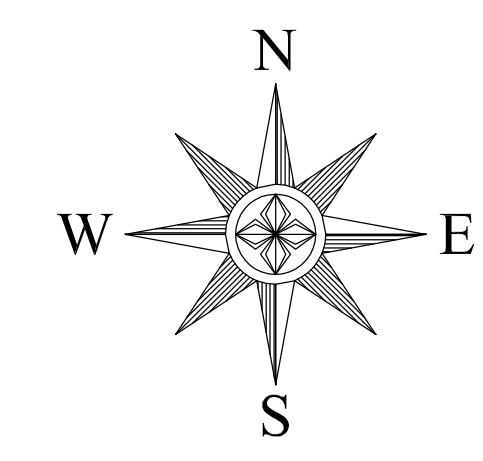
PARCEL B  
 060-2468-001-02

GEODETIC  
 COORDINATES  
 TAKEN HERE AT  
 CENTER OF SECTORS

(NAD 83) 37° 53' 04.17"  
 122° 15' 42.62"

EXISTING GROUND ELEVATION:  
 AT CENTER OF SECTORS=502.2' AMSL

THICK  
 TREES



REV.	DATE	DESCRIPTION
1	10/15/2017	SITE PLAN
2	1/29/2018	FINALIZE SURVEY
3	5/20/2018	EASEMENTS PLOTTED

**HAYES**  
 Land Surveying  
 And Mapping  
 2820 MADISON COURT  
 CONCORD, CA 94518



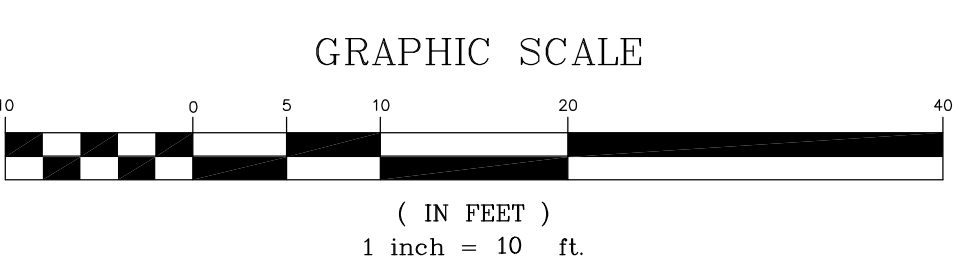
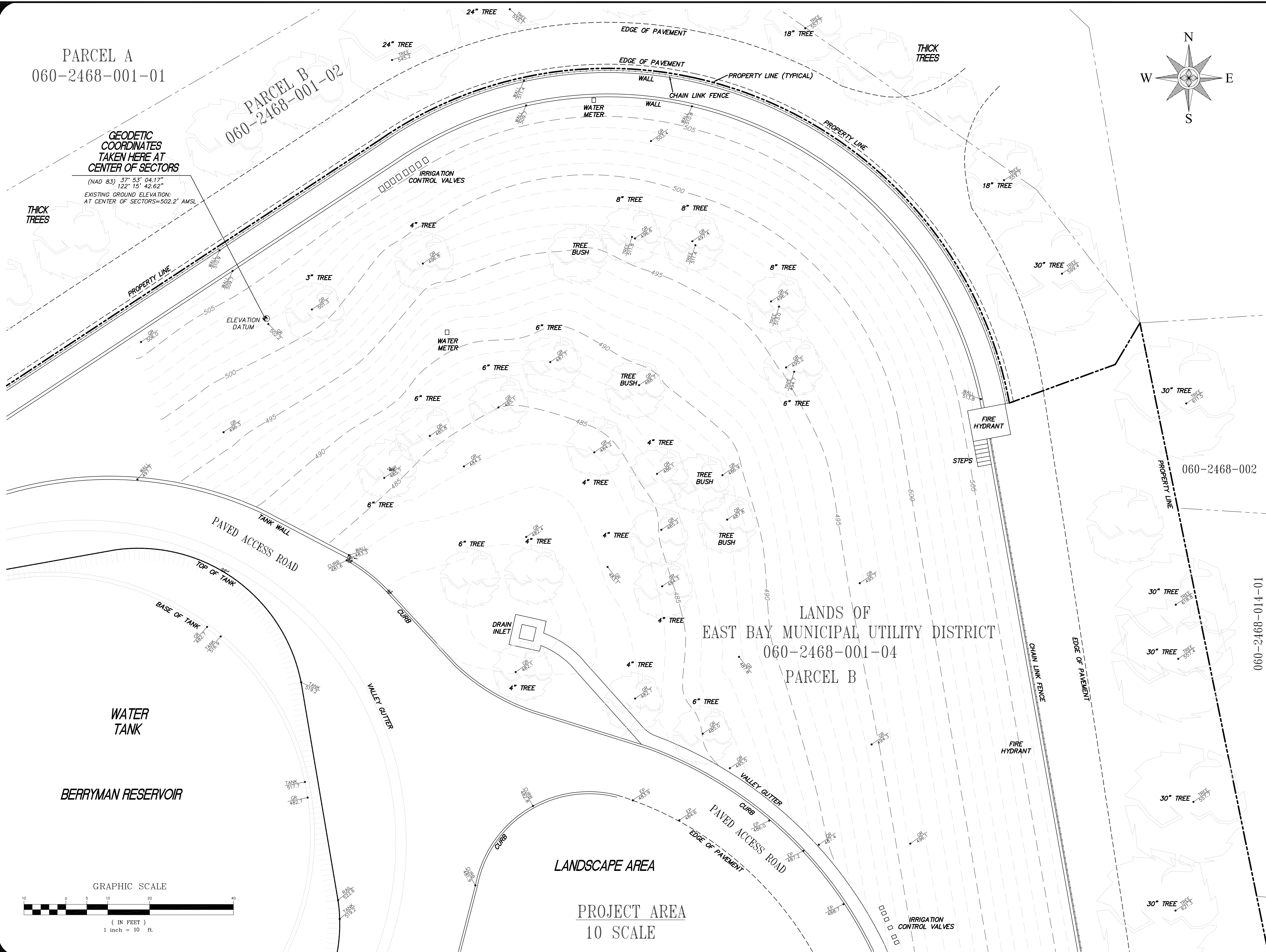
**verizon**  
 2785 MITCHELL DRIVE  
 WALNUT CREEK, CA. 94598  
 OFFICE: 925-279-6000  
 (925) 279-6333

**TOPOGRAPHIC SURVEY  
 EXISTING CONDITIONS**

PSL#273566  
 BERKELEY HILLS  
 EBMUD BERRYMAN RESERVOIR  
 BERKELEY, CA 94708

**C-2**

**SHEET 2 of 3**



PROJECT AREA  
 10 SCALE

060-2468-014-01

060-2468-002

LANDS OF  
 EAST BAY MUNICIPAL UTILITY DISTRICT  
 060-2468-001-04  
 PARCEL B

REV.	DATE	DESCRIPTION
1	10/15/2017	SITE PLAN
2	1/29/2018	FINALIZE SURVEY
3	5/20/2018	EASEMENTS PLOTTED

**HAYES**  
Land Surveying  
And Mapping  
2820 MADRAGON COURT  
CONCORD, CA 94518



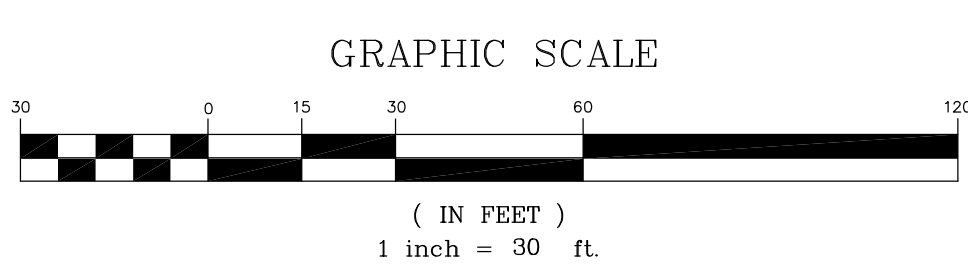
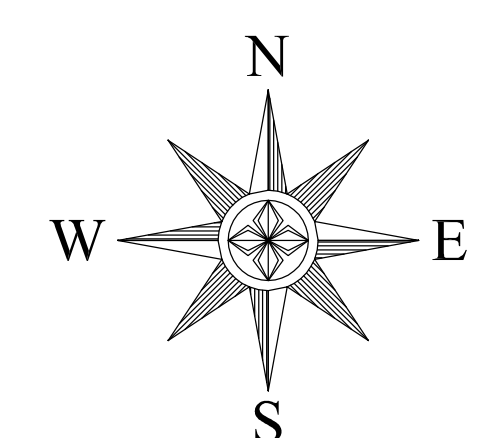
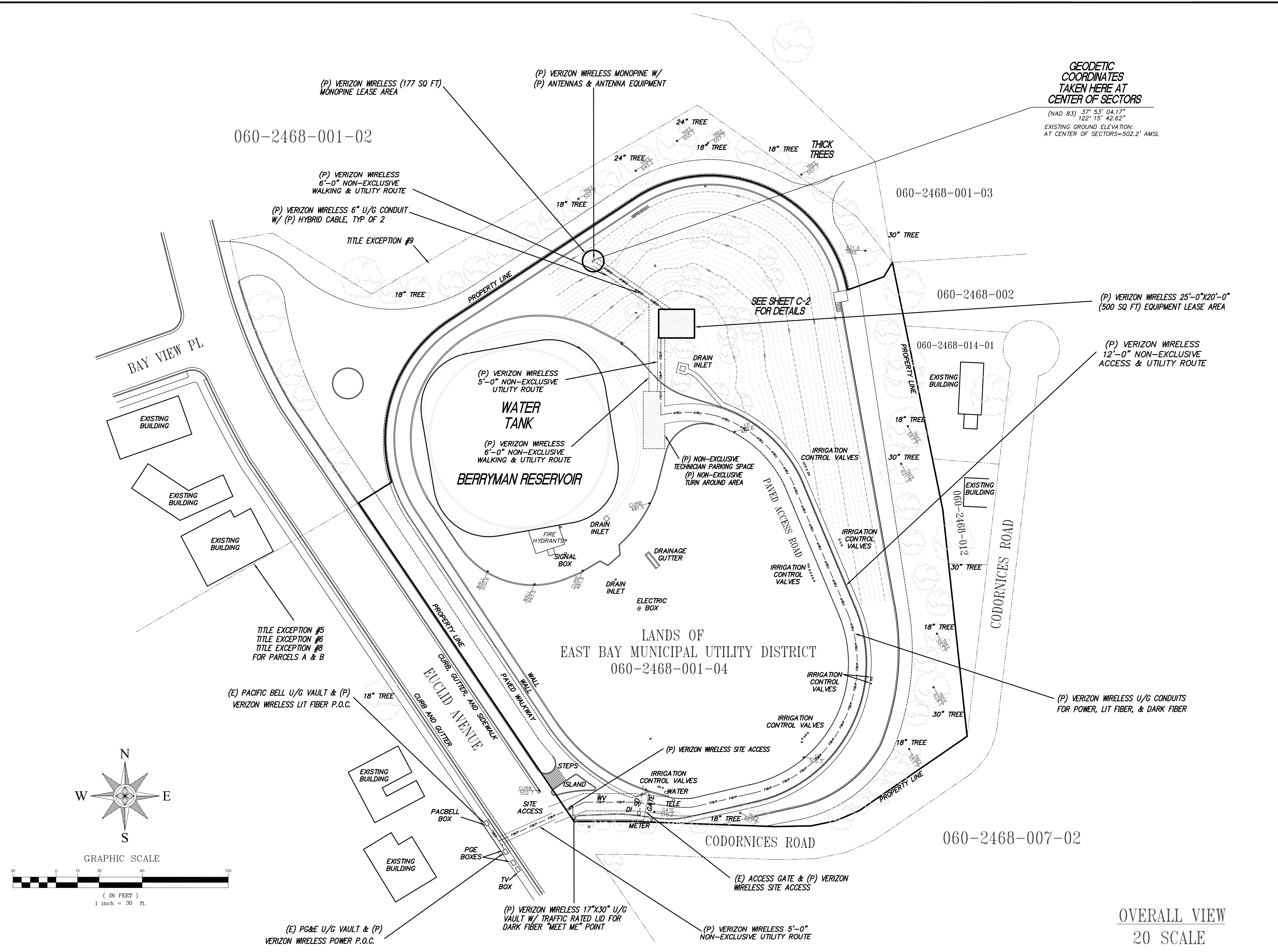
2785 MITCHELL DRIVE  
WALNUT CREEK, CA. 94598  
OFFICE: 925-279-6000  
(925) 279-6333

**TOPOGRAPHIC SURVEY  
EXISTING CONDITIONS**

PSL#273566  
BERKELEY HILLS  
EBMUD BERRYMAN RESERVOIR  
BERKELEY, CA 94708

**C-3**

**SHEET 3 of 3**



**OVERALL VIEW  
20 SCALE**



**BERKELEY HILLS**

273566  
EBMUD BERRYMAN RESERVOIR  
BERKELEY, CA 94708

**verizon**

2785 MITCHELL DRIVE BLDG 9  
WALNUT CREEK, CA 94698

**Streamline Engineering and Design, Inc.**  
8445 Sierra College Blvd, Suite F Granite Bay, CA 95681  
Contact: Larry Houshby Phone: 916-275-4180  
E-Mail: larry@streamlineeng.com Fax: 916-980-1941  
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PRELIMINARY:  
NOT FOR  
CONSTRUCTION

KEVIN R. SORENSEN  
S4469

ISSUE STATUS

Δ	DATE	DESCRIPTION	REV.
	10/27/17	ZD 90%	D.G.
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	02/06/18	ZD 100%	D.L.
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	-	-	-
	-	-	-

DRAWN BY: D. GARCIA

CHECKED BY: J. GRAY

APPROVED BY: -

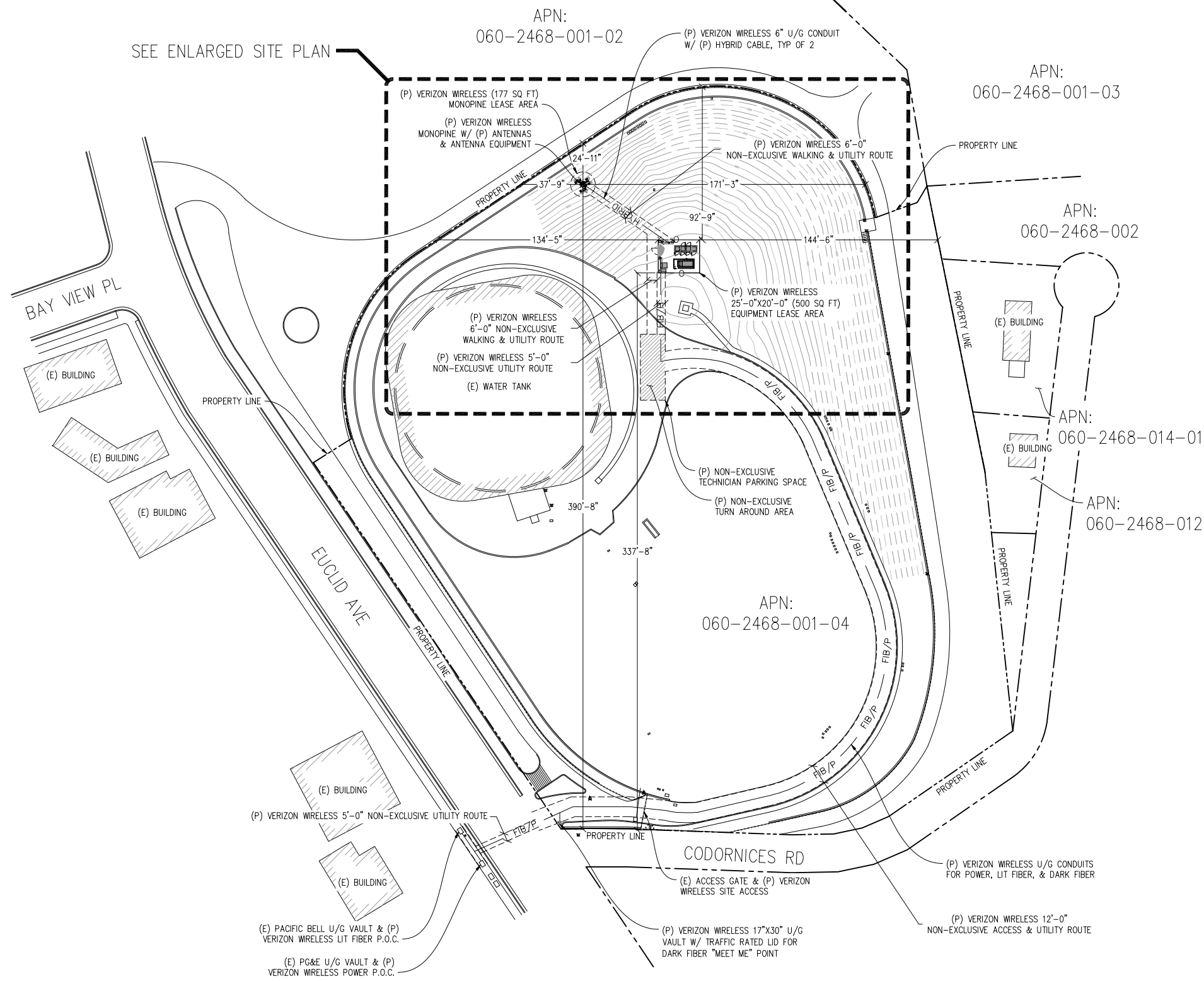
DATE: 03/13/18

SHEET TITLE:

SITE PLAN

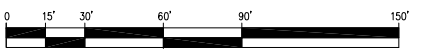
SHEET NUMBER:

A-1



SITE PLAN

1"=30'-0"



VERIZON WIRELESS EMERGENCY  
CONTACT NUMBER TO BE POSTED AT  
SITE: VERIZON NOC#: (800) 264-6620

CABLE LENGTHS:

POWER	= APPROX 624'
LIT FIBER	= APPROX 620'
DARK FIBER	= APPROX 558'
HYBRID	= APPROX 105'

**BERKELEY HILLS**

273566  
EBMUD BERRYMAN RESERVOIR  
BERKELEY, CA 94708

**verizon**

2785 MITCHELL DRIVE BLDG 9  
WALNUT CREEK, CA 94596

**Streamline Engineering**  
and Design, Inc.

8445 Starrs College Blvd, Suite E Granite Bay, CA 95661  
Contact: Larry Houchens Phone: 916-275-4180  
E-Mail: larry@streamlineeng.com Fax: 916-980-1941

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CONSTRUCTION

KEVIN R. SORENSEN  
S4469

ISSUE STATUS

Δ	DATE	DESCRIPTION	REV.
	10/27/17	ZD 90%	D.G.
	12/11/17	CSR RED LINES	C.C.
	02/06/18	ZD 100%	D.L.
	03/13/18	CLIENT REV	D.G.
	-	-	-
	-	-	-

DRAWN BY: D. GARCIA

CHECKED BY: J. GRAY

APPROVED BY: -

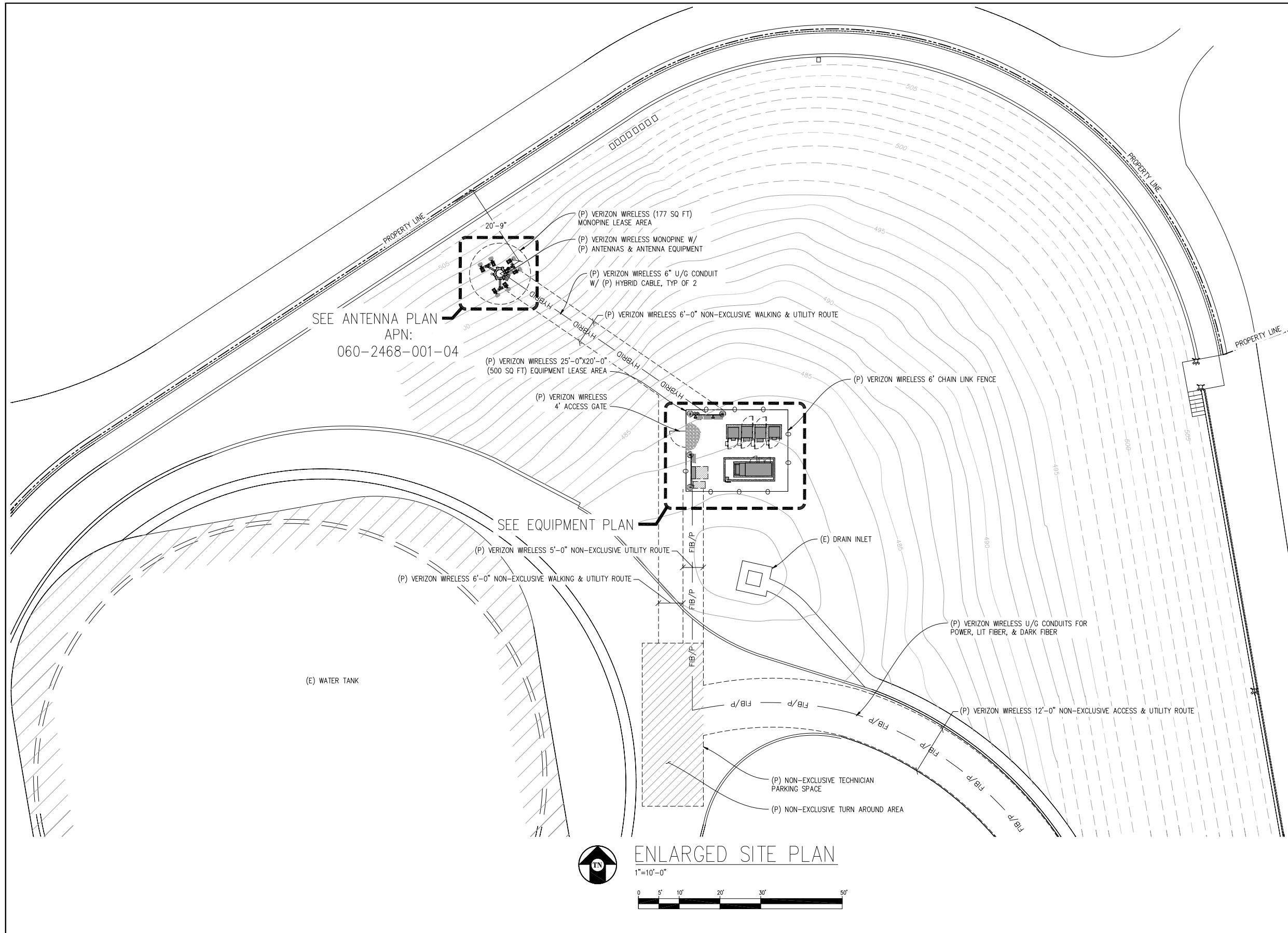
DATE: 03/13/18

SHEET TITLE:

ENLARGED SITE PLAN

SHEET NUMBER:

A-2



**BERKELEY HILLS**  
  
273566  
EBMUD BERRYMAN RESERVOIR  
BERKELEY, CA 94708

**verizon**  
2785 MITCHELL DRIVE BLDG 9  
WALNUT CREEK, CA 94598

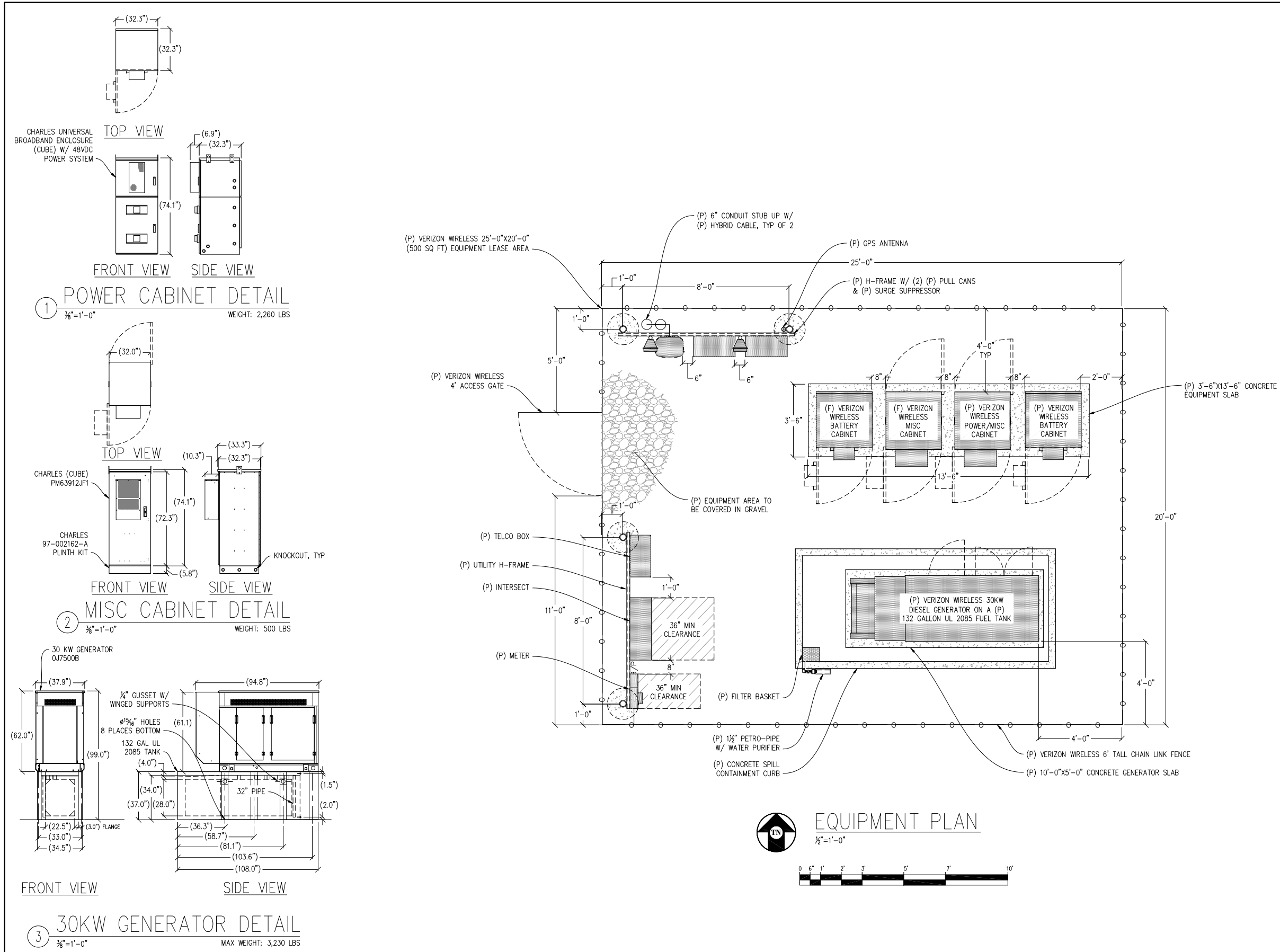
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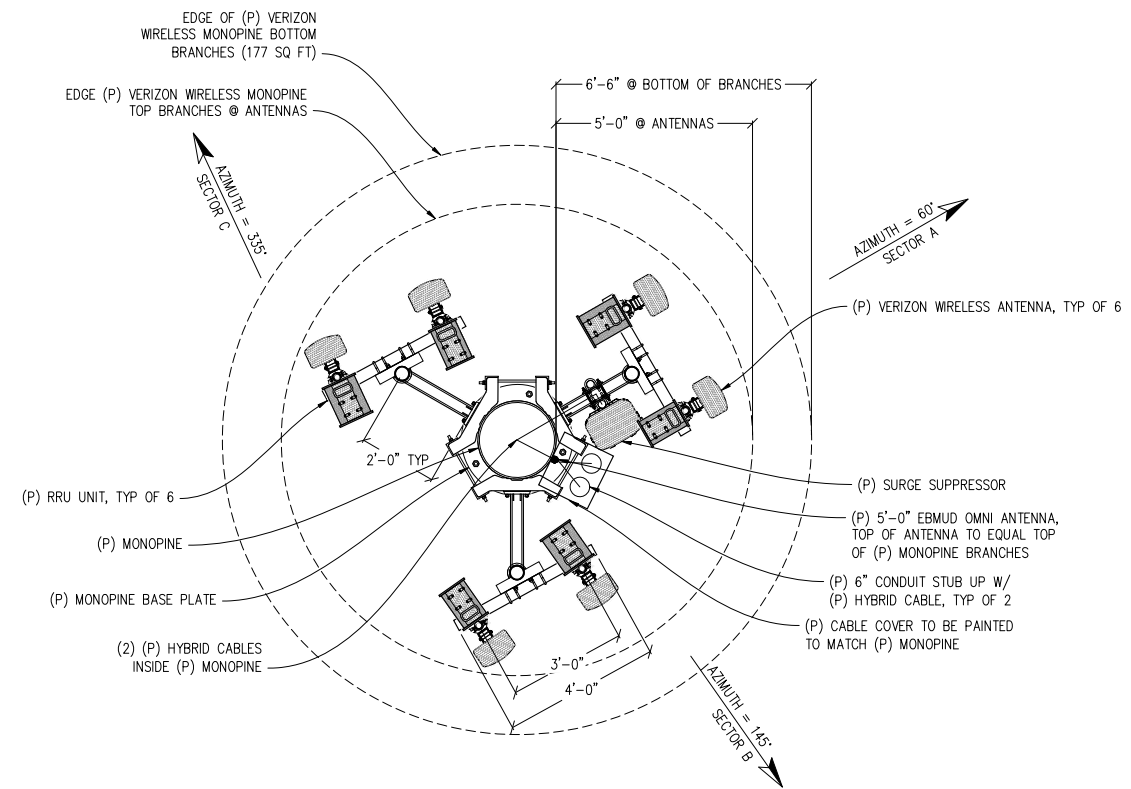
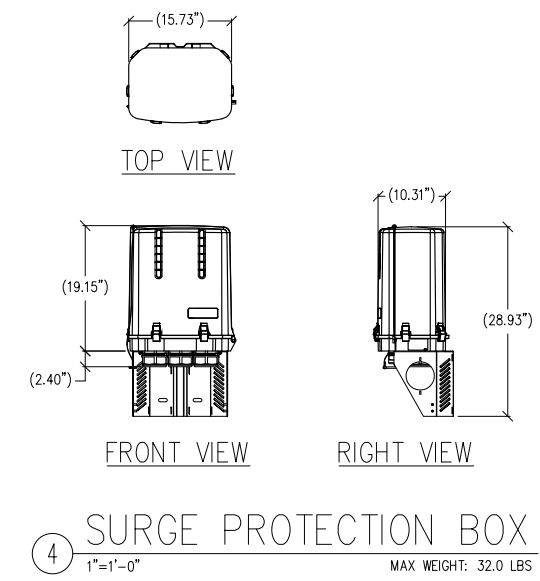
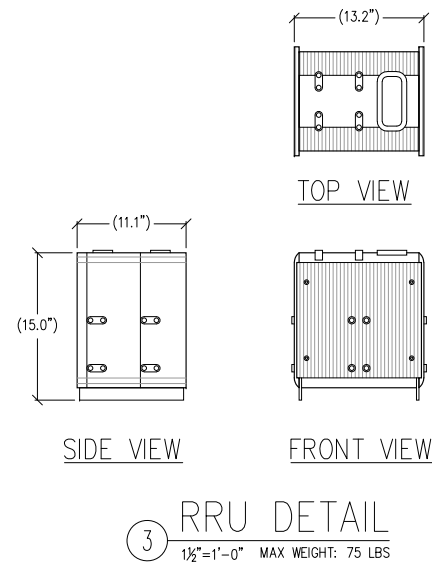
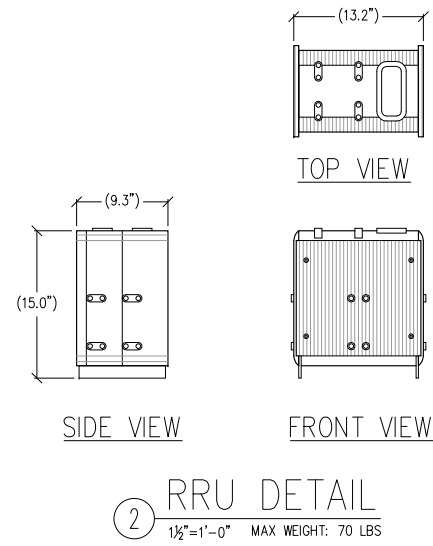
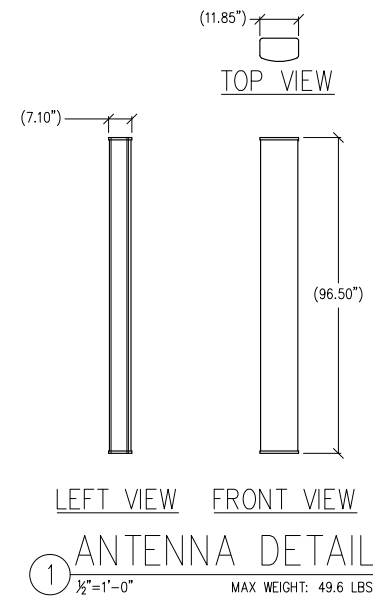
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ISSUE STATUS			
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	03/13/18	CLIENT REV	D.G.
	-	-	-
	-	-	-

DRAWN BY: D. GARCIA  
CHECKED BY: J. GRAY  
APPROVED BY: -  
DATE: 03/13/18

**SHEET TITLE:**  
EQUIPMENT PLAN  
& DETAILS  
**SHEET NUMBER:**  
**A-3**





- NOTES:
1. ALL (P) VERIZON WIRELESS ANTENNAS, ANTENNA MOUNTS, ANTENNA EQUIPMENT, EXPOSED CABLES, & (P) EBMUD OMNI ANTENNA TO BE PAINTED TO MATCH (P) MONOPINE & TO BE FULLY WITHIN (P) MONOPINE BRANCH RADIUS.
  2. ALL (P) VERIZON WIRELESS ANTENNAS TO BE COVERED IN MONOPINE SOCKS
  3. MONOPINE BRANCHES NOT SHOWN FOR CLARITY

**BERKELEY HILLS**  
273566  
EBMUD BERRYMAN RESERVOIR  
BERKELEY, CA 94708

**verizon**  
2785 MITCHELL DRIVE BLDG 9  
WALNUT CREEK, CA 94598

**Streamline Engineering**  
**and Design, Inc.**  
8445 Stern College Blvd, Suite F, Granite Bay, CA 95661  
Contact: Larry Houshby Phone: 916-275-4180  
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	02/06/18	ZD 100%	D.L.
	03/13/18	CLIENT REV	D.G.
	-	-	-
	-	-	-

DRAWN BY: D. GARCIA  
CHECKED BY: J. GRAY  
APPROVED BY: -  
DATE: 03/13/18

SHEET TITLE:  
ANTENNA PLAN  
& DETAILS  
SHEET NUMBER:  
**A-4**

**BERKELEY HILLS**

273566  
EBMUD BERRYMAN RESERVOIR  
BERKELEY, CA 94708

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	-	-	-
	-	-	-

DRAWN BY: D. GARCIA

CHECKED BY: J. GRAY

APPROVED BY: -

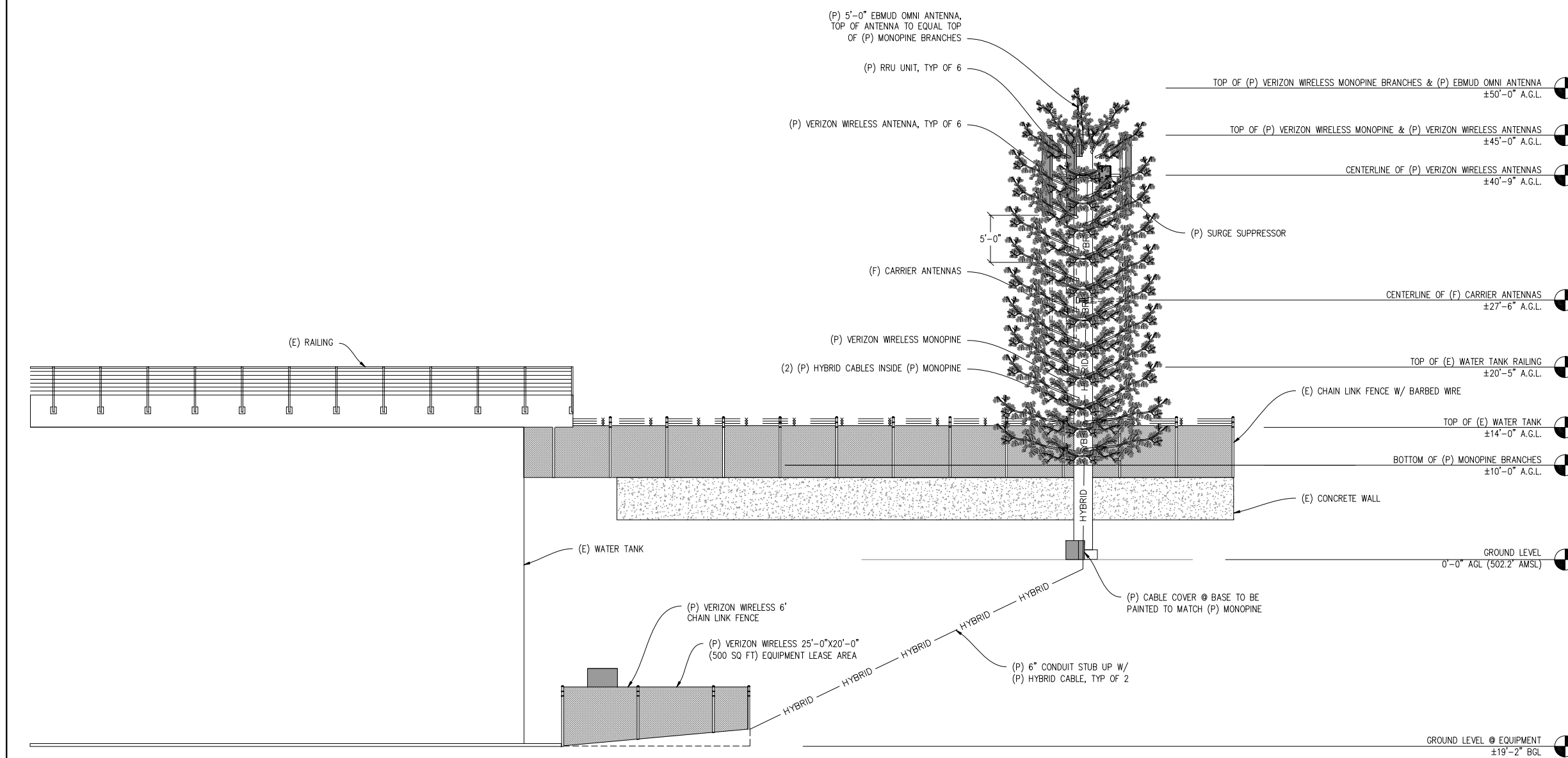
DATE: 03/13/18

SHEET TITLE:

ELEVATION

SHEET NUMBER:

A-5



**EAST ELEVATION**  
3/8"=1'-0"

NOTES:  
1. ALL (P) VERIZON WIRELESS ANTENNAS, ANTENNA MOUNTS, ANTENNA EQUIPMENT, EXPOSED CABLES, & (P) EBMUD OMNI ANTENNA TO BE PAINTED TO MATCH (P) MONOPINE & TO BE FULLY WITHIN (P) MONOPINE BRANCH RADIUS.  
2. ALL (P) VERIZON WIRELESS ANTENNAS TO BE COVERED IN MONOPINE SOCKS

**BERKELEY  
HILLS**

273566  
EBMUD BERRYMAN RESERVOIR  
BERKELEY, CA 94708

**verizon**

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DRAWN BY: D. GARCIA

CHECKED BY: J. GRAY

APPROVED BY: -

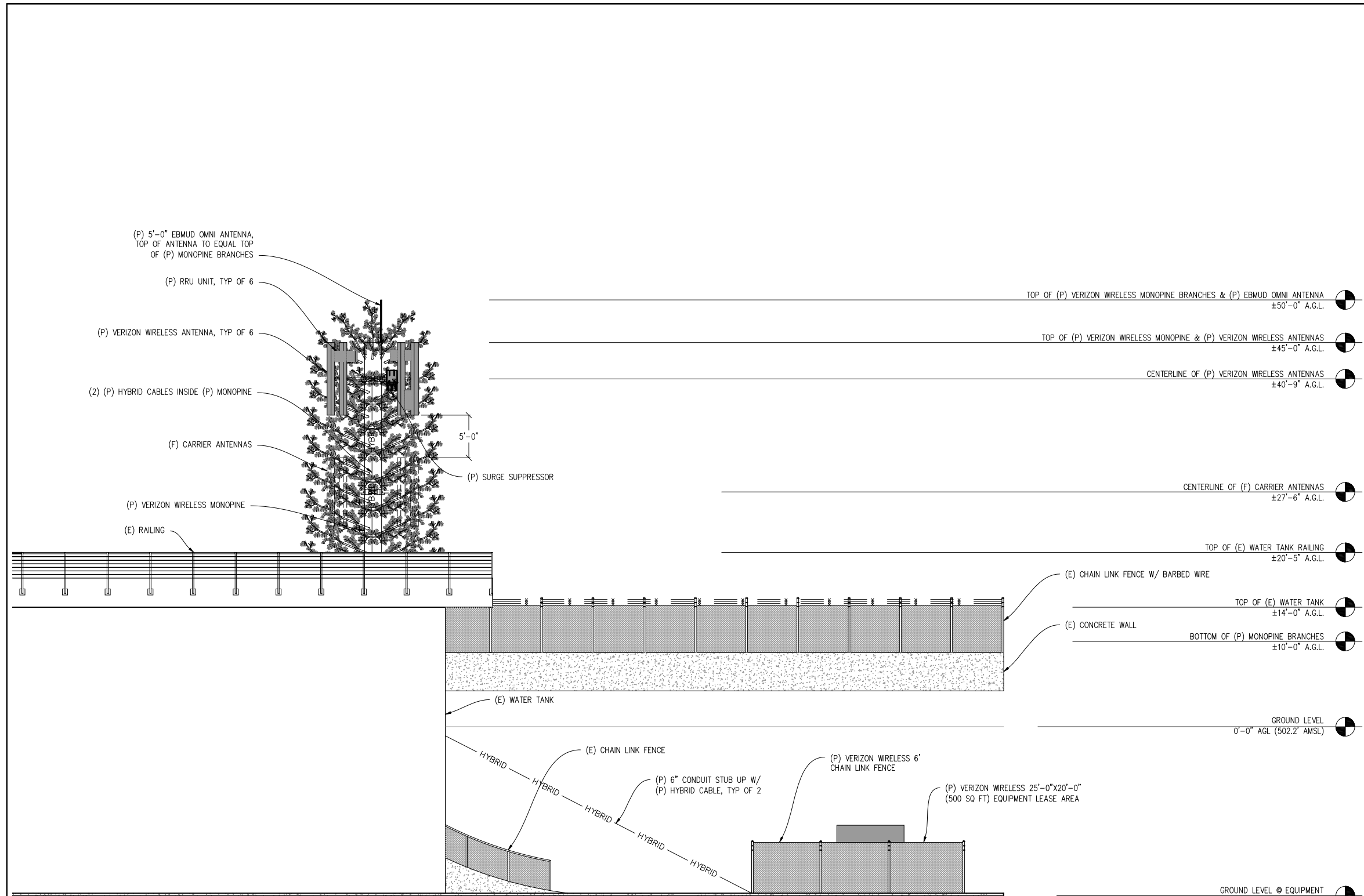
DATE: 03/13/18

**SHEET TITLE:**

ELEVATION

**SHEET NUMBER:**

**A-6**



**SOUTH ELEVATION**  
3/8"=1'-0"

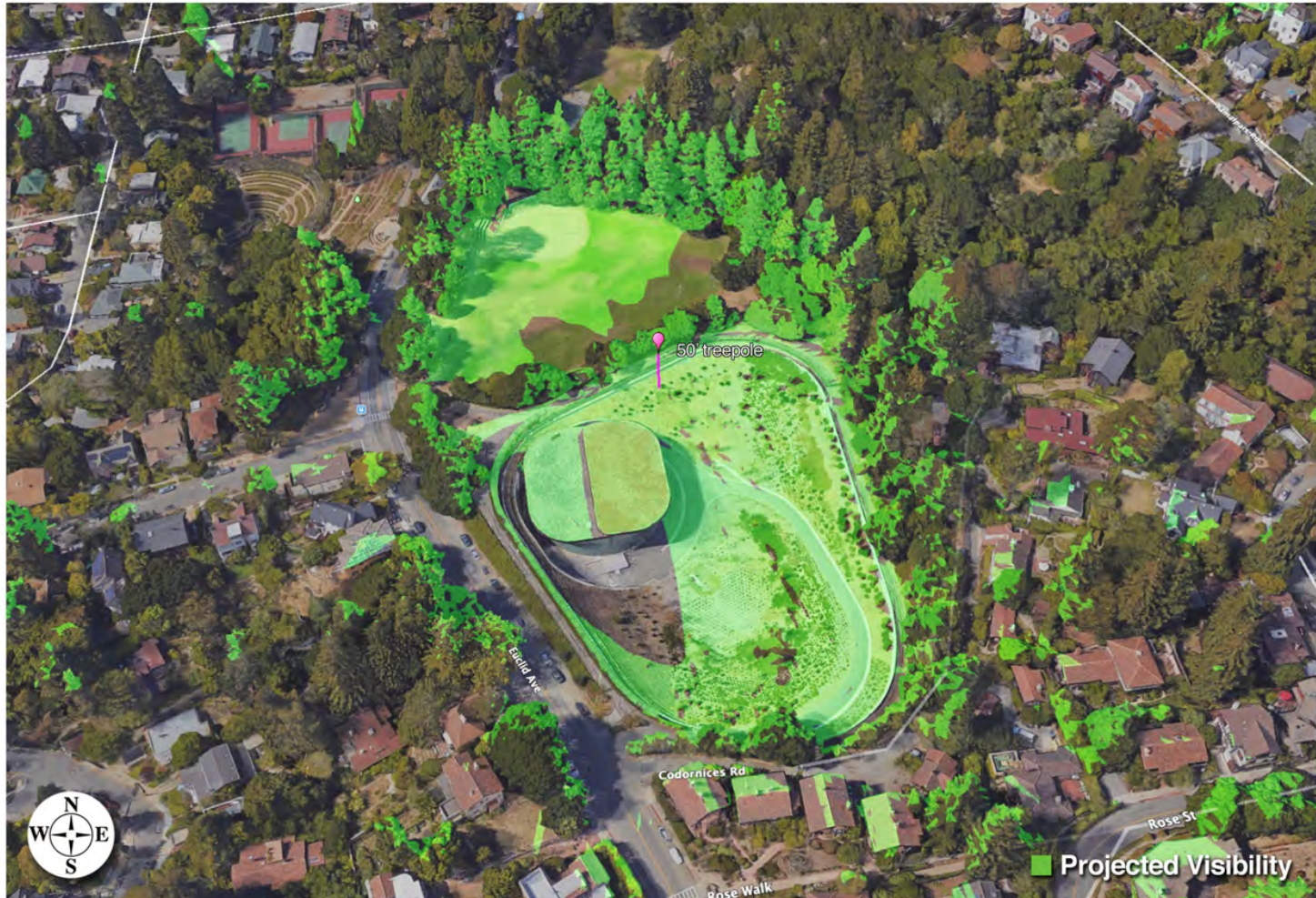
NOTES:  
1. ALL (P) VERIZON WIRELESS ANTENNAS, ANTENNA MOUNTS, ANTENNA EQUIPMENT, EXPOSED CABLES, & (P) EBMUD OMNI ANTENNA TO BE PAINTED TO MATCH (P) MONOPINE & TO BE FULLY WITHIN (P) MONOPINE BRANCH RADIUS.  
2. ALL (P) VERIZON WIRELESS ANTENNAS TO BE COVERED IN MONOPINE SOCKS











Projected visibility generated using Google Earth data. Actual visibility may be affected by conditions not reflected in the available data.



Berkeley Hills Site # 237566

Viewshed Map

11/6/18

EBMUD Berryman Reservoir  
Berkeley, CA

Applied Imagination 510 914-0500





Existing



proposed monopole

Proposed



Existing



proposed antennas behind screening

Proposed



Existing



proposed antennas behind screening

Proposed





Existing



Proposed





Existing



proposed monopole

Proposed



Existing



proposed antennas behind screening

Proposed



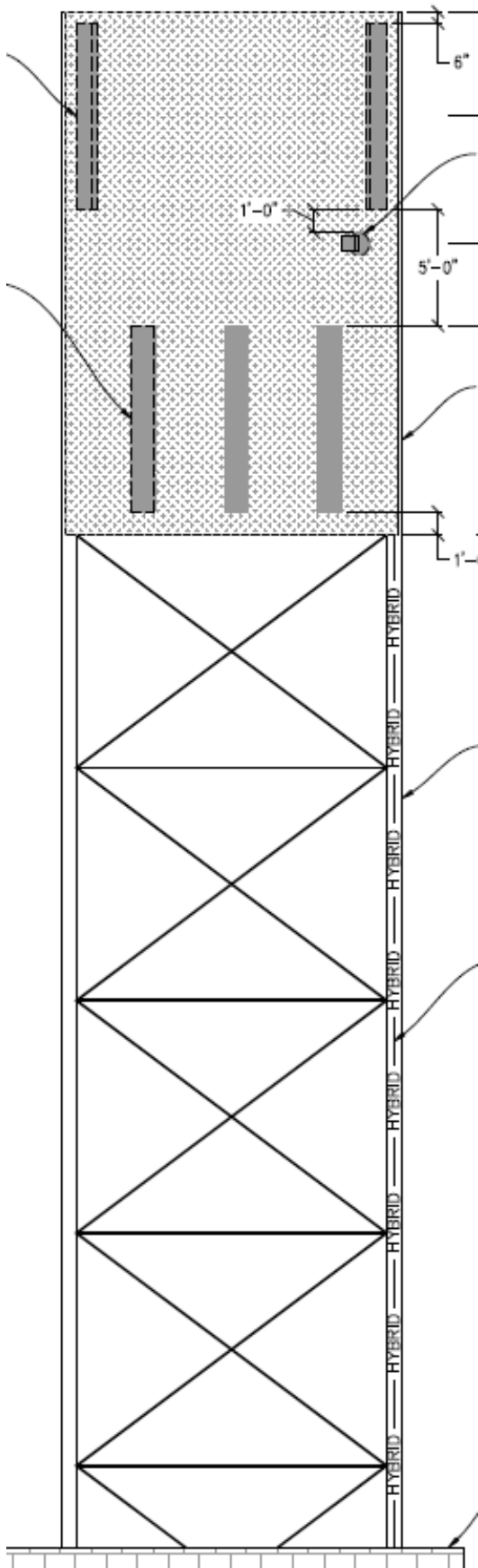
Existing



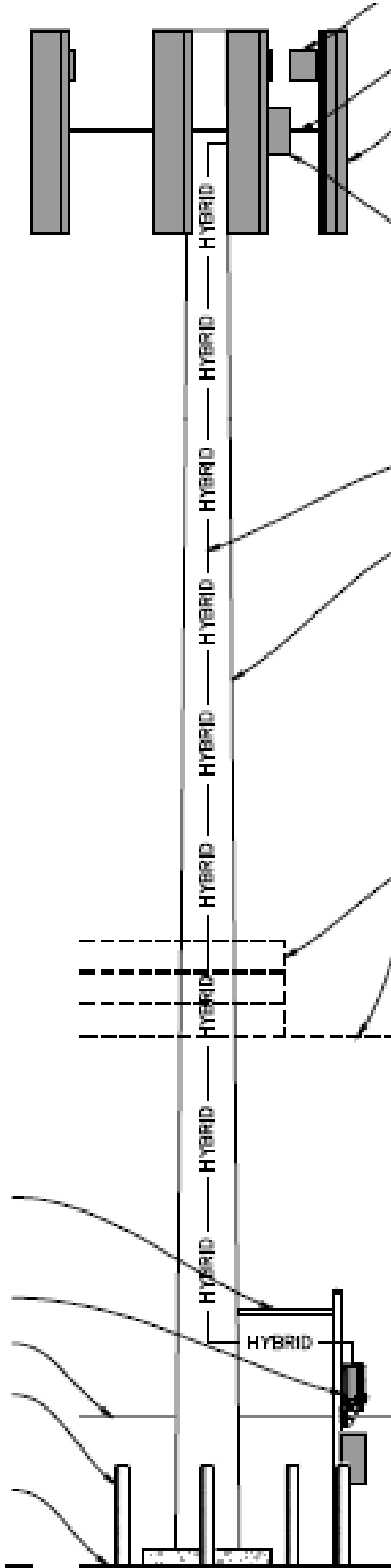
Proposed







Example four legged tower with FRP screen panels at the top.



Standard Monopole



Z O N I N G  
A D J U S T M E N T S  
B O A R D

---

NOTICE OF PUBLIC HEARING

## 0 Euclid Avenue – Berryman Reservoir

Use Permit #ZP2018-0236 to establish a new 50' high "monopole" 4G LTE wireless facility operated by Verizon Wireless at the East Bay Municipal Utility District site consisting of six antennas, six remote radio units, and associated ground equipment.

The Zoning Adjustments Board of the City of Berkeley will hold a public hearing on the above matter, pursuant to Zoning Ordinance Section 23B.32.020, on **Thursday, June 27, 2019** at the **Berkeley Unified School District meeting room, 1231 Addison Street**, (wheelchair accessible). The meeting starts at 7:00 p.m.

### PERMITS REQUIRED:

- Use Permit to establish a Wireless Telecommunications Facility,
- Administrative Use Permit to establish Wireless Telecommunications Facility, other than those located within the public right-of-way built higher than 35' in height in the R-1H Single Family Residential District, Hillside Overlay

**APPLICANT:** David Haddock, Ridge Communications Inc for Verizon Wireless, 12919 Alcosta Blvd, Suite 1, San Ramon, CA 94583

**ZONING DISTRICT:** R-1H, Single Family Residential District – Hillside Overlay

**ENVIRONMENTAL REVIEW STATUS:** Categorically exempt pursuant to Sections 15301 and 15303 of the CEQA Guidelines ("Existing Facilities and New Construction or Conversion of Small Structures").

The Zoning Application and application materials for this project is available online at: <http://www.cityofberkeley.info/zoningapplications>

The agenda and staff report for this meeting will be available online 3 to 5 days prior to this meeting at: <http://www.cityofberkeley.info/zoningadjustmentsboard>

### Communication Disclaimer

- Communications to Berkeley boards, commissions or committees are public record and will become part of the City's electronic records, which are accessible through the City's website. **Please note: e-mail addresses, names, addresses, and other contact information are not required, but if included in any communication to a City board,**



**commission or committee, will become part of the public record.** If you do not want your e-mail address or any other contact information to be made public, you may deliver communications via U.S. Postal Service or in person to the secretary of the relevant board, commission or committee. If you do not want your contact information included in the public record, please do not include that information in your communication. Please contact the secretary to the relevant board, commission or committee for further information.

### **Communications and Reports**

Items received by the deadlines for submission will be compiled and distributed as follows. If no items are received by the deadline, no supplemental packet will be compiled for said deadline. All materials will be made available via the Zoning Adjustments Board Agenda page: <https://www.cityofberkeley.info/zoningadjustmentboard/>

- **To distribute correspondence to Board members as an attachment to the Staff Report** -- submit comments **by 12:00 noon, seven (7) days before the meeting.** Please provide 15 copies of any correspondence with more than ten (10) pages or if in color or photographic format.
- **Supplemental Communications and Reports 1** - All Materials submitted between noon the Thursday the week before the meeting and noon Tuesday the week of the meeting, will be made available by 5:00 p.m. on Tuesday the week of the meeting.
- **Supplemental Communications and Reports 2** - All Materials submitted after noon on Tuesday the week of the meeting and before noon on Wednesday, the day before the meeting, will be made available at 5:00 that Wednesday. Any correspondence received after this deadline will be given to the Zoning Adjustment Board just prior to the meeting.
- Members of the public may submit written comments themselves at the meeting. To distribute correspondence at the meeting, please provide 15 copies and submit to the Zoning Adjustments Board Clerk. Correspondence received later, and after the meeting, will be posted to the web site following the meeting.
- **Please Note: You are strongly advised to submit written comments prior to noon Wednesday, the day before the meeting, as Board members do not have an opportunity to read written materials handed out at the meeting.**
- Written comments should be directed to the ZAB Secretary at: Land Use Planning Division (Attn: ZAB Secretary), 1947 Center Street, Berkeley, CA 94704 OR at [zab@cityofberkeley.info](mailto:zab@cityofberkeley.info)

### **Notice of Decision Requests**

Written comments or a request for a Notice of Decision should be directed to the Zoning Adjustments Board Secretary at [zab@cityofberkeley.info](mailto:zab@cityofberkeley.info)



### **Accessibility Information / ADA Disclaimer**

This meeting is being held in a wheelchair accessible location. To request a disability-related accommodation(s) to participate in the meeting, including auxiliary aids or services, please contact the Disability Services specialist at 981-6342 (V) or 981-6345 (TDD) at least three business days before the meeting date. Please refrain from wearing scented products to this meeting.

**SB 343 Disclaimer**

Any writings or documents provided to a majority of the Commission regarding any item on this agenda will be made available for public inspection at the Permit Service Center, Planning and Development Department located at 1947 Center Street, Third Floor, Berkeley, during regular business hours.

**Notice Concerning Your Legal Rights**

If you object to a decision by the Zoning Adjustments Board regarding a land use permit project, the following requirements and restrictions apply:

1. If you challenge the decision of the City in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the Zoning Adjustments Board at, or prior to, the public hearing.
2. You must appeal to the City Council within fourteen (14) days after the Notice of Decision of the action of the Zoning Adjustments Board is mailed. It is your obligation to notify the Land Use Planning Division in writing of your desire to receive a Notice of Decision when it is completed.
3. Pursuant to Code of Civil Procedure Section 1094.6(b) and Government Code Section 65009(c)(1), no lawsuit challenging a City Council decision, as defined by Code of Civil Procedure Section 1094.6(e), regarding a use permit, variance or other permit may be filed more than ninety (90) days after the date the decision becomes final, as defined in Code of Civil Procedure Section 1094.6(b). Any lawsuit not filed within that ninety (90) day period will be barred.
4. Pursuant to Government Code Section 66020(d)(1), notice is hereby given to the applicant that the 90-day protest period for any fees, dedications, reservations, or other exactions included in any permit approval begins upon final action by the City, and that any challenge must be filed within this 90-day period.
5. If you believe that this decision or any condition attached to it denies you any reasonable economic use of the subject property, was not sufficiently related to a legitimate public purpose, was not sufficiently proportional to any impact of the project, or for any other reason constitutes a "taking" of property for public use without just compensation under the California or United States Constitutions, the following requirements apply:
  - A. That this belief is a basis of your appeal.
  - B. Why you believe that the decision or condition constitutes a "taking" of property as set forth above.
  - C. All evidence and argument in support of your belief that the decision or condition constitutes a "taking" as set forth above.

If you do not do so, you will waive any legal right to claim that your property has been taken, both before the City Council and in court.

**Further Information**

Questions about the project should be directed to the project planner, Loyal Nawfal, at (510) 981-7424 or Lnawfal@cityofberkeley.info. All project application materials, including full-size plans, may be viewed at the Permit Service Center (Zoning Counter), 1947 Center Street, Third Floor, during normal office hours.



## WIRELESS RADIO FREQUENCY PLANNING MEMORANDUM

**TO:** Rincon Consultants, Inc.  
**FROM:** Telecom Law Firm, P.C.  
**DATE:** May 24, 2019  
**CLIENT:** Rincon's Client – City of Berkeley, California  
**ADDRESS:** East Bay Municipal Utility District ("EBMUD")  
Berryman Reservoir, Berkeley, California  
**CARRIER:** Verizon

**LOCATION NO:** 273566  
**LOCATION ID:** BERKELEY HILLS  
**RINCON JOB #:** 19-07869

### 1. Summary

Telecom Law Firm, PC ("TLF"), subcontractor to Rincon Consultants, Inc. ("Rincon"), recommends that the City of Berkeley ("City") require Verizon to follow the City's Municipal Code pertaining to RF safety (BMC 23C.17.090).

Based on the RF emissions data for this project as shown in the Hammett and Edison ("H&E") Radio Frequency report ("H&E RF Report"), the project does demonstrate planned compliance with the FCC's RF emissions rules, thus the City has no basis to deny the project based solely on RF emissions concerns.

### 2. Project Description

The City, through Rincon, requested that TLF review Verizon's proposal in regard to radio frequency emissions in connection with Verizon's plan to construct and operate a new wireless site at the East Bay Municipal Utility District ("EBMUD") Berryman Reservoir in Berkeley, California. This memorandum assesses whether Verizon's proposal demonstrates planned compliance with the federal radio frequency exposure guidelines.

Verizon proposes to construct a new wireless facility north of the existing water tank on the property. The project plans are most recently dated March 13, 2018 through May 20, 2018 (the "Plans"). Verizon's Plans show that the facility will be comprised of a 50-foot high monopine and associated equipment at the antenna, and at an associated 25' x 20' leased area for additional equipment associated with the antennas and standby powering.

Figure 1 is Verizon's project description submitted on the face of the Plans.

Rincon Consultants, Inc.

May 24, 2019

Page 2

PROJECT DESCRIPTION
A (P) VERIZON WIRELESS UNMANNED TELECOMMUNICATION FACILITY CONSISTING OF INSTALLING: <ul style="list-style-type: none"><li>• (P) 50'-0" HIGH MONOPINE W/ (6) (P) VERIZON WIRELESS ANTENNAS</li><li>• (6) (P) RRU UNITS</li><li>• (2) (P) SURGE SUPPRESSORS, (1) Ⓞ EQUIPMENT &amp; (1) Ⓞ ANTENNAS</li><li>• (P) VERIZON WIRELESS 25'-0"X20'-0" (500 SQ FT) EQUIPMENT LEASE AREA</li><li>• (P) VERIZON WIRELESS (177 SQ FT) MONOPINE LEASE AREA</li><li>• (P) GPS ANTENNA</li><li>• (P) VERIZON WIRELESS 30KW DIESEL GENERATOR ON 132 GALLON UL 2085 RATED FUEL TANK</li></ul>

Figure 1: Verizon's Project Description (Source: Plans, title page T-1).

Verizon proposes to install on the monopine six panel antennas distributed evenly with two panel antennas in three sectors (Sector A oriented towards 60° true north ("TN"), Sector B oriented towards 145°TN, and Sector C oriented towards 335°TN).

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Rincon Consultants, Inc.

May 24, 2019

Page 3

See Figure 2 for the approximate location of the monopine and azimuths.



**Figure 2:** Approximate (i) location of monopine, and (ii) azimuth orientations for all three sectors (Source: Google Maps; Annotated by Dr. Kramer).

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Rincon Consultants, Inc.

May 24, 2019

Page 4

Figure 3 depicts the overall location of the monopine and associated base station equipment.

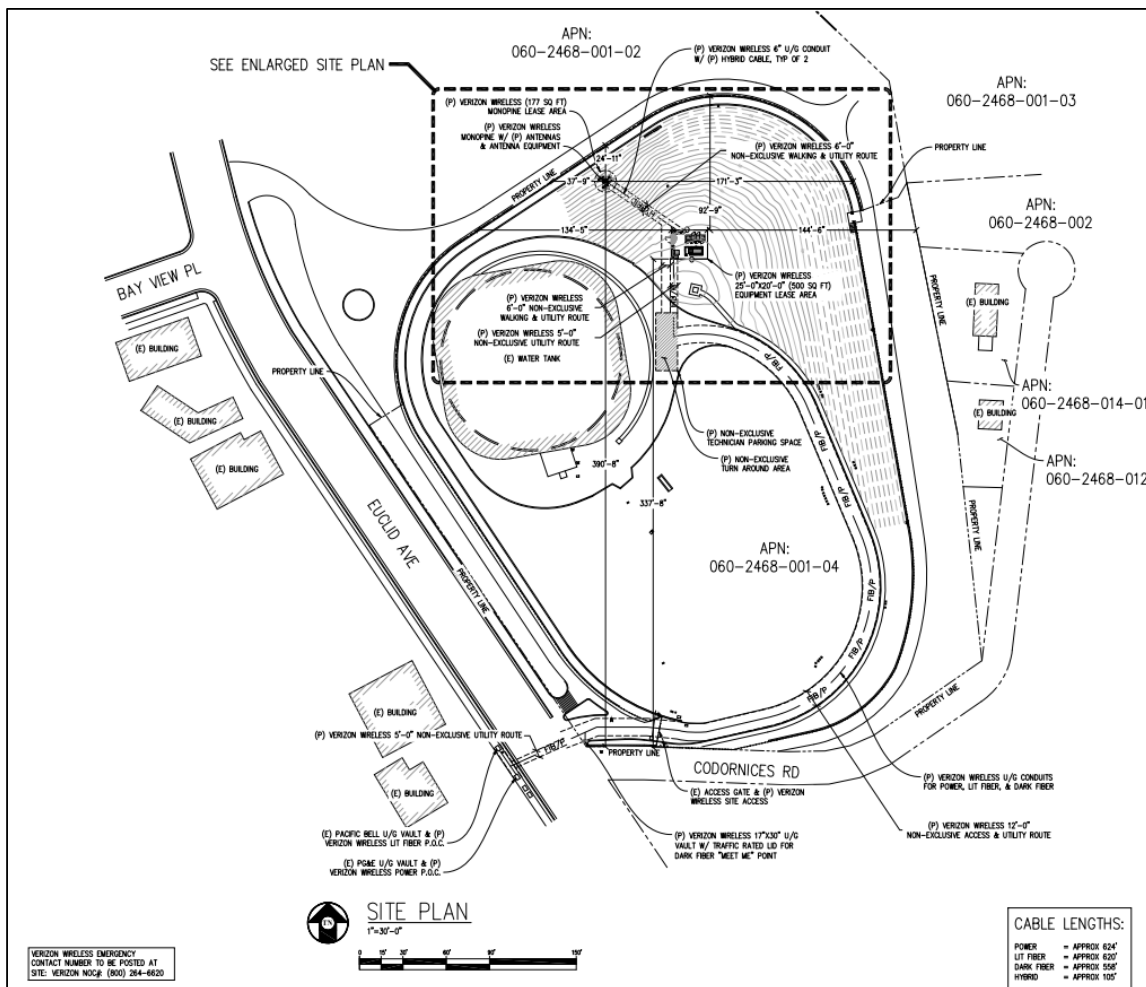


Figure 3: Overall location of the monopine and associated equipment (Source: Plans, Page A-1).

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Rincon Consultants, Inc.

May 24, 2019

Page 5

See Figure 4 for the proposed antenna layout within the canopy of the proposed monopine.

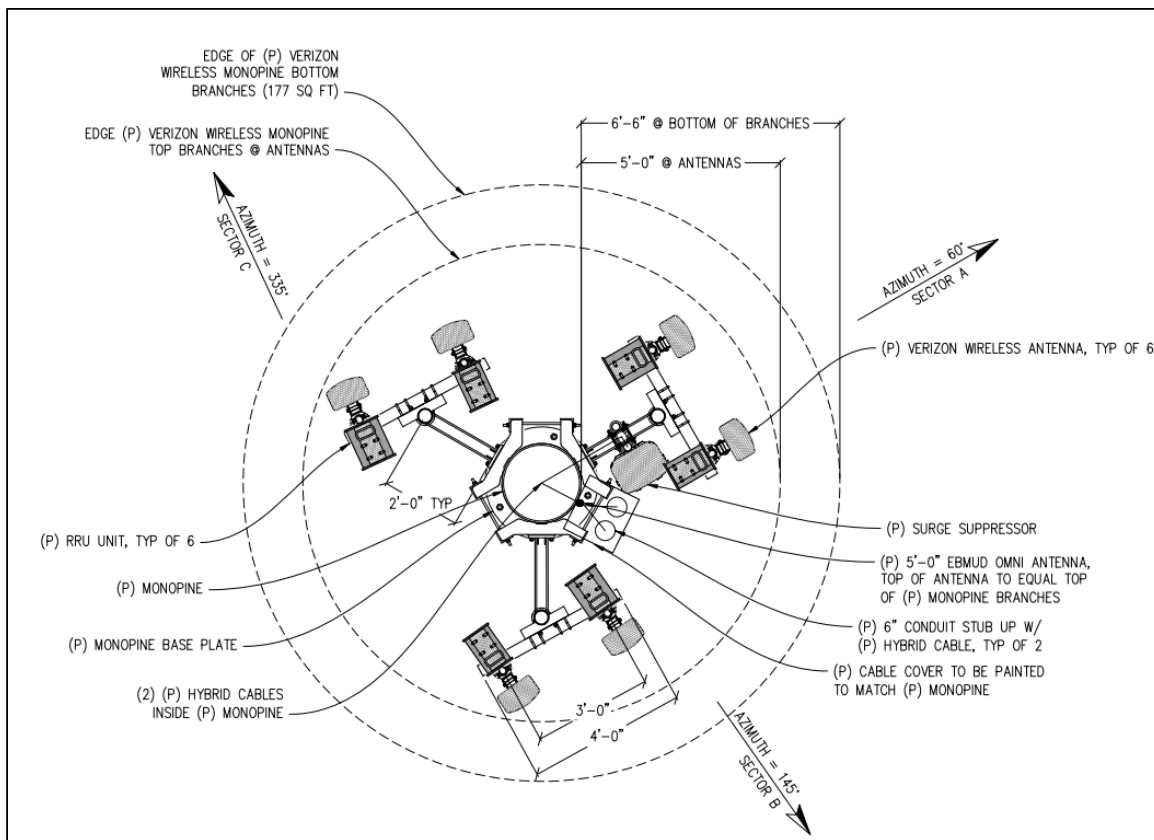


Figure 4: Antenna Plan (Source: Plans, Page A-4).

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The Plans indicate that the emission center of a 'future' carrier's antennas would be at approximately 27' 6". Figure 5 depicts the East elevation of the panel antennas.

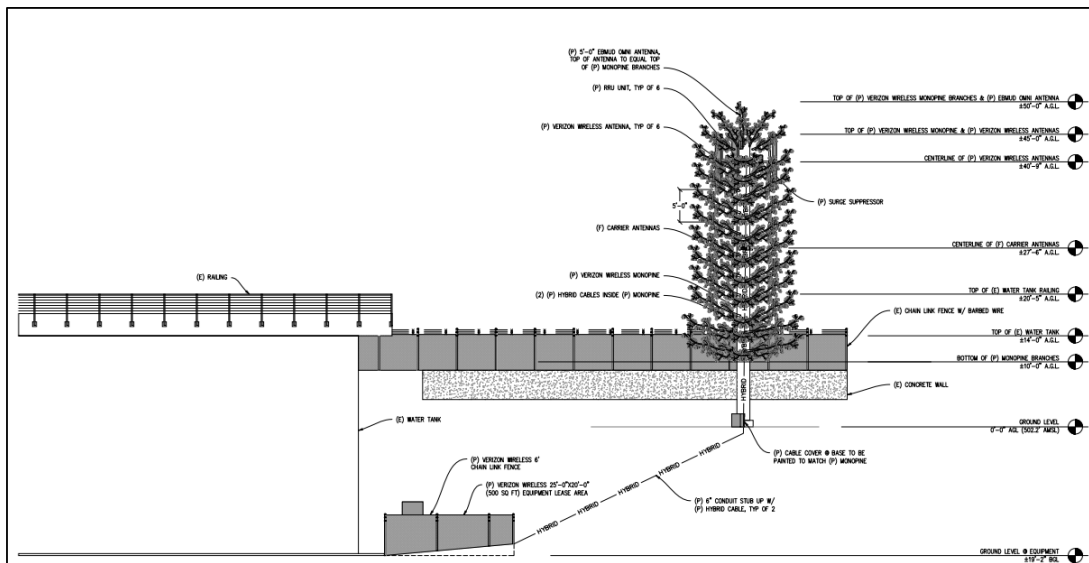


Figure 5: East elevation of panel antennas (Source: Plans, Page A-5).

Figure 6 depicts the South elevations of the panel antennas.

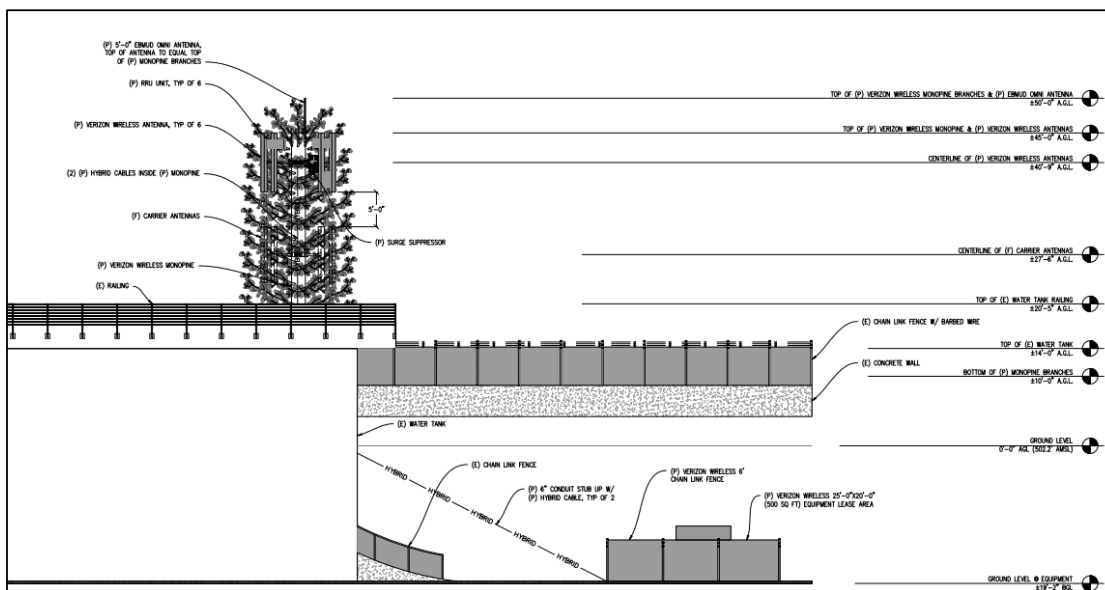


Figure 6: South elevations of panel antennas (Source: Plans, Page A-6).



Rincon Consultants, Inc.

May 24, 2019

Page 7

### 3. Planned Compliance with RF Exposure Regulations

Under the Telecom Act, the FCC completely occupies the field with respect to RF emissions regulation. The FCC established comprehensive rules for human exposure to RF emissions (the “**FCC Guidelines**”).<sup>1</sup> State and local governments cannot regulate wireless facilities based on environmental effects from RF emissions to the extent that the emissions comply with the FCC Guidelines.<sup>2</sup>

Although localities cannot establish their own standards for RF exposure, local officials may require wireless applicants to demonstrate compliance with the FCC Guidelines.<sup>3</sup> Such demonstrations usually involve a predictive calculation because the site has not yet been built.

#### 3.1. FCC Guidelines, Categorical Exclusions and Exposure Mitigation Measures

FCC Guidelines regulate *exposure* rather than *emissions*.<sup>4</sup> Although the FCC establishes a maximum permissible exposure (“**MPE**”) limit, it does not mandate any specific limitations on power levels applicable to all antennas and requires the antenna operator to adopt exposure-mitigation measures only to the extent that certain persons might become exposed to the emissions. Thus, a relatively low-powered site in proximity to the general population might require more comprehensive mitigation measures than a relatively high-powered site in a remote location accessible only to trained personnel.

The MPE limit also differentiates between “general population” and “occupational” people. Most people fall into the general population class, which includes anyone who either does not know about potential exposure or knows about the exposure but cannot exert control over the transmitters.<sup>5</sup> The narrower occupational class includes persons exposed through their employment and able to exert control over their exposure.<sup>6</sup> The MPE limit for the general population is five times lower than the MPE limit for the occupational class.

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<sup>1</sup> See 47 U.S.C. § 332(c)(7)(B)(iv); see also 47 C.F.R. § 1.1307 *et seq.*; FCC Office of Engineering and Technology, *Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields*, OET Bulletin 65, ed. 97-01 (1997).

<sup>2</sup> See 47 U.S.C. § 332(c)(7)(B)(iv).

<sup>3</sup> See *In re Procedures for Reviewing Requests for Relief from State and Local Regulations Pursuant to Section 332(c)(7)(B)(iv) of the Communications Act of 1934*, *Report and Order*, 15 FCC Rcd. 22821, 22828–22829 (Nov. 13, 2000) (declining to adopt rules that limit local authority to require compliance demonstrations).

<sup>4</sup> See generally Human Exposure to Radio Frequency Fields: Guidelines for Cellular and PCS Sites, *Consumer Guide*, FCC (Oct. 22, 2014), available at <https://www.fcc.gov/guides/human-exposure-rf-fields-guidelines-cellular-and-pcs-sites> (discussing in general terms how wireless sites transmit and how the FCC regulates the emissions).

<sup>5</sup> See 47 C.F.R. § 1.1310, Note 2.

<sup>6</sup> See *id.*



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Lastly, the FCC “categorically excludes” certain antennas from routine environmental review when either (1) the antennas create exposures in areas virtually inaccessible to humans or (2) the antennas operate at extreme low power. As a general rule, a wireless site qualifies for a categorical exclusion when mounted on a structure built solely or primarily to support FCC-licensed or authorized equipment (*i.e.*, a tower) and such that the lowest point on the lowest transmitter is more than 10 meters (32.8 feet) above ground.<sup>7</sup>

Categorical exclusions establish a presumption that the emissions from the antennas will not significantly impact humans or the human environment. Such antennas are exempt from routine compliance evaluations but not exempt from actual compliance. Under some circumstances, such as a heavily collocated tower or when in close proximity to general population members, even a categorically excluded site will require additional analysis.

### 3.2. Planned Compliance Evaluation and Recommendations

The FCC Guidelines categorically exclude Verizon’s proposal from routine compliance evaluations because Verizon proposes to install its equipment on a new support structure camouflaged as a monopine that is exclusively intended to support FCC-licensed wireless equipment. In addition, the lowest point on the lowest transmitting antenna is proposed to be approximately at 37 feet AGL.

In the instant case, Verizon has submitted to the City the H&E RF Report dated October 17, 2018, sealed by Mr. William F. Hammett, P.E.

Presuming that the H&E RF Report contains the current RF emissions data, it is sufficient to allow us to conduct an independent RF analysis to determine whether the project as proposed will comply under the FCC’s Rules. See Figure 7.

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<sup>7</sup> See *id.* § 1.1307(b)(1).



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### Site and Facility Description

Based upon information provided by Verizon, including zoning drawings by Streamline Engineering and Design, Inc., dated March 13, 2018, it is proposed to install six JMA Wireless Model MX06FRO840-02 directional panel antennas on a new 45-foot steel pole, configured to resemble a pine tree,\* to be sited about 70 feet north of the water tank at the EBMUD Berryman Reservoir facility, located on Euclid Avenue in Berkeley. The antennas would employ up to 16° downtilt, would be mounted at an effective height of about 40½ feet above ground, and would be oriented in pairs toward 60°T, 145°T, and 335°T. The maximum effective radiated power in any direction would be 51,870 watts, representing simultaneous operation at 20,900 watts for AWS, 10,000 watts† for PCS, 10,970 watts for cellular, and 10,000 watts for 700 MHz service. There are reported no other wireless telecommunications base stations at the site or nearby.

**Figure 7:** Site and Facility Description (Source: H&E RF Report Page 2).

TLF notes that the H&E RF Report contains a footnote on the bottom of page 2 stating, “[f]oliage atop the pole puts the overall height at 50 feet.” Based on the transmitted frequencies and power levels disclosed in the H&E RF Report, Verizon’s emissions will create a worst case “controlled access zone” that extends to a maximum of approximately 100 feet horizontally from the face of the antennas at approximately the same height as the antennas emissions center. Those emission centers are at approximately 40' 9" above ground level (“AGL”) for Sectors A, B and C.

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See Figure 8 for the approximate azimuths and extents of the controlled zone.



**Figure 8:** Approximate (i) location of monopine, and (ii) azimuth orientations for all three sectors (Source: Google Maps; Annotated by Dr. Kramer).

The length of the red arrows in Figure 8 is about 100', which is the limit of the controlled zone, which is at least 41 feet above ground level at the location of the monopine.

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See Figure 9 for the proposed location and centerline distance of a future carrier’s antennas.

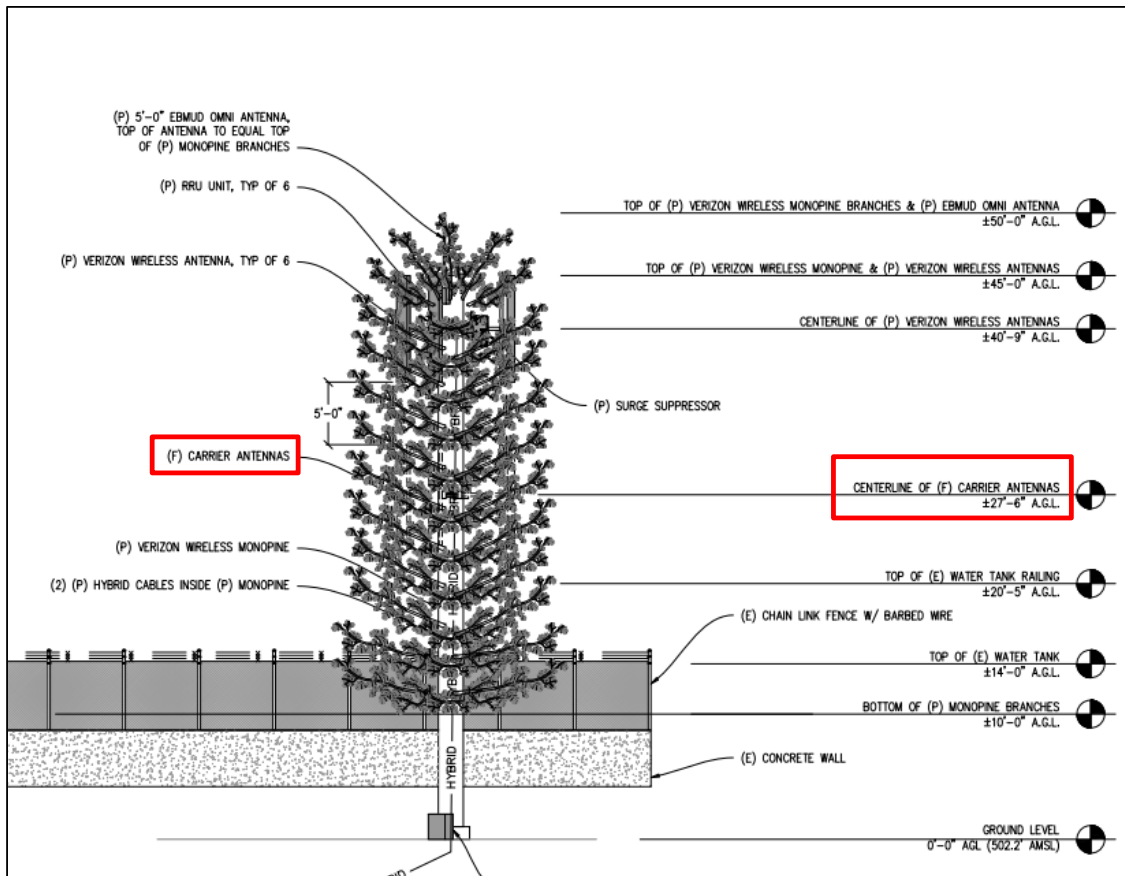


Figure 9: Future Carrier Antenna Locations (Source: Plans, Page A-5, Annotated by Dr. Kramer).

While the site as currently proposed is categorically excluded under the FCC Guidelines, TLF notes that another round of independent RF analysis will be needed to determine whether a future carrier’s antennas will comply under the FCC’s Rules since the future carrier’s antennas will be installed lower than 10 meters AGL. For this reason, we recommend that the City direct Verizon to strike all ‘future’ elements from the Plans and the Application so that any future changes to this site only occur upon a subsequent planning application and then-current RF emissions analysis of the then-existing Verizon emissions and the proposed emissions of the future carrier(s).



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We recommend the City consider adopting the following conditions of approval to promote compliance with the FCC Guidelines in the event that the City approves the application in its current form:

1. The permittee shall keep all access points to the site locked at all times, except when active maintenance is performed on the equipment.
2. The permittee shall install and at all times maintain in good condition an "RF Notice" sign and a network operations center sign adjacent to all access points of the site. The signs required in this condition must be placed in a location where they are clearly visible to a person approaching the access point(s) whether in the open or closed positions.
3. The permittee shall ensure that all signage complies with FCC OET Bulletin 65 and ANSI C95.2 for color, symbol, and content conventions. All such signage shall at all times provide a working local or toll-free telephone number to its network operations center, and such telephone number shall be able to reach a live person who can exert transmitter shut-down control over this site as required by the FCC.

These recommended conditions are based on the site in its proposed location and equipment configuration. To the extent that any changes are made to the proposal, a revised analysis may be necessary.

### **3.3. RF Compliance with City of Berkeley Municipal Code**

Finally, TLF recommends that the City also require that Verizon expressly agree to follow all of the City's Municipal Code pertaining to RF safety, including but not limited to:

- BMC 16.10.100 Maintenance of facilities--Continuing obligations § G
- BMC 23C.17.040 Minimum Application Requirements § D (sworn statement)
- BMC 23C.17.090 Requirement for Certification of Facilities in its entirety (post construction)

/TLF



**Verizon Wireless • Proposed Base Station (Site No. 273566 “Berkeley Hills”)  
Euclid Avenue • Berkeley, California**

**Statement of Hammett & Edison, Inc., Consulting Engineers**

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of Verizon Wireless, a personal wireless telecommunications carrier, to evaluate the base station (Site No. 273566 “Berkeley Hills”) proposed to be located at Euclid Avenue in Berkeley, California, for compliance with appropriate guidelines limiting human exposure to radio frequency (“RF”) electromagnetic fields.

**Executive Summary**

Verizon proposes to install directional panel antennas on a tall pole to be sited at the EBMUD Berryman Reservoir facility, located on Euclid Avenue in Berkeley. The proposed operation will comply with the FCC guidelines limiting public exposure to RF energy.

**Prevailing Exposure Standards**

The U.S. Congress requires that the Federal Communications Commission (“FCC”) evaluate its actions for possible significant impact on the environment. A summary of the FCC’s exposure limits is shown in Figure 1. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. The most restrictive FCC limit for exposures of unlimited duration to radio frequency energy for several personal wireless services are as follows:

Wireless Service	Frequency Band	Occupational Limit	Public Limit
Microwave (Point-to-Point)	5–80 GHz	5.00 mW/cm <sup>2</sup>	1.00 mW/cm <sup>2</sup>
WiFi (and unlicensed uses)	2–6	5.00	1.00
BRS (Broadband Radio)	2,600 MHz	5.00	1.00
WCS (Wireless Communication)	2,300	5.00	1.00
AWS (Advanced Wireless)	2,100	5.00	1.00
PCS (Personal Communication)	1,950	5.00	1.00
Cellular	870	2.90	0.58
SMR (Specialized Mobile Radio)	855	2.85	0.57
700 MHz	700	2.40	0.48
[most restrictive frequency range]	30–300	1.00	0.20

**General Facility Requirements**

Base stations typically consist of two distinct parts: the electronic transceivers (also called “radios” or “channels”) that are connected to the traditional wired telephone lines, and the passive antennas that send the wireless signals created by the radios out to be received by individual subscriber units. The transceivers are often located at ground level and are connected to the antennas by coaxial cables. A small antenna for reception of GPS signals is also required, mounted with a clear view of the sky. Because of the short wavelength of the frequencies assigned by the FCC for wireless services, the antennas require line-of-sight paths for their signals to propagate well and so are installed at some height

**Verizon Wireless • Proposed Base Station (Site No. 273566 “Berkeley Hills”)  
Euclid Avenue • Berkeley, California**

above ground. The antennas are designed to concentrate their energy toward the horizon, with very little energy wasted toward the sky or the ground. This means that it is generally not possible for exposure conditions to approach the maximum permissible exposure limits without being physically very near the antennas.

### Computer Modeling Method

The FCC provides direction for determining compliance in its Office of Engineering and Technology Bulletin No. 65, “Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radio Frequency Radiation,” dated August 1997. Figure 2 describes the calculation methodologies, reflecting the facts that a directional antenna’s radiation pattern is not fully formed at locations very close by (the “near-field” effect) and that at greater distances the power level from an energy source decreases with the square of the distance from it (the “inverse square law”). The conservative nature of this method for evaluating exposure conditions has been verified by numerous field tests.

### Site and Facility Description

Based upon information provided by Verizon, including zoning drawings by Streamline Engineering and Design, Inc., dated March 13, 2018, it is proposed to install six JMA Wireless Model MX06FRO840-02 directional panel antennas on a new 45-foot steel pole, configured to resemble a pine tree,\* to be sited about 70 feet north of the water tank at the EBMUD Berryman Reservoir facility, located on Euclid Avenue in Berkeley. The antennas would employ up to 16° downtilt, would be mounted at an effective height of about 40½ feet above ground, and would be oriented in pairs toward 60°T, 145°T, and 335°T. The maximum effective radiated power in any direction would be 51,870 watts, representing simultaneous operation at 20,900 watts for AWS, 10,000 watts† for PCS, 10,970 watts for cellular, and 10,000 watts for 700 MHz service. There are reported no other wireless telecommunications base stations at the site or nearby.

### Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed Verizon operation is calculated to be 0.32 mW/cm<sup>2</sup>, which is 60% of the applicable public exposure limit. The maximum calculated level at the second-floor elevation of any nearby residence‡ is 12% of the public exposure limit. The maximum calculated level for a worker on the water tank is 84% of the public exposure limit. It should be noted that these results include several “worst-case” assumptions and therefore are expected to overstate actual power density levels from the proposed operation.

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\* Foliage atop the pole puts the overall height at 50 feet.

† Verizon indicates it will operate at reduced power in this band so as not to exceed the emission limit in §24.232 of the FCC Rules.

‡ Located at least 290 feet away, based on photographs from Google Maps.



**Verizon Wireless • Proposed Base Station (Site No. 273566 “Berkeley Hills”)  
Euclid Avenue • Berkeley, California**

**No Recommended Mitigation Measures**

Due to their mounting locations and height, the Verizon antennas would not be accessible to unauthorized persons, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. It is presumed that Verizon will, as an FCC licensee, take adequate steps to ensure that its employees or contractors receive appropriate training and comply with FCC occupational exposure guidelines whenever work is required near the antennas themselves.

**Conclusion**

Based on the information and analysis above, it is the undersigned’s professional opinion that operation of the base station proposed by Verizon Wireless at Euclid Avenue in Berkeley, California, will comply with the prevailing standards for limiting public exposure to radio frequency energy and, therefore, will not for this reason cause a significant impact on the environment. The highest calculated level in publicly accessible areas is much less than the prevailing standards allow for exposures of unlimited duration. This finding is consistent with measurements of actual exposure conditions taken at other operating base stations.

**Authorship**

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration Nos. E-13026 and M-20676, which expire on June 30, 2019. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.

October 17, 2018



*William F. Hammett*  
\_\_\_\_\_  
William F. Hammett, P.E.

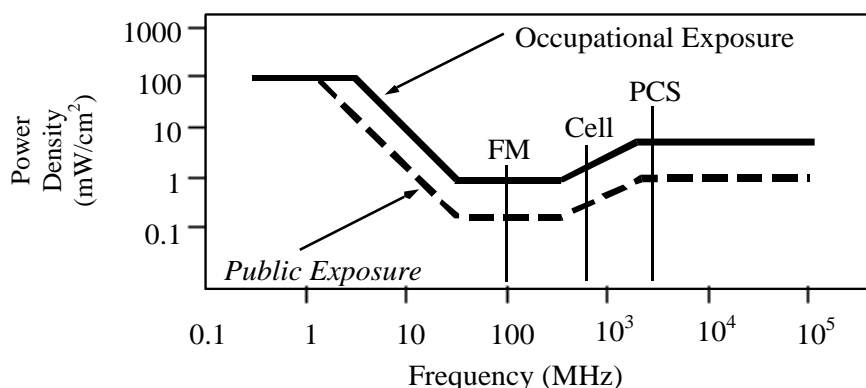
707/996-5200

### FCC Radio Frequency Protection Guide

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission (“FCC”) to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The FCC adopted the limits from Report No. 86, “Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields,” published in 1986 by the Congressionally chartered National Council on Radiation Protection and Measurements (“NCRP”). Separate limits apply for occupational and public exposure conditions, with the latter limits generally five times more restrictive. The more recent standard, developed by the Institute of Electrical and Electronics Engineers and approved as American National Standard ANSI/IEEE C95.1-2006, “Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz,” includes similar limits. These limits apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

As shown in the table and chart below, separate limits apply for occupational and public exposure conditions, with the latter limits (in *italics* and/or dashed) up to five times more restrictive:

Frequency Applicable Range (MHz)	Electromagnetic Fields (f is frequency of emission in MHz)					
	Electric Field Strength (V/m)		Magnetic Field Strength (A/m)		Equivalent Far-Field Power Density (mW/cm <sup>2</sup> )	
0.3 – 1.34	614	<i>614</i>	1.63	<i>1.63</i>	100	<i>100</i>
1.34 – 3.0	614	<i>823.8/f</i>	1.63	<i>2.19/f</i>	100	<i>180/f<sup>2</sup></i>
3.0 – 30	1842/f	<i>823.8/f</i>	4.89/f	<i>2.19/f</i>	900/f <sup>2</sup>	<i>180/f<sup>2</sup></i>
30 – 300	61.4	<i>27.5</i>	0.163	<i>0.0729</i>	1.0	<i>0.2</i>
300 – 1,500	3.54√f	<i>1.59√f</i>	√f/106	<i>√f/238</i>	f/300	<i>f/1500</i>
1,500 – 100,000	137	<i>61.4</i>	0.364	<i>0.163</i>	5.0	<i>1.0</i>



Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits, and higher levels also are allowed for exposures to small areas, such that the spatially averaged levels do not exceed the limits. However, neither of these allowances is incorporated in the conservative calculation formulas in the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) for projecting field levels. Hammett & Edison has built those formulas into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radio sources. The program allows for the description of buildings and uneven terrain, if required to obtain more accurate projections.

## RFR.CALC™ Calculation Methodology

### Assessment by Calculation of Compliance with FCC Exposure Guidelines

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission (“FCC”) to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The maximum permissible exposure limits adopted by the FCC (see Figure 1) apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits.

#### Near Field.

Prediction methods have been developed for the near field zone of panel (directional) and whip (omnidirectional) antennas, typical at wireless telecommunications base stations, as well as dish (aperture) antennas, typically used for microwave links. The antenna patterns are not fully formed in the near field at these antennas, and the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) gives suitable formulas for calculating power density within such zones.

For a panel or whip antenna, power density  $S = \frac{180}{\theta_{BW}} \times \frac{0.1 \times P_{net}}{\pi \times D \times h}$ , in mW/cm<sup>2</sup>,

and for an aperture antenna, maximum power density  $S_{max} = \frac{0.1 \times 16 \times \eta \times P_{net}}{\pi \times h^2}$ , in mW/cm<sup>2</sup>,

where  $\theta_{BW}$  = half-power beamwidth of the antenna, in degrees, and

$P_{net}$  = net power input to the antenna, in watts,

$D$  = distance from antenna, in meters,

$h$  = aperture height of the antenna, in meters, and

$\eta$  = aperture efficiency (unitless, typically 0.5-0.8).

The factor of 0.1 in the numerators converts to the desired units of power density.

#### Far Field.

OET-65 gives this formula for calculating power density in the far field of an individual RF source:

$$\text{power density } S = \frac{2.56 \times 1.64 \times 100 \times \text{RFF}^2 \times \text{ERP}}{4 \times \pi \times D^2}, \text{ in mW/cm}^2,$$

where ERP = total ERP (all polarizations), in kilowatts,

RFF = relative field factor at the direction to the actual point of calculation, and

$D$  = distance from the center of radiation to the point of calculation, in meters.

The factor of 2.56 accounts for the increase in power density due to ground reflection, assuming a reflection coefficient of 1.6 (1.6 x 1.6 = 2.56). The factor of 1.64 is the gain of a half-wave dipole relative to an isotropic radiator. The factor of 100 in the numerator converts to the desired units of power density. This formula has been built into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radiation sources. The program also allows for the description of uneven terrain in the vicinity, to obtain more accurate projections.

**Verizon Wireless • Proposed Base Station (Site No. 273566 “Berkeley Hills”)  
Euclid Avenue • Berkeley, California**

**Supplemental Information for  
Review by URS Corporation**

Underlying RF Exposure Report: dated October 17, 2018

Attached are antenna manufacturers’ specification documents, showing antenna patterns and highlighted to show half-power beam width, front-to-back ratio, and aperture height for the following antennas proposed for use at this base station:

JMA Wireless MX06FRO840-02

The applicable  $P_{net}$  values are as follows  
(referencing the panel antenna near-field calculation formula in Figure 2 of Report):

<u><math>P_{net}</math></u>	<u>Frequency Band</u>
285 watts	AWS
150 watts	PCS
285 watts	cellular
285 watts	700 MHz

October 17, 2018

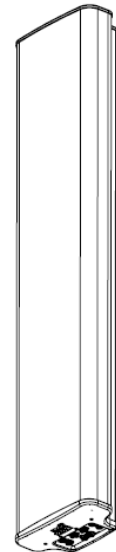
## Product Specifications

## MX06FRO840-02

NWA<sup>TM</sup> X-Pol Antenna | Hex-Port | 8 ft | 40°

### X-Pol, Hex-Port 8 ft 40° Fast Roll Off with Smart Bias T (2) 698–894 MHz & (4) 1695–2180 MHz

- Fast Roll Off (FRO<sup>TM</sup>) Azimuth beam pattern improves Intra- and Inter-cell SINR
- Excellent Passive Intermodulation (PIM) performance reduces harmful interference
- Fully integrated (iRETs) with *independent* RET control for low and high bands for ease of network optimization
- SON-Ready array spacing supports beamforming capabilities
- Suitable for LTE/CDMA/PCS/UMTS/GSM Air interface technologies
- Integrated Smart BIAS-Ts reduces leasing costs



Electrical Specification (Minimum/ Maximum)	Ports 1,2		Ports 3,4,5,6		
Frequency bands, MHz	698–798	824–894	1695–1880	1850–1990	1920–2180
Polarization	± 45°		± 45°		
Average gain over all tilts, dBi	17.6	18.0	19.9	20.4	20.8
Horizontal beamwidth (HBW), degrees <sup>1</sup>	42°	37°	39°	36°	34°
Front-to-back ratio, co-polar power @180° ± 30°, dB	>22.0	>22.0	>25.0	>25.0	>25.0
X-Pol discrimination (CPR) at boresight, dB	>18.0	>15.0	>18	>18	>15
Sector power ratio, percent	<4.5	<3.5	<3.7	<3.8	<3.6
Vertical beamwidth, (VBW), degrees <sup>1</sup>	9.0°	8.3°	6.0°	5.7°	5.3°
Electrical downtilt (EDT) range, degrees	2-12	2-12	0-9		
First upper side lobe (USLS) suppression, dB <sup>1</sup>	≤ -15.0	≤ -15.0	≤ -16.0	≤ -16.0	≤ -16.0
Minimum cross polar isolation, port-to-port, dB	25	25	25	25	25
Maximum VSWR/ return loss, dB	1.5/ -14.0	1.5/ -14.0	1.5/ -14.0	1.5/ -14.0	1.5/ -14.0
Maximum passive Intermodulation (PIM), 2x 20W carrier, dBc	-153	-153	-153		
Maximum input power per any port, watts	300		250		
Total composite power all ports, watts			1500		

<sup>1</sup> Typical value over frequency and tilt

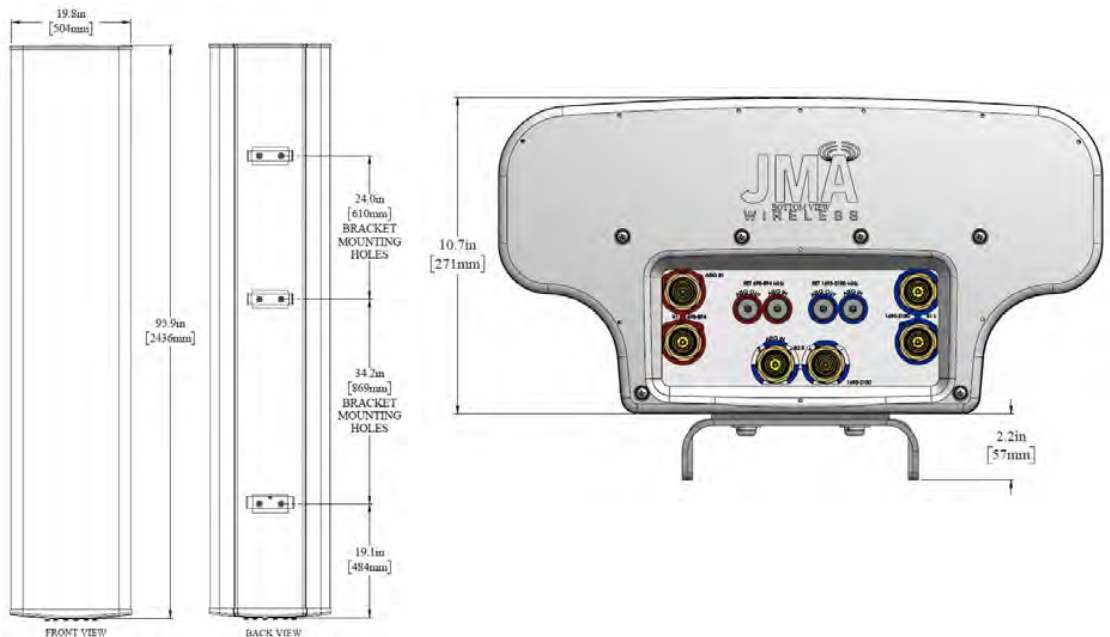
Product Specifications

# MX06FRO840-02

NWAV™ X-Pol Antenna | Hex-Port | 8 ft | 40°



Mechanical Specifications	
Dimensions height/ width/ depth, inches (mm)	95.9/ 19.8/ 10.7 (2436/504/ 271)
Shipping dimensions length/ width/ height, inches (mm)	106/ 26/ 15 (2692/ 660/ 381)
No. of RF input ports, connector type & location	6 x 4.3-10 female, bottom
RF connector torque	96 lbf-in (10.85 N m or 8 lbf-ft)
Net antenna weight, lb (kg)	75 (34.0)
Shipping weight, lb (kg)	105 (47.6)
Antenna mounting and downtilt kit included with antenna	91900318, 91900319 (middle bracket)
Net weight of the mounting and downtilt kit, lb (kg)	18 (8.2)
Range of mechanical up/ down tilt	-2° to 12°
Rated wind survival speed, mph (km/h)	150 (241)
Frontal, lateral & rear wind loading @ 150 km/h, lbf (N)	355 (1581), 152 (677), 355 (1581)
Equivalent flat plate @100 mph and Cd=2, sq. ft.	8.17



Ordering Information	
Antenna Model	Description
MX06FRO840-02	8F X- Pol HEX FRO 40° 2-12°/ 0-9° RET, 4.3-10 & SBT
Optional Accessories	
992100-CA030-SC	Optional AISG jumper cable, M/F, 3.0 meters
PCU-1000	Primary control unit, USB

**Verizon Wireless • Proposed Base Station (Site No. 273566 “Berkeley Hills”)  
Euclid Avenue • Berkeley, California**

**Supplemental Information for  
Review by City Planner**

Underlying RF Exposure Report: dated October 17, 2018

RE EME STUDY DATA			Uncontrolled				Controlled			
			Subject Equipment		Accumulative Equipment		Subject Equipment		Accumulative Equipment	
			Power density mW/cm <sup>2</sup>	% FCC limit	Power density mW/cm <sup>2</sup>	% FCC limit	Power density mW/cm <sup>2</sup>	% FCC limit	Power density mW/cm <sup>2</sup>	% FCC limit
Subject structure	Base horizontal plane <sup>(1)</sup>	In front	0.32	60						
		Behind								
	Horizontal planes within 12 ft	Above								
		Below								
	Roof surface (main)									
Adjacent locations	Any structure within 30 ft	___ ft								

NOTES: <sup>(1)</sup> Defined as the ground

October 17, 2018

## Applicant Statement

### A. Description of the Coverage area.

Verizon's objective is to improve coverage in the Berkeley Hills area, especially along Euclid Avenue north of EBMUD's Berryman Reservoir. This area is primarily residential and wooded, and provides few traditional locations for cell sites.

### B. Statements Related to Need.

Verizon's coverage objectives for this project are to improve service in the area described above, and to offload traffic from other nearby sites that are often at or exceeding capacity. Coverage maps showing existing coverage are included with this application, as are coverage maps showing anticipated coverage after the proposed project is constructed.

The proposed location is most appropriate as it will allow Verizon to achieve its coverage objectives, while causing the least impact on the neighborhood. This EBMUD parcel is already used for utility purposes. Adding a Verizon tower to this location will allow Verizon to cover the neighborhood without changing its character.

### C. Description of Services.

Wireless communications have become a modern necessity. This technology allows subscribers to communicate with others who use telephones, e-mail, text messages, etc. at essentially any time and any place. Wireless communications have become the primary medium for accomplishing business and leisure. Because of this, the Federal Communications Commission has observed that:

Wireless services are central to the economic, civic, and social lives of over 270 million Americans. Americans are now in the transition toward increasing reliance on their mobile devices for broadband services, in addition to voice services. Without access to mobile wireless networks, however, consumers cannot receive voice and broadband services from providers. Providers continue to build out their networks to provide such services, and a crucial requirement for providing those services is obtaining State and local governmental approvals for constructing towers or attaching transmitting equipment to pre-existing structures. *In re Petition for Declaratory Ruling*, 24 FCC Rcd. 13994.

Clearly, constructing wireless communications facilities, in general, is both essential and desirable to the public comfort and convenience. Moreover, the construction of this particular proposed facility is also essential and desirable to the public comfort and convenience. As shown on the coverage maps included with this application, Verizon coverage in the immediate vicinity of the proposed facility is poor. By building the proposed facility Verizon will dramatically improve coverage in the area, particularly inside of homes and other buildings. This will enable Verizon subscribers to more easily make contact with the world around them, including emergency services, such as law enforcement, fire departments, ambulances, etc.



In addition, adding the proposed facility in this location will decrease the amount of traffic that must be carried by other nearby wireless facilities, improving both the capacity and resiliency, thereby extending benefits beyond the immediate vicinity of this proposed facility.

Verizon is proposing to provide LTE service from this facility. Please note that LTE is a “data only” service, for which the term “minutes of use” has no meaning. The throughput or capacity of an LTE site is not measured in terms of the number of telephone calls, or the number of minutes of telephone usage, or blocked or dropped telephone calls. While voice telephone service will ultimately be provided from the proposed site, that service is just any other service that uses data, like e-mail or web browsing, or video.

**D. Visibility.**

Verizon proposes to install a monopole disguised as an evergreen tree. Antennas, remote radio units, and other related cables and equipment, would be mounted on the monopole. Other equipment cabinets, including a standby generator, would be installed on the ground near the monopole. Because it would be disguised as an evergreen tree, the monopole and attached antennas would have limited visibility from the neighborhood, as it would match the general appearance of other trees located in the vicinity. This is evident from the photosimulations submitted with this application. This EBMUD parcel is shaped like a bowl, with the lowest elevations surrounded by an earthen berm. Because ground equipment would be installed at the bottom of this bowl, it would not be visible from the street.

**E. Third Party Evaluation Statement.**

Verizon Wireless will pay the reasonable actual cost and administrative fees for the hiring of an independent qualified engineering consultant to evaluate any technical aspect of the proposed site, and will provide to the engineer any information necessary to perform the evaluation. A deposit of \$5,500 is included with this application.

**F. Noise Data.**

Verizon Wireless will pay the reasonable actual cost and administrative fees for the hiring of an independent qualified acoustic consultant to prepare or independently review an acoustic report on the equipment. A deposit of \$1,500 is included with this application.

**G. Assurance of Removal.**

Prior to obtaining a building permit to erect or install the proposed facility, Verizon Wireless will either secure a bond or provide financial assurances, in a form acceptable to the City Manager, for the removal of the facility in the event it is abandoned or the approval is otherwise terminated.

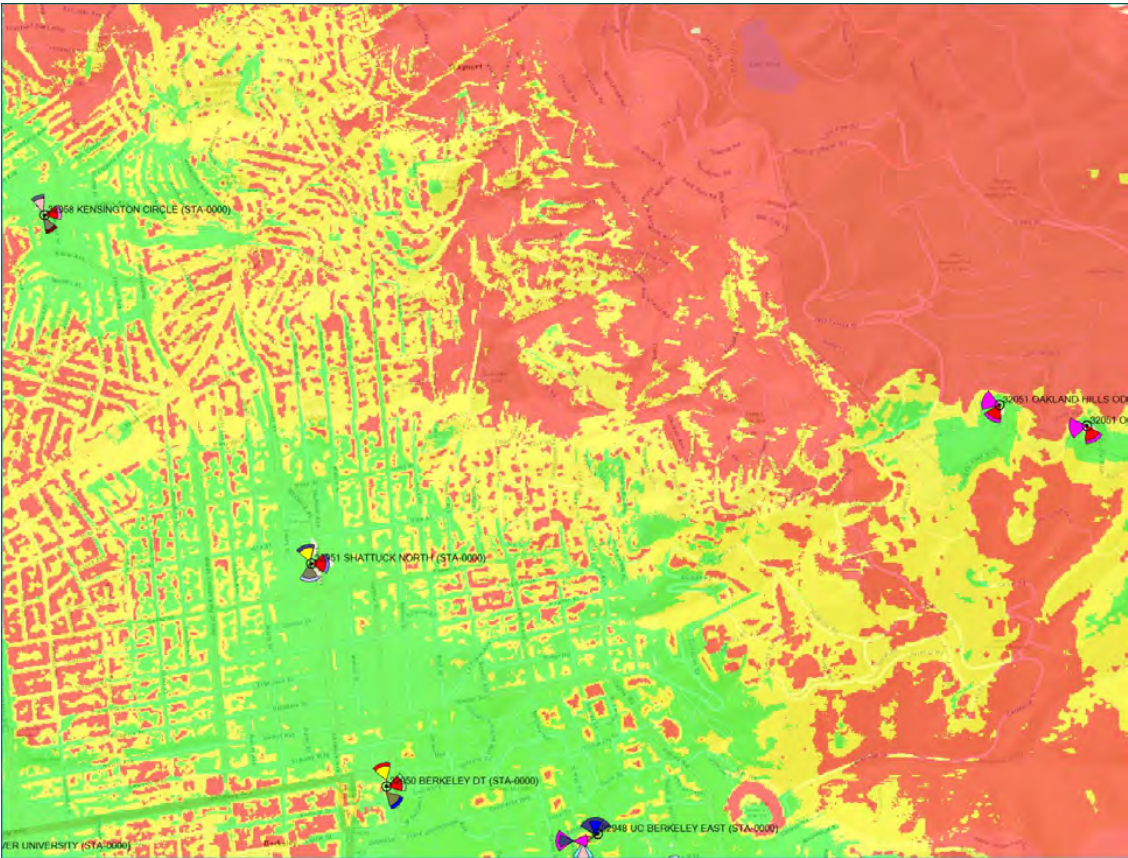


# Berkeley Hills 700 & AWS Analysis

Nov 14th 2018

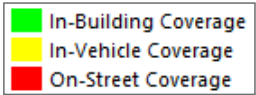
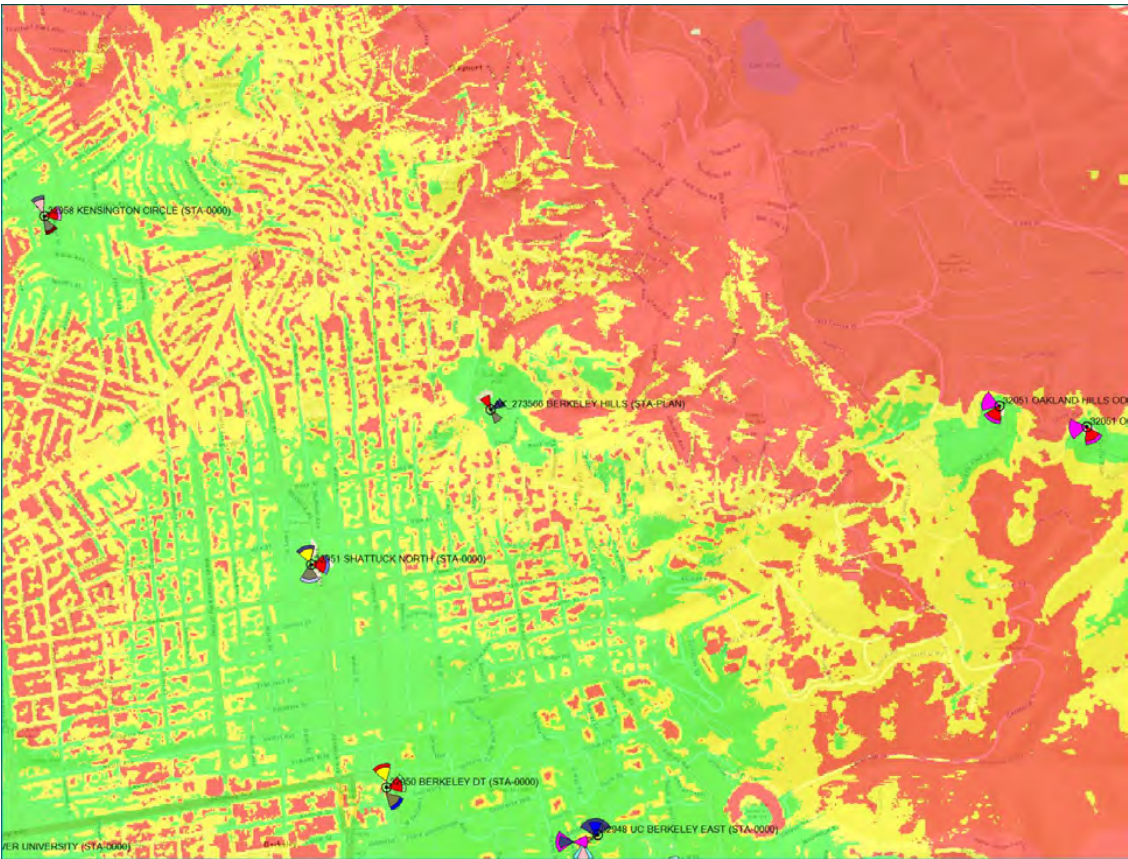


# Before Site RSRP@700





# After Site RSRP@700





**HAMMETT & EDISON, INC.**  
CONSULTING ENGINEERS  
BROADCAST & WIRELESS

WILLIAM F. HAMMETT, P.E.  
RAJAT MATHUR, P.E.  
ROBERT P. SMITH, JR.  
ANDREA L. BRIGHT, P.E.  
NEIL J. OLIJ, P.E.  
BRIAN F. PALMER  
MANAS REDDY  
M. DANIEL RO

ROBERT L. HAMMETT, P.E.  
1920-2002  
EDWARD EDISON, P.E.  
1920-2009

DANE E. ERICKSEN, P.E.  
CONSULTANT

BY EMAIL CHELSEA.RODDAN@RIDGECOMMUNICATE.COM

June 11, 2019

Ms. Chelsea Roddan  
Site Acquisition Project Coordinator  
Ridge Communications, Inc.  
12919 Alcosta Boulevard, Suite 1  
San Ramon, California 94583

Re: Supplemental Information for Peer Review

Dear Chelsea:

Thanks for sending along a request from the City of Berkeley regarding the review by Rincon Consultants, Inc., of our acoustic analysis of the proposed Verizon Wireless base station (Site No. 273566 "Berkeley Hills"), dated May 24, 2019. We appreciate the opportunity to provide this response. The substance of Rincon's analysis was three comments, addressed in turn below.

*"Page 3, Table listing equipment and associated noise levels. The table list three different types of equipment. Rincon has evaluated the noise level data presented. The data for the Generac SD030 states the noise level with a Level 2 enclosure would be 62 dBA at 23 feet. This information does not match the noise level data provided by the manufacturer that is available online, which shows a noise level of 68 dBA with a Level 2 cover at 23 feet. The analysis does not offer enough detail to determine how the noise level reported in the table was derived. It appears the reduced noise level is associated with the short testing time; however, that is not clear. Please revise the analysis to show the published noise levels and list all assumptions and calculations incorporated into the analysis."*

Rincon assumes the Generac generator will be installed with a Level 2 sound enclosure, while we had specified in the report that a "Level 2A" enclosure would be used. This is an enclosure model specific to Verizon's use of Generac equipment. Our source for the acoustic level for this unit is attached to this letter as Exhibit 1, which shows maximum noise during no-load testing equal to 62 dBA at 23 feet (7 meters), as we had reported.

Ms. Chelsea Roddan, page 2  
June 11, 2019

*“Page 3, Table listing equipment and associated noise levels. The table lists two different types of Charles Industries equipment, CUBE-SSA4C215XC1 and CUBE-PM639. Rincon contacted Charles industries to verify the reported noise levels; however, Rincon was unable to verify the noise level data for these units for a couple of reasons. Charles Industries indicated the CUBE-PM639 is not a proper model number. The model number is missing several designations to identify the actual unit proposed. Charles industries also indicated the noise level data is based on a 1-meter distance. Please include the specification sheets of all the proposed units with the manufacture’s noise level data used in the analysis and the calculations used to determine the noise level at the nearest residence in an appendix.”*

Our acoustic data for the Charles Industries CUBE cabinets is based on our firm’s correspondence with Charles Industries representatives and its suppliers over several years. Rincon is correct that the CUBE PM-639 is not a single model of cabinet, but rather a family of similar cabinets (so called “CUBE-PM639 Series”). The documents attached as Exhibit 2A list the several possible HVAC units that could be installed within this series of cabinets; the worst-case noise from any of the DC variants of this series, which Verizon has indicated it uses, is 65 dBA at a reference distance of 1.5 meters, which we used in our report.

The Model CUBE-SSA4C215XC1’s noise level was calculated using information provided by Charles Industries and summing the individual noise-generating components within a single CUBE-SSA4C215XC1 unit. Our data from the manufacturer (Exhibit 2B) notes that a single unit would contain one Dantherm 750-watt 48 VDC heat exchanger (65 dBA at 1.5 meters, Exhibit 2B.1) and two Delta 200-watt thermoelectric coolers (64 dBA at 1 meter, Exhibit 2B.2). The cumulative acoustic level from the three units is 67.3 dBA at 1.5 meters, which is the value we used in our report.

*“Page 3, Paragraph following the table listing equipment and associated noise levels. The analysis of noise levels the combined noise level from the project with the ambient noise level. This is inappropriate as the City noise level limits are applicable only to the noise source and should not be evaluated by adding the source to the ambient noise level. As stated in Section 13.040.050, “No person shall operate or cause to be operated any source of sound at any location within the incorporated City or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person...” Thus the noise limits apply only to the source being operated. Please revise the analysis to remove the discussion of project plus ambient.”*

While we appreciate Rincon’s alternate interpretation of the City’s noise limits, it should be noted that Rincon’s methodology would result in an overall lower noise level. Using our conservative method, which included 24-hour monitoring of ambient noise levels, we found that the additive noise level would comply with the pertinent limits, and Rincon does not dispute that result. By definition, the proposal would also comply using Rincon’s methodology.

Ms. Chelsea Roddan, page 3  
June 11, 2019

We appreciate the opportunity to provide this supplemental information. We hope that Rincon finds it satisfactory and concludes that the proposed operation will indeed comply with the City's noise limits. Please let us know if any further questions arise.

Sincerely yours,



William F. Hammett, P.E.

scn

Enclosure

# EXHIBIT 1

## GENERAC<sup>®</sup>

**SD030**  
2.4 Liter Level 2A

**Octave Band Sound Data SD030 2.4 Liter Diesel**

Test Date	3/14/2013	Engine Firing Frequency	60
Test Request #	A-2-3738A- T12	Alt Fan Frequency	480
Generator Model	SD030 2.4 Liter	Cooling Fan Frequency	416
Enclosure	Level 2 A Verizon	Test Conditions	Sunny
Unit Dimensions		Temp ° F	58
Engine	2.4 Liter Generac Diesel	Barometric Pres	30.65
Alternator	30 kW 390 mm 240V 1 Ø	Wind Speed mph	2-4
Engine Speed	1800	Muffler	Standard
Test Location	Waukesha	Fuel	#2 Diesel
Instrument	TES1358		

Test Load: **0 kW**      240 Volt      Distance 7 Meters

MICROPHONE LOCATION	OCTAVE BAND CENTER FREQUENCY									
	31.5	63	125	250	500	1000	2000	4000	8000	dB <sub>A</sub>
FRONT	24.9	50.0	55.5	49.6	55.1	47.5	45.7	41.5	33.9	61.2
RIGHT	25.0	52.0	55.5	50.5	56.5	48.2	50.4	42.3	38.4	61.8
REAR	26.8	47.4	52.5	52.1	56.5	51.5	48.3	44.8	35.8	62
LEFT	24.0	43.4	54.6	48.0	57.2	46.6	46.7	43.6	36.9	61.8
Average	25.2	48.2	54.5	50.0	56.3	48.4	47.8	43.0	36.3	61.7

Test Load: **30 kW**      240 Volt      Distance 7 Meters

MICROPHONE LOCATION	OCTAVE BAND CENTER FREQUENCY									
	31.5	63	125	250	500	1000	2000	4000	8000	dB <sub>A</sub>
FRONT	21.7	59.7	54.3	49.1	56.1	47.5	46.5	42.1	34.5	62.7
RIGHT	21.3	58.5	56.4	52.5	55.4	50.7	53.0	44.2	38.8	63.0
REAR	24.1	55.9	51.9	53.1	56.7	52.0	48.8	45.0	34.8	62.9
LEFT	26.6	47.7	53.5	48.8	57.5	47.2	48.1	43.4	37.4	62.6
Average	23.4	55.5	54.0	50.9	56.4	49.4	49.1	43.7	36.4	62.8

Location	30 kW	No Load
Front	~62.5	~61.2
Right	~63.0	~61.8
Rear	~62.5	~61.5
Left	~62.0	~61.8

1. All positions at 23 feet (7 meters) from side faces of generator set.
2. Test conducted on a 100 foot diameter asphalt surface.
3. Data subject to change without notice

GENERAC POWER SYSTEMS, INC
Rev 0
Prelim 3/12



10,000BTU HVAC AC

# Exhibit 2A

## TECHNICAL DATA 10,000 BTU/HR. AIR CONDITIONER

<b>General</b>		
Model number		AC 10000B
Mounting method		Outdoor
Unit dimensions (height x width x depth)	Inch [mm]	47.3 x 19.3 x 12.2 [1201 x 490 x 309]
Weight	lbs [kg]	115 [52]
<b>Performance</b>		
Max. Cooling at 131°F internal/ 131°F ambient (55°C/55°C)	BTU/h [W]	10700 [3133]
Max. Cooling at 95°F internal/ 95°F ambient (35°C/35°C)	BTU/h [W]	10170 [2977]
Internal airflow by air conditioning - maximum	CFM [m³/h]	450 [765]
External airflow by air conditioning - maximum	CFM [m³/h]	710 [1205]
Refrigerant type		R134a
Operational temperature range	°F [°C]	-40 to 131 [-40 to 55]
Noise, 1.5m distance	dB(A)	65
Heater	Watts	2000
<b>Electrical Data</b>		
Input voltage	Volts	208/230 VAC
Frequency	Hz	50/60 Hz
Max. power consumption (Cooling) @ 55°C/55°C	Amps	11.0
<b>Approvals</b>		
RoHS, UL and cUL compliant	✓	SA10718
<b>Construction</b>		
Material		Galvanized Steel, Stainless Steel Optional
Finish		Textured Powder Coat Standard, Color options available by request



10,000BTU HVAC DC

## TECHNICAL DATA 10,000 BTU/HR. AIR CONDITIONER

<b>General</b>		
Model number		Air Conditioner 10000Z
Mounting method		Outdoor
Unit dimensions (height x width x depth)	Inch [mm]	47.3 x 19.3 x 12.2 [1201 x 490 x 309]
Weight	lbs [kg]	115 [52]
<b>Performance</b>		
Max. Cooling at 131°F internal/ 131°F ambient (55°C/55°C), -54vdc	BTU/h [W]	10700 [3133]
Max. Cooling at 95°F internal/ 95°F ambient (35°C/35°C), -54vdc	BTU/h [W]	10170 [2977]
Internal airflow by air conditioning - maximum	CFM [m³/h]	450 [765]
External airflow by air conditioning - maximum	CFM [m³/h]	710 [1205]
Refrigerant type		R134a
Operational temperature range	°F [°C]	-40 to 131 [-40 to 55]
Noise, 1.5m distance	dB(A)	65
Heater	Watts	500
<b>Electrical Data</b>		
Input voltage	Volts	48 VDC, +20%/-15%
Max. power consumption (Cooling) @ 55/55, -54vdc	Amps	29.0
Max. power consumption (Cooling) @ 35/35, -54vdc	Amps	21.0



4,000BTU HVAC DC

This table shows the technical data for 4000 & 6000 BTU models.

Specification	Unit	DC Air Conditioner 4000Z	DC Air- Conditioner 6000Z
Mounting Method		Outdoor	
Unit dimensions (heightxwidthxdepth)	Inch [mm]	29.0x17.3x11.3 [737x439x286]	
Weight	lbs [kg]	90 [40]	
<b>Performance 48VDC (40-60 VDC)</b>			
Cooling capacity at 131°F internal/ 131°F ambient (55°C/55°C)	BTU/h [W]	4200 [1230]	5900 [1730]
Cooling capacity at 95°F internal/ 95°F ambient (35°C/35°C)	BTU/h [W]	3900[1140]	5300 [1550]
Internal airflow by air conditioning	CFM [m <sup>3</sup> /h]	250[425]	300[509]
External airflow by air conditioning	CFM [m <sup>3</sup> /h]	250[425]	300[509]
Refrigerant type		R134a	
Operational temperature range	°F [°C]	-40→131 [-40 to 55]	
Noise, 1.5m distance	dB(A)	<62	<65
Heater	Watts	500	700



# Exhibit 2B



LT-SS4C215XC1  
Equipment Issue 1  
4th Printing, March 2014

## Charles Universal Broadband Enclosure (CUBE) SS4C215XC1 Description

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2. PRODUCT DESCRIPTION .....	1
3. CUBE WIRING AND EQUIPMENT .....	1
4. TECHNICAL ASSISTANCE & REPAIR SERVICE .	4
5. WARRANTY & CUSTOMER SERVICE .....	4
6. SPECIFICATIONS .....	4

### 2. PRODUCT DESCRIPTION

This section contains information for the CUBE's physical design and interior components. The CUBE is 74" high and has an equipment compartment and a battery compartment that has three battery trays. Additional equipment in this CUBE is the 48VDC power system. Figure 2 shows the main components of the CUBE.

### 3. CUBE WIRING AND EQUIPMENT

After the CUBE is properly mounted in the desired location, install power, ground and battery connections. Refer to Figure 3 for a block diagram of the internal wiring.

### 1. DOCUMENT PURPOSE

This document provides additional information for the Charles Industries' Universal Broadband Enclosure CUBE-SS4C215XC1 that is not covered in the site support family document LT-SS24SS48. A front view of the CUBE is shown in Figure 1.

**- WARNING -**  
**Perform all bonding and grounding connections prior to any electrical and communications connections.**

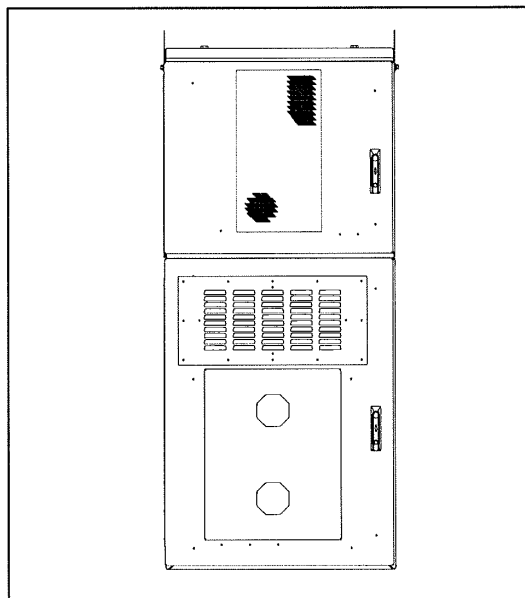


Figure 1 Closed view of the CUBE

#### 3.1 Making Ground Connections

There is one 2x8 position ground bar in the equipment compartment. This should be used for all grounding of internal equipment. There are two external double lugs on the bottom rear of the cabinet for connecting site ground wires

#### 3.2 AC Voltage Connections

The installer connects the utility's incoming single phase 220VAC 60Hz (100A max) to the enclosure.

#### 3.3 GE Infinity S Power System

The GE Infinity S power system ships with (4) 48VDC 50A rectifiers. The DC distribution shelf supports both 24V and 48V. The DC converters are not provided for the 24VDC output. 48VDC distribution includes (14) 30A load breakers, a 20A breaker for the thermal electric coolers (TEC) in the battery compartment, a 5A for the heat exchanger and a 6 position GMT fuse panel.

The 2AWG battery cables are connected to the bulk output on the rear of the power system.

Refer to the GE power supply documentation located inside the CUBE for information regarding the power supply operation and configuration.

#### 3.4 Heat exchanger

The 750W heat exchanger in the equipment compartment has a speed controller and is connected to a 5A circuit breaker on the 48V power system. The heat exchanger is a light weight, low power, long life maintenance free cabinet cooler that is mounted on the

LT-SS4C215XC1



door. The closed loop unit transfers the heated internal air to the outside while pulling the cool ambient air to the inside. For more information, refer to the heat exchanger documentation found inside the CUBE.

### 3.5 Thermal Electric Cooler (TEC) Connections

The two 200W TEC devices are covered by a shroud with their wiring tied in parallel and routed thru a relay that is controlled by a thermostat. The thermostat is set to 25°C with an adjustable range of 0 to 60°C. The wiring is then connected to the 20A circuit breaker on the 48V DC power system in the equipment compartment.

### 3.6 Converting to Ni-Cd batteries

This CUBE is configured for VRLA batteries. The CUBE can be converted to use Ni-Cd batteries by doing the following steps.

1. Remove the side and rear retaining battery brackets by removing the six hex head screws.
2. The battery temperature probes are no longer needed and can be removed and disabled from the power supply configuration.
3. Replace battery cables with battery cable #03-200728-0.
4. The Ni-Cd batteries are temperature hardened and therefore the TEC thermostat can be changed to 50°C to conserve power.

### 3.7 Verifying the installation

Verify that earth ground and all grounding and bonding is complete and functional. After verifying that all installer connections are secure and complete, apply AC power and verify that equipment turns up correctly.

## 4. TECHNICAL ASSISTANCE & REPAIR SERVICE

For questions on product repair or if technical assistance is required, contact Charles Technical Support at:

847-806-8500  
800-607-8500  
847-806-8556 (FAX)  
techserv@charlesindustries.com (email)  
[http://www.charlesindustries.com/main/tech\\_support.htm](http://www.charlesindustries.com/main/tech_support.htm)

## 5. WARRANTY & CUSTOMER SERVICE

Charles Industries, Ltd. offers a 1 year warranty on the CUBE product. The Charles warranty is limited to the operation of the CUBE hardware as described in this documentation and does not cover equipment which may be integrated by a third party. The terms and conditions applicable to any specific sale of product shall be defined in the resulting sales contract. For questions on warranty or other customer service assistance, contact your Charles Customer Service Representative at:

847-806-6300  
847-806-6653 (FAX)  
mktserv@charlesindustries.com (email)  
[http://www.charlesindustries.com/main/telecom\\_sales\\_support.htm](http://www.charlesindustries.com/main/telecom_sales_support.htm)

## 6. SPECIFICATIONS

The physical specifications are shown in Table I.

Color	Off-White
Size and Weight	74x32x32" 740lbs empty, 1990lbs fully loaded
Battery Tray Size	12.75"H x 21"W x 27"D
Materials: Cabinet Battery Trays	.125 welded Aluminum 10GA Steel
Equipment Rack Space	15RU 23" EIA Hole Spacing
Equipment Heat Exchanger	Dantherm 750W 48VDC
48VDC Power System	GE Infinity S #NES4824-23-AC5-PS8-DC 2E
Thermal Electric Cooler	(2) 200W 48VDC
Bonding and Grounding	One 2x8 Position Ground Bar in equipment compartment
Covered Bus Bars	2 hole on .625" spacing with 1/4"-20 threaded holes and screws
Battery Type	48V VRLA
Filter	#39-000187-0
Replacement Gasket	#39-000352-0
Operating Temp. Range, Inside Enclosure	-40° to +149°F, -40° to 65°C
Operating Temp. Range, Outside Enclosure	-40° to +115°F, -40° to 46°C
Humidity	0 to 95% (non-condensing)
Altitude	Up to 2,000 meters (6560')

Table I CUBE Physical Specifications



LT-SS4C215XC1

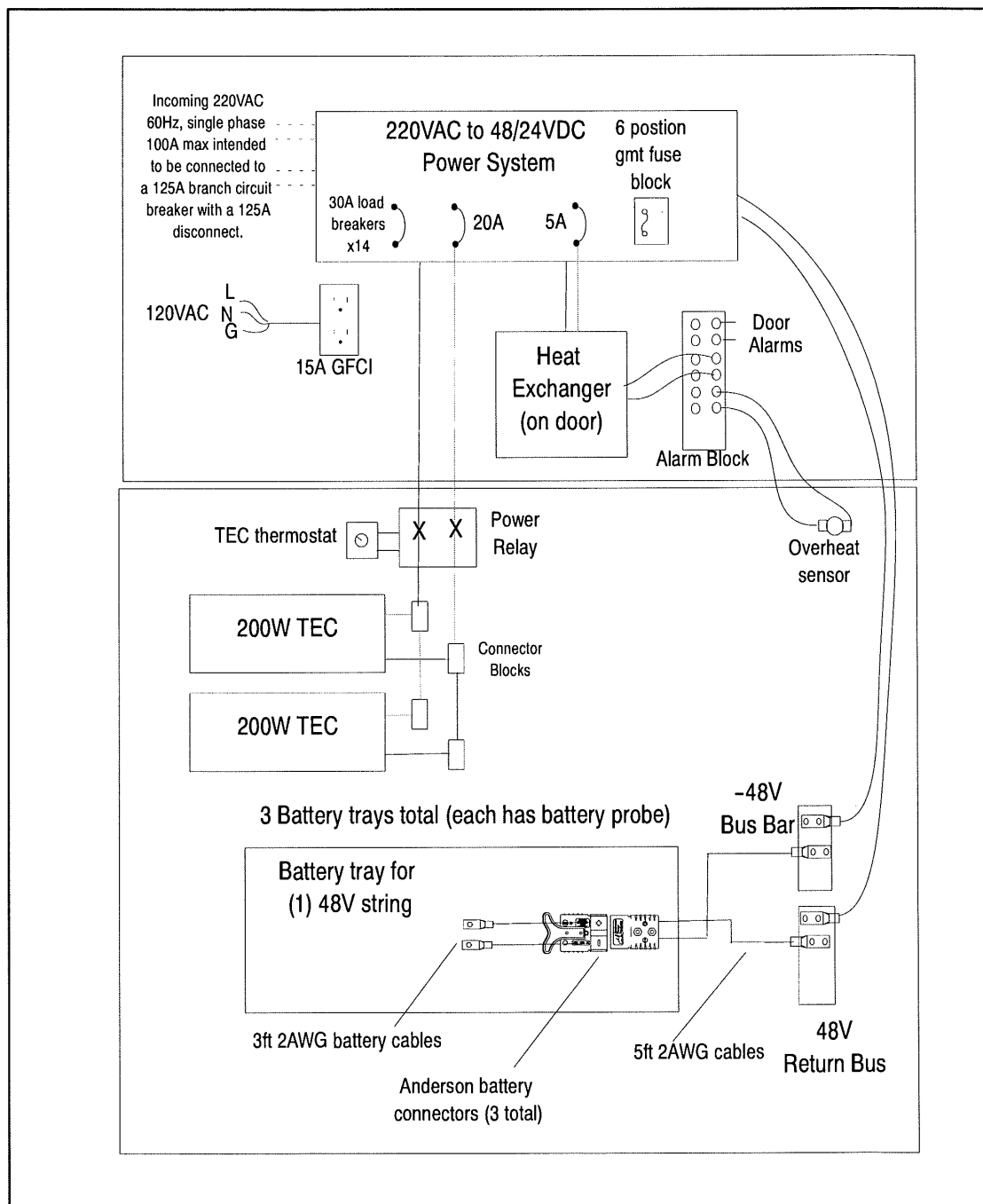


Figure 3 Block Diagram for the SS4C215XC1

LT-SS4C215XC1

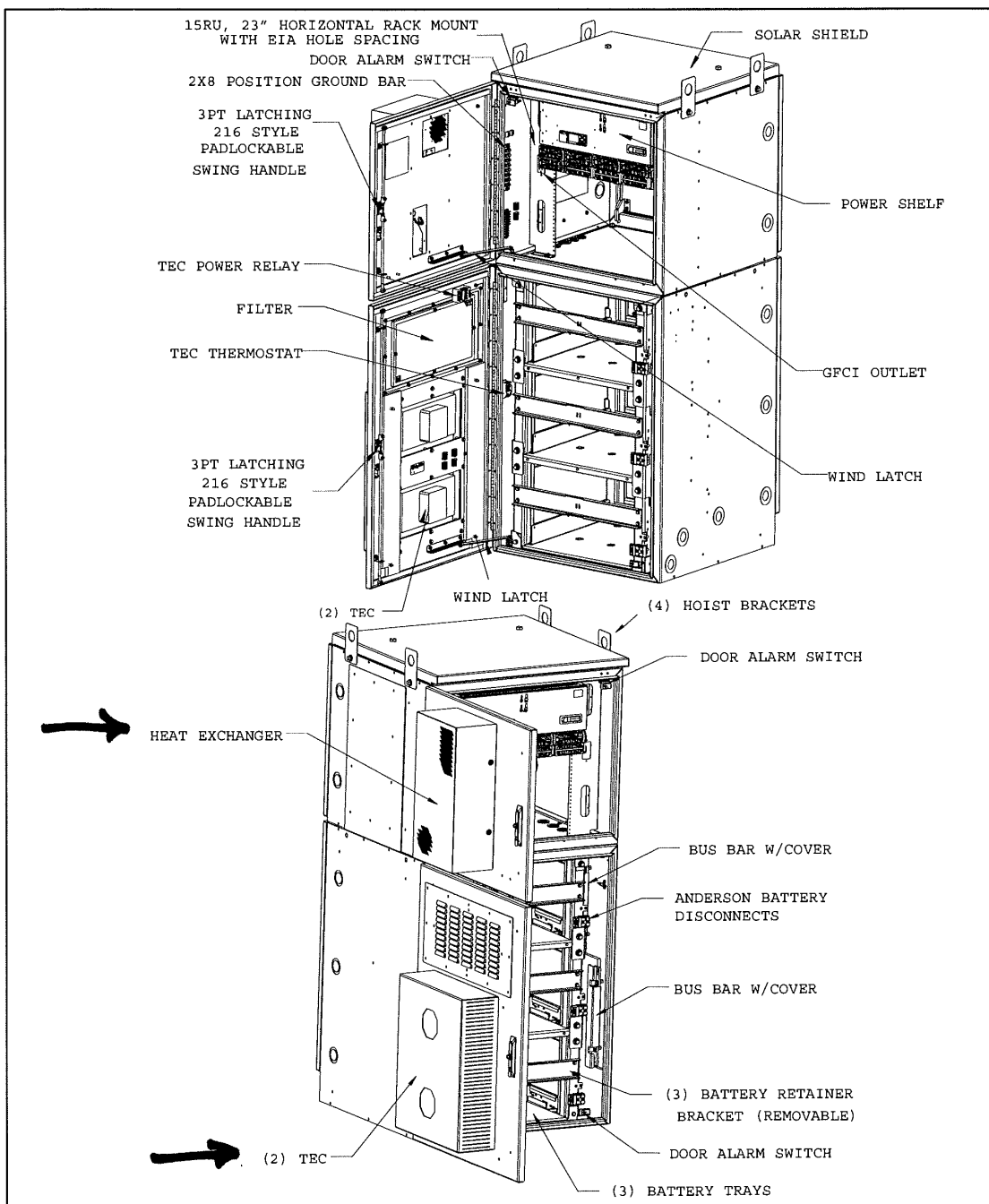
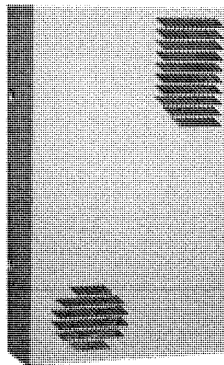


Figure 2 CUBE Components

# Exhibit 2B.1

**Dantherm**<sup>®</sup>  
CONTROL YOUR CLIMATE



## HEAT EXCHANGER 22 PS023022

DANTHERM's Heat Exchangers are specifically designed for the removal of heat from cabinets containing temperature-sensitive electrical, electronic, or telecommunications equipment. Closed-loop cooling maintains a clean, sealed internal environment to ensure optimum performance and maximum life of the enclosed electronics, while protecting against the intrusion of airborne contaminants and humidity.

### FEATURES AND BENEFITS

#### Standard Features

- Closed-loop cooling to prevent ingress of environmental contaminants
- Filterless design requires little to no service
- Compact, lightweight unit for easy installation
- Environmentally-friendly design, CFC and refrigerant-free
- High-quality, high-performance, high-pressure drop BCI fans
- Efficient-coated aluminum cross-flow core
- Engineered for extreme and/or corrosive environments
- Designed in accordance with GR-487 specifications

#### Optional Features

- Fan speed controller with alarm test sequence
- Stainless steel material and custom paint finishes
- Extended warranty & maintenance packages

#### Closed-Loop Cooling

The closed-loop internal circuit protects the enclosed equipment from heat and airborne contaminants in all types of hostile environments. The creation of a controlled environment allows the enclosed equipment to operate under the best possible temperature and environmental conditions.

#### Applications

- Radio base stations
- Telecom shelters
- Indoor & outdoor cabinets and enclosures
- Power supply cabinets, Battery cabinets and Rectifier cabinets
- Network switching rooms, Computer rooms
- Automation control cabinets, Process control centers
- Machine cooling & CNC machines
- Drive cabinets, Turbine control cabinets
- Digital advertisement boards, Kiosk display systems

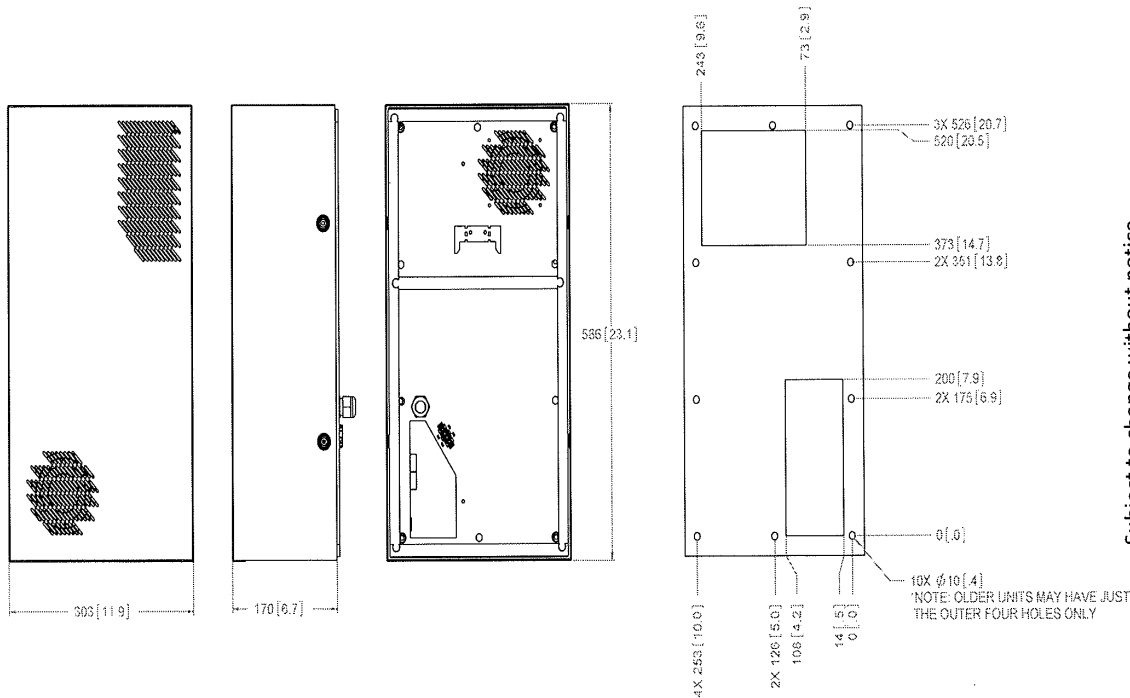


**TECHNICAL DATA**  
**HEAT EXCHANGER 22**

General					
Model number		PS023022A	PS023022B	PS023022Z	PS023022Y
Mounting method		Outdoor			
Unit dimensions (height×width×depth)	Inch [mm]	23×12×7 [584.2×304.8×177.8]			
Weight	lbs [kg]	23 [10.5]			
Performance					
Cooling Capacity	W/°F [W/°C]	22 (40)			
Operational temperature range	°F [°C]	-40 to 149 [-40 to 65]			
Noise (1.5m distance)	dB(A)	65			
Electrical Data					
Input voltage	Volts	120 VAC	240 VAC	48 VDC	24 VDC
Current	Amps	0.5	0.3	1.75	2.3
Approvals					
RoHS, UL and cUL compliant	✓	UL file SA12349			
Construction					
Material		Aluzink Standard, Stainless Steel Optional			
Finish		Textured Powder Coat Standard, Color options available by request			



**DIMENSIONAL DIAGRAM-MOUNTING INTERFACE**



Subject to change without notice  
08\_2014



Exhibit 2B.2

99-004478-0  
 HET200PB-002  
 W/NORM CLOSED ALARM



**Specification For Approval**

Customer : \_\_\_\_\_  
 Description : Thermal Electric Cooling 200W  
 Customer part no : \_\_\_\_\_ Rev. : \_\_\_\_\_  
 Delta model no : HET200PB Rev. : 03  
 Sample issue no : \_\_\_\_\_  
 Sample issue date : JUN .21.2013

Modify history

Rev.	Description	Drawn	Approved	Issue Date
00	ISSUE SPEC	Nick Wang	Diamond Chen	2012/1/18
01	Adding 2-4 & 6	Ted.Tu	Diamond Chen	2012/12/12
02	Modify the noise.	Nick Wang	Diamond Chen	2013/4/16
03	Add the safety trademark	Nick Wang	Diamond Chen	2013/06/21

Please send one copy of this specification back after you signed approval for production pre-arrangement

Approved by : \_\_\_\_\_

Date : \_\_\_\_\_

DELTA ELECTRONICS, INC.  
 252, SHANG YING ROAD, KUEI SAN  
 TAOYUAN HSIEN 333, TAIWAN, R. O. C.

TEL : 886-(0)3-3591968  
 FAX : 886-(0)3-3591991

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- 5. User cable----- 12
  - 5-1. Power cable
  - 5-2. Alarm cable

Specification for approval

Customer :

Description : Thermal Electric Cooling 200W

Customer P/N :

Rev. :

Delta model no. : HET200PB

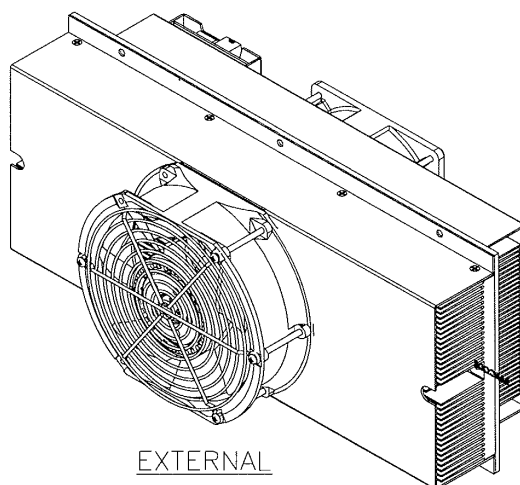
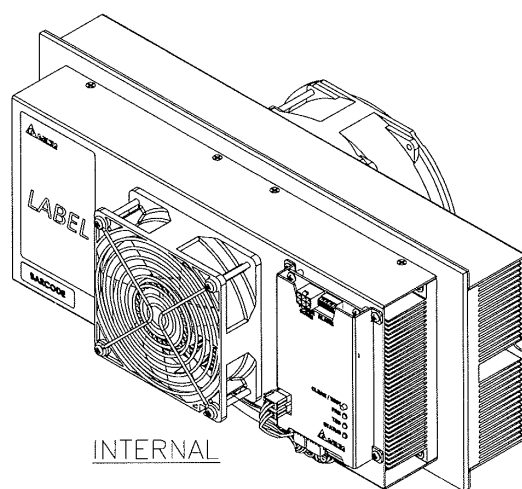
Rev. : 03

Sample revision :

Issue no. :

Sample issue date :

Quantity : sets



Part no. :

Delta model no. : HET200PB

**1. Description**

**1-1. General description :**

The Thermal Electric Cooling (TEC) is designed for direct air to air heat removal in the cabinet. It is easy to be installed in the cabinet (recommended on the door of the cabinet) with the nuts.

The internal and external air circulation loops of the TEC Module are separated to prevent the entry of dust, humidity and dirt. The unit conforms to IP55 protection rating on the external air circuit.

**1-2. Main feature (Operating 48VDC at 25 ° c)**

Main feature	Unit	Model Number
		HET200PB
Outline dimension	mm	400 H x 180 W x 208 D
Weight	Kg	9.0 ± 0.5
Cooling capacity ( $\Delta T = 0$ °C)	W	200
Heating capacity @-40 ° C	W	225
Rated voltage	VDC	48 (TYP.)
Operating voltage range	VDC	40~56
Rated Current	A	6.7 (TYP.)
Rated Consumption	W	321.6
Operating temperature	°C	-40~55
Internal airflow rate	cfm	100 (TYP.)
External airflow rate		120 (TYP.)
Acoustic noise at 1M : (Sound pressure)	dB-A	61.0 dB-A(Typ.)
		64.0(Max.)

Cooling and heating capacity is for internal side.

**Rincon Consultants, Inc.**449 15th Street, Suite 303  
Oakland, California 94612

510 834 4455 OFFICE

info@rinconconsultants.com  
www.rinconconsultants.comMay 24, 2019  
Project No: 19-07869Layal Nawfal  
Associate Planner  
City of Berkeley, Land Use Planning Division  
2180 Milvia Street  
Berkeley, California 94704  
Via email: [Lnawfal@cityofberkeley.info](mailto:Lnawfal@cityofberkeley.info)**Subject: Berkeley Hills Cellular Facility Project, Third-Party Review of Noise Analysis  
Berryman Reservoir, Berkeley, California 94704**

Dear Ms. Nawfal:

Rincon Consultants, Inc. has reviewed the Statement of Hammet and Edison, Inc. Consulting Engineers, regarding the Proposed Base Station (Site No. 273566 "Berkeley Hills") dated December 17, 2018. The Statement was reviewed to ascertain the degree to which the evaluation considered existing information (e.g., literature, databases, and other resources) and the accuracy of existing conditions documentation (e.g., distance to sensitive receptors and existing noise levels); and to evaluate the adequacy of modeling assumptions and results. Our comments are as follows.

1. Page 3, Table listing equipment and associated noise levels. The table list three different types of equipment. Rincon has evaluated the noise level data presented. The data for the Generac SD030 states the noise level with a Level 2 enclosure would be 62 dBA at 23 feet. This information does not match the noise level data provided by the manufacturer that is available online, which shows a noise level of 68 dBA with a Level 2 cover at 23 feet. The analysis does not offer enough detail to determine how the noise level reported in the table was derived. It appears the reduced noise level is associated with the short testing time; however, that is not clear. Please revise the analysis to show the published noise levels and list all assumptions and calculations incorporated into the analysis.
2. Page 3, Table listing equipment and associated noise levels. The table lists two different types of Charles Industries equipment, CUBE-SSA4C215XC1 and CUBE-PM639. Rincon contacted Charles industries to verify the reported noise levels; however, Rincon was unable to verify the noise level data for these units for a couple of reasons. Charles Industries indicated the CUBE-PM639 is not a proper model number. The model number is missing several designations to identify the actual unit proposed. Charles industries also indicated the noise level data is based on a 1-meter distance. Please include the specification sheets of all the proposed units with the manufacture's noise level data used in the analysis and the calculations used to determine the noise level at the nearest residence in an appendix.
3. Page 3, Paragraph following the table listing equipment and associated noise levels. The analysis of noise levels the combined noise level from the project with the ambient noise level. This is inappropriate as the City noise level limits are applicable only to the noise source and should not be evaluated by adding the source to the ambient noise level. As stated in Section 13.040.050, "No



City of Berkeley, Land Use Planning Division  
Third-Party Review of Noise Analysis – Berkeley Hills Cellular Facility Project

person shall operate or cause to be operated any source of sound at any location within the incorporated City or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person..." Thus the noise limits apply only to the source being operated. Please revise the analysis to remove the discussion of project plus ambient.

Thank you for the opportunity to provide third-party review services for this project. If you have any questions about this letter, please do not hesitate to contact us.

Sincerely, p  
Rincon Consultants, Inc.

A handwritten signature in black ink that reads "William A. Maddux". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

William A. Maddux  
Senior Environmental Scientist

**Verizon Wireless • Proposed Base Station (Site No. 273566 “Berkeley Hills”)  
EBMUD Berryman Reservoir • Berkeley, California**

**Statement of Hammett & Edison, Inc., Consulting Engineers**

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of Verizon Wireless, a personal telecommunications carrier, to evaluate the base station (Site No. 273566 “Berkeley Hills”) proposed to be located at EBMUD Berryman Reservoir in Berkeley, California, for compliance with appropriate guidelines limiting sound levels from the installation.

**Executive Summary**

Verizon proposes to install a new base station, consisting of equipment cabinets, an emergency generator, and antennas on a tall pole, at EBMUD Berryman Reservoir in Berkeley, California. Noise levels from the equipment operations are calculated to comply with the City’s limits.

**Prevailing Standards**

The City of Berkeley sets forth limits on sound levels in Section 13.40.050 (Exterior Noise Standards) of its Municipal Code, including the follow limits for noise lasting more than 30 minutes in any hour in the indicated zone:

<u>Zone</u>	<u>Time Period</u>	<u>Noise Limit</u>
R-1	“Day” 7 a.m. to 10 p.m.	55 dBA
	“Night” 10 p.m. to 7 a.m.	45 dBA
Commercial	“Day” 7 a.m. to 10 p.m.	65 dBA
	“Night” 10 p.m. to 7 a.m.	60 dBA

The more restrictive noise limits apply whenever adjacent parcels have different zoning. Section 13.40.500A.3. raises the acceptable noise limits to equal the existing, ambient levels, when those levels exceed the allowable levels from the table above. Section 13.40.050A.2. allows for higher sound levels of short duration, including +5 dBA for 15 minutes or less in any hour.

Section 13.40.080 exempts from the above standards the performance of emergency work, defined by §13.40.020 to include “work by private or public utilities to restore utility service,” such as the operation of the back-up power generator when commercial power is unavailable. Figure 1 attached describes the calculation methodology used to determine applicable noise levels for evaluation against the prevailing standard.

**General Facility Requirements**

Wireless telecommunications facilities (“cell sites”) typically consist of two distinct parts: the electronic base transceiver stations (“BTS” or “cabinets”) that are connected to traditional wired telephone lines, and the antennas that send wireless signals created by the BTS out to be received by individual subscriber units. The BTS are often located outdoors at ground level and are connected to

**Verizon Wireless • Proposed Base Station (Site No. 273566 “Berkeley Hills”)  
EBMUD Berryman Reservoir • Berkeley, California**

the antennas by coaxial cables. The BTS typically require environmental units to cool the electronics inside. Such cooling is often integrated into the BTS, although external air conditioning may be installed, especially when the BTS are housed within a larger enclosure.

Most cell sites have back-up battery power available, to run the base station for some number of hours in the event of a power outage. Many sites have back-up power generators installed, to run the station during an extended power outage.

### **Site & Facility Description**

Based upon information provided by Verizon, including zoning drawings by Streamline Engineering and Design, Inc., dated March 13, 2018, that carrier proposes to place several equipment cabinets in a fenced compound to be constructed to the northeast of the municipal water tank located at the EBMUD Berryman Reservoir facility in Berkeley. For the purpose of this study, the four equipment cabinets within the compound with active cooling fans are assumed to be Charles Models: two CUBE-SS4C215XC1 and two CUBE-PM639.

A Generac Model SD030 back-up diesel generator, configured with the manufacturer’s Level 2A sound attenuated enclosure, is to be installed for emergency use in the event of an extended commercial power outage. The generator is typically operated with no load for a single 15-minute period once a week during daytime hours on a weekday, to maintain its readiness for emergency operation.

Several directional panel antennas are proposed to be installed on a tall pole to be sited about 55 feet northwest of the compound; this portion of the base station is passive, generating no noise. The subject and surrounding parcels are zoned “Residential,” although only parcels to the east, south, and west are of residential land use; the parcels to the north contain a public walkway and park. The nearest parcel with residential land use is about 140 feet to the east of the compound; parcels to the south and west are farther away.

### **Ambient Noise Measurement**

The site was visited by Ms. Amelia Ngai, a qualified engineer employed by Hammett & Edison, Inc., around noon on December 6, 2018, a non-holiday weekday, to set in place a Larson Davis SoundTrack LXT Sound Level Meter (Serial No. 0005461), under current calibration by the manufacturer. The monitoring equipment was placed on the site’s property line fence near the nearest residential property line, as shown in Figure 2, and it was retrieved the following afternoon, to provide a full 24-hour period for analysis. The maximum measured hourly median ambient noise levels at that location during daytime and nighttime hours were 45.4 dBA during the day and 40.5 dBA at night.



**Verizon Wireless • Proposed Base Station (Site No. 273566 “Berkeley Hills”)  
EBMUD Berryman Reservoir • Berkeley, California**

**Study Results**

Information provided by the manufacturers gives the following maximum noise levels from the proposed equipment:

<u>Equipment Cabinets</u>	<u>Maximum Noise Level</u>	<u>Reference Distance</u>
(2) CUBE-SSA4C215XC1	67.3 dBA	1.5 meters
(2) CUBE-PM639	65 dBA	1.5 meters
Generac SD030 (no-load)	62 dBA	23 feet

The maximum calculated noise level at the nearest parcel containing a residence, for the combined operation of all fans in all four cabinets, is 42.9 dBA. Added to the measured ambient noise levels, the resulting noise levels at that location are 47.3 dBA during the day and 44.8 dBA at night, meeting the City’s residential 55 dBA daytime and 45 dBA nighttime limits. On the day the generator is tested, the daytime noise level rises to 48.1 dBA, well below the City’s residential daytime noise limit.

**Conclusion**

Based on the information and analysis above, it is the undersigned’s professional opinion that the operation of the Verizon Wireless base station proposed to be located at Berryman Reservoir in Berkeley, California, will comply with the City’s requirements for limiting acoustic noise emission levels.

**Authorship**

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration Nos. E-13026 and M-20676, which expire on June 30, 2019. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.

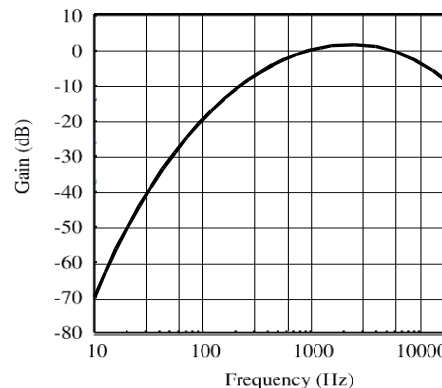
December 17, 2018



*William F. Hammett*  
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 William F. Hammett, P.E.  
 707/996-5200

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Most municipalities and other agencies specify noise limits in units of dBA, which is intended to mimic the reduced receptivity of the human ear to Sound Pressure (“L<sub>p</sub>”) at particularly low or high frequencies. This frequency-sensitive filter shape, shown in the graph to the right as defined in the International Electrotechnical Commission Standard No. 179, the American National Standards Institute Standard No. 5.1, and various other standards, is also incorporated into most calibrated field test equipment for measuring noise levels.



30 dBA	library
40 dBA	rural background
50 dBA	office space
60 dBA	conversation
70 dBA	car radio
80 dBA	traffic corner
90 dBA	lawnmower

The dBA units of measure are referenced to a pressure of 20 μPa (micropascals), which is the threshold of normal hearing. Although noise levels vary greatly by location and noise source, representative levels are shown in the box to the left.

Manufacturers of many types of equipment, such as air conditioners, generators, and telecommunications devices, often test their products in various configurations to determine the acoustical emissions at certain distances. This data, normally expressed in dBA at a known reference distance, can be used to determine the corresponding sound pressure level at any particular distance, such as at a nearby building or property line. The sound pressure drops as the square of the increase in distance, according to the formula:

$$L_p = L_K + 20 \log(D_K/D_p),$$

where L<sub>p</sub> is the sound pressure level at distance D<sub>p</sub> and L<sub>K</sub> is the known sound pressure level at distance D<sub>K</sub>.

Individual sound pressure levels at a particular point from several different noise sources cannot be combined directly in units of dBA. Rather, the units need to be converted to scalar sound intensity units in order to be added together, then converted back to decibel units, according to the formula:

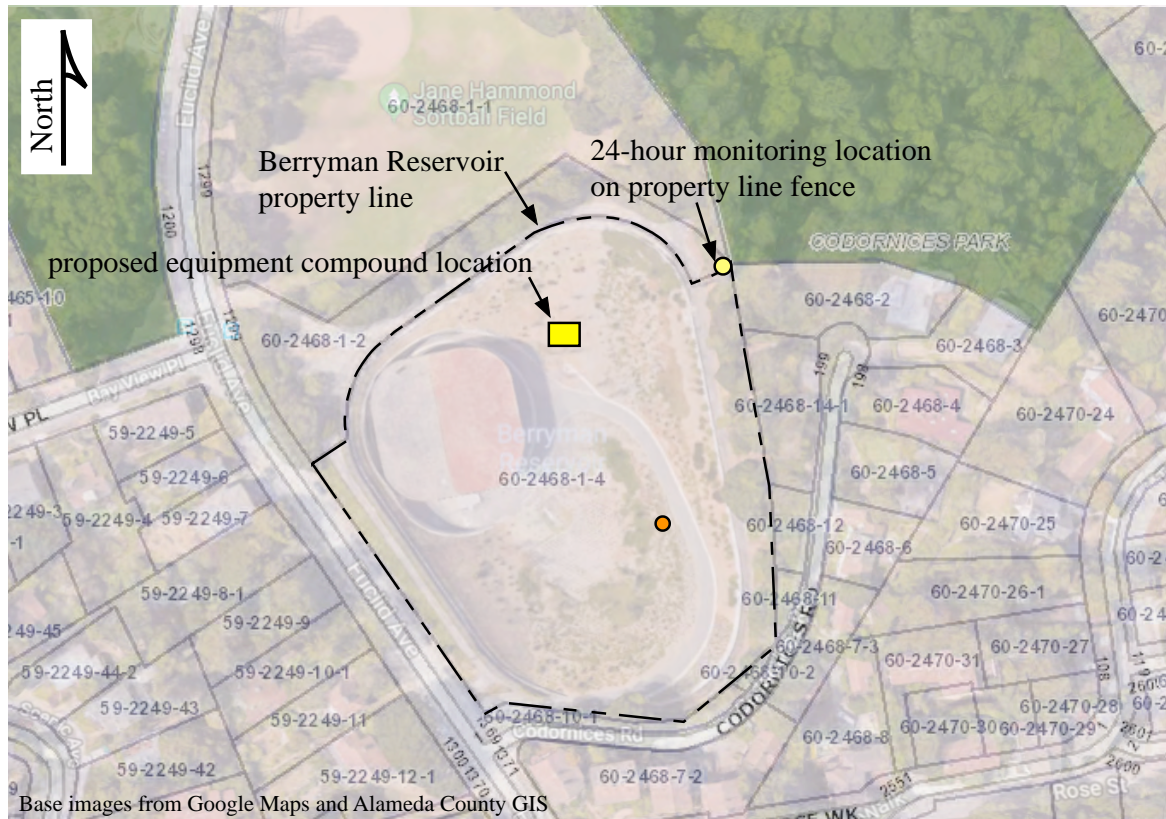
where L<sub>T</sub> is the total sound pressure level and L<sub>1</sub>, L<sub>2</sub>, etc are individual sound pressure levels.

$$L_T = 10 \log (10^{L_1/10} + 10^{L_2/10} + \dots),$$

Certain equipment installations may include the placement of barriers and/or absorptive materials to reduce transmission of noise beyond the site. Noise Reduction Coefficients (“NRC”) are published for many different materials, expressed as unitless power factors, with 0 being perfect reflection and 1 being perfect absorption. Unpainted concrete block, for instance, can have an NRC as high as 0.35. However, a barrier’s effectiveness depends on its specific configuration, as well as the materials used and their surface treatment.

**Verizon Wireless • Proposed Base Station (Site No. 273566 “Berkeley Hills”)  
EBMUD Berryman Reservoir • Berkeley, California**

**24-Hour Monitoring Location**



Base images from Google Maps and Alameda County GIS

**PLAN VIEW**



Photograph taken December 6, 2018

**VIEW LOOKING EAST**



June 6, 2019

City of Berkeley  
 Planning and Development Department  
 2120 Milvia Street, 2<sup>nd</sup> Floor  
 Berkeley, CA 94704

RE: Verizon Wireless Annual Compliance Certification – City of Berkeley, CA

This letter is to certify that Verizon sites within the City of Berkeley are operating within FCC compliance and Verizon is in compliance with section 23C.17090 A1 and 2 of the Zoning Ordinance. The Verizon Wireless Facilities within the City of Berkeley are listed below.

Site Number	Location Name	Street Address
123269	ADELIN MLK	3332 Adeline Street
288227	BANCROFT & PIEDMONT	2700 Bancroft Way
123276	BERKELEY B2B	9th Street and Heinz Avenue
156621	BERKELEY BENKINS	2721 Shattuck Avenue
123562	BERKELEY DT	2199 Addison Street
123223	BERKELEY-CLAREMONT	2942 Domingo Avenue
291090	COLLEGE & DWIGHT	2750 Dwight Way
291094	DWIGHT & SACRAMENTO	2517 Sacramento Street
262658	FOURTH ST SC1	423 Delaware Street
308578	FOURTH ST SC3	717 Virginia Street
184292	GILMAN ST	1050 Gilman Street
286640	HWY 80 GILMAN	1285 Eastshore Highway
123232	HWY 80/UNIVERSITY	611 Hearst Street
123316	KENSINGTON CIRCLE	1760 Solano Avenue
157070	LOWER UNIVERSITY	2002 Acton Street
123338	SHATTUCK NORTH	1540 Shattuck Avenue
123335	SHATTUCK SOUTH	2855 Telegraph Avenue
291893	SOUTHWEST BERKELEY SC1	2502 10th Street
291894	SOUTHWEST BERKELEY SC2	Parker & 9th Street
291895	SOUTHWEST BERKELEY SC3	2501 8th Street
291896	SOUTHWEST BERKELEY SC4	910 Parker Street

291897	SOUTHWEST BERKELEY SC5	2657 9th Street
291898	SOUTHWEST BERKELEY SC6	Parker & 10th Street
123322	UC BERKELEY EAST	Barrows Hall Rooftop
166863	UC BERKELEY SOUTH SIDE	2500 Durant Avenue

Thank you,

*Scott Stewart 6/6/19*

Scott Stewart  
Director of Real Estate Northern California/Northern Nevada  
**Verizon Wireless**

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**Subject:** FW: Verizon Cell Tower at Berryman Reservoir

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**From:** Sanford, David  
**Sent:** Friday, June 21, 2019 9:59 AM  
**To:** Nawfal, Loyal <LNawfal@cityofberkeley.info>  
**Cc:** Buckley, Steven <StBuckley@cityofberkeley.info>  
**Subject:** FW: Verizon Cell Tower at Berryman Reservoir

Hi Loyal,

This is a cell tower inquiry that I think should go to you.

David

---

**From:** Harrington, Phillip  
**Sent:** Friday, June 21, 2019 9:57 AM  
**To:** Sanford, David <[DSanford@cityofberkeley.info](mailto:DSanford@cityofberkeley.info)>  
**Cc:** Buckley, Steven <[StBuckley@cityofberkeley.info](mailto:StBuckley@cityofberkeley.info)>  
**Subject:** FW: Verizon Cell Tower at Berryman Reservoir

Good morning David,

Do you have any status updates on this Zoning Permit? Phil

---

**From:** Sullivan, Sharla [<mailto:sharla.sullivan@ebmud.com>]  
**Sent:** Tuesday, June 18, 2019 3:34 PM  
**To:** [rothappeal@gmail.com](mailto:rothappeal@gmail.com)  
**Cc:** Harrington, Phillip <[PHarrington@cityofberkeley.info](mailto:PHarrington@cityofberkeley.info)>  
**Subject:** RE: Verizon Cell Tower at Berryman Reservoir

Dear Mr. Roth,

Thank you for your email detailing your opposition to the proposed Verizon cell tower at EBMUD's Berryman Reservoir in Berkeley. EBMUD is not the permitting agency for the pole, we are merely the lessor of property.

The decision to allow or disallow the tower's construction lies solely with the City of Berkeley as they are the permitting agency. I copied the City's Public Works Director, Phil Harrington, on this response. He will send your comment along to the City's Permitting Department. Please ensure you and your neighbors are sending comments about the proposed tower to the City's Public Works department for proper recording.

Thanks,

Sharla Sullivan | Community Affairs Representative  
East Bay Municipal Utility District  
375 11<sup>th</sup> Street Oakland, CA 94607  
510-287-7208  
[ebmud.com](http://ebmud.com) | [Twitter](https://twitter.com) | [Facebook](https://www.facebook.com) | [Nextdoor](https://www.nextdoor.com) | [LinkedIn](https://www.linkedin.com) | [YouTube](https://www.youtube.com)

On 6/15/2019 11:35:39 AM, Robert Roth wrote:

I'm writing to voice my opposition to EBMUD allowing Verizon to place a cell phone tower at the Berryman Reservoir, at the edge of Codornices Park. I'm concerned about potential adverse health effects, especially for neighbors. The proposed cell tower is to be 50 feet tall. This would likely place it directly in line with the residences uphill on Codornices Road. I live at 80 Codornices Road. It is well established that being at the same level as a cell transceiver presents a much greater health risk than when cell towers are overhead, and risk of adverse health effects are increased within 400 meters/1300 feet of a cell tower. All residents of Codornices Road, as well as some on Rose Walk, would be directly affected by a 50 foot tall cell tower at the reservoir.

EBMUD does not have to grant Verizon permission to place the cell tower as presently proposed, and I request that it rescind permission for the cell tower.

The permit application number is ZP2018-0236, and a hearing is scheduled for June 27, 2019.

Regards,

Robert Roth  
(510) 409-1183

---

**Subject:** FW: Please reject Verizon's application to put a 50 foot tall 4G cell tower with 7 antennas

**From:** margots999@aol.com [mailto:margots999@aol.com]

**Sent:** Thursday, June 20, 2019 3:15 PM

**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>; Nawfal, Loyal <LNawfal@cityofberkeley.info>; PWWorks <PWWorks@cityofberkeley.info>; All Council <council@cityofberkeley.info>; City Clerk <clerk@cityofberkeley.info>

**Subject:** Please reject Verizon's application to put a 50 foot tall 4G cell tower with 7 antennas

**Dear members of the ZAB and Public Works:**

At the Zoning Adjustment Board meeting on Thursday June 27, please reject Verizon's application to put a 50 foot tall 4G cell tower with 7 antennas at Berryman Reservoir overlooking a park, a baseball diamond, and residences. It would be horribly ugly and, if people would even go there anymore, would tremendously decrease enjoyment of the reservoir, Cordonices park, and the nearby Rose Garden.

Also reject a Mobilitie application for "small" cell wireless equipment (aka 5G, 5th Generation) in front of a home at 1908 Cedar, across the street from a senior residence and near the preschool at BFUU.

Margot Smith  
510-486-8010  
[margots999@aol.com](mailto:margots999@aol.com)



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**Subject:** FW: 0 Euclid link application materials

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**From:** Bob B. BUCHANAN [mailto:view@berkeley.edu]  
**Sent:** Wednesday, June 19, 2019 5:32 PM  
**To:** Nawfal, Layal <LNawfal@cityofberkeley.info>  
**Subject:** Re: 0 Euclid link application materials

Dear Layal,

I appreciated our discussion this afternoon of the changes proposed for the 0 Euclid - Berryman Reservoir area. The changes seem to be well thought through. However, not being an engineer, it's difficult for me to visualize the height and other structural details of the proposed monopole. It would be helpful to place a story pole designating the height and location of the proposed monopole. It would also be helpful to have a drawing showing structural details. Thanks again for your help.

Sincerely,  
Bob Buchanan

On Jun 19, 2019, at 1:05 PM, Nawfal, Layal <[LNawfal@cityofberkeley.info](mailto:LNawfal@cityofberkeley.info)> wrote:

Hello,  
To make it easier for everyone, we have uploaded all application materials on a website for the project, please see the following link:  
[https://www.cityofberkeley.info/Planning\\_and\\_Development/Zoning\\_Adjustment\\_Board/0\\_Euclid\\_Avenue.aspx](https://www.cityofberkeley.info/Planning_and_Development/Zoning_Adjustment_Board/0_Euclid_Avenue.aspx)  
Once the Staff Report is published (by end of the week) it will also be uploaded with all attachments on this site.

Thanks,  
-Layal

Layal Nawfal  
Associate Planner  
Land Use Planning Division  
City of Berkeley  
510-981-7424  
[Lnawfal@cityofberkeley.info](mailto:Lnawfal@cityofberkeley.info)

City closure schedule: [https://www.cityofberkeley.info/IT/Holiday\\_and\\_Reduced\\_Service\\_Days.aspx](https://www.cityofberkeley.info/IT/Holiday_and_Reduced_Service_Days.aspx)

---

**Subject:** FW: pls send to Zoning

-----Original Message-----

From: Doug Minkler [mailto:dminkler@dminkler.com]

Sent: Thursday, June 20, 2019 9:35 AM

To: Nawfal, Layal <LNawfal@cityofberkeley.info>

Subject: pls send to Zoning

Zoning Adjustments Board,

PLs reject Verizon's application to put a 50 foot 4G cell tower with 7 antennas at Berryman Reservoir overlooking Cordonices Park where many children play, a baseball diamond, and residences.

Doug Minkler

---

**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: No Cell Tower at Cordinices

**From:** Elana Auerbach [mailto:elanarobyn@gmail.com]

**Sent:** Friday, June 21, 2019 9:08 AM

**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>; Nawfal, Layal <LNawfal@cityofberkeley.info>; PWWorks <PWWorks@cityofberkeley.info>

**Subject:** No Cell Tower at Cordinices

Dear Zoning Board~

I am extremely opposed to Verizon putting up a 50 foot 4G cell tower with 7 antennas at Berryman Reservoir overlooking Cordinices Park where many children play and nearby many residences.

Thank you for your attention to this matter.

Elana Auerbach

1636 Bonita Ave, Berkeley, CA 94709

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: REJECT VERIZON'S APPLICATION FOR 50 FT. CELL TOWER

**From:** Cynthia Rahav [mailto:cylera@gmail.com]  
**Sent:** Thursday, June 20, 2019 2:47 PM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** REJECT VERIZON'S APPLICATION FOR 50 FT. CELL TOWER

Dear Adjustments Board Members,

I strongly urge you to reject Verizon's Application for a 50 ft. cell tower with 7 antennas at the Berryman Reservoir exposing children and adults to 24/7 radiation.

We are counting on you, dear Board Members, to protect us against rapacious corporations who are willing to sacrifice lives for profit. There are over a thousand INDEPENDENT research studies that show that microwaves cause DNA breaks, Cancer and other auto-immune diseases. Inform yourselves why the U.S. Dept. of Toxicology found in 2018 that cell phone radiation is a carcinogen, why professors Martin Pall, Biochemistry, and Basic Science Medicine, Washington State Univ. and our own Dr. Joel Moskowitz at UC School of Public Health have written papers, books, and movies on this technology's great harm to people, insects, and other animals. Find out why Americans for Responsible Technology, Physicians for Safe Technology and Scientists for Safe Technology are sounding the alarm.

Cable and Fiber Optics are safe, faster, less hard to hack, smaller carbon footprint, less flammable (no diesel back-up), etc. They are SafeG.

21 California cities already have ordinances limiting this dangerous technology. We are hoping that Berkeley will soon join them.

Please Protect Our Children and Ourselves!

Sincerely,  
Cynthia Rahav

<https://www.americansforresponsibletech.org/>

<https://mdsafetech.org/>

<https://scientists4wiredtech.com/>

<https://ehtrust.org/cell-phone-radiation-lecture-by-joel-moskowitz-ph-d-university-of-california-berkeley/>

---

**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Please reject Verizon's application to put a 50 foot tall 4G cell tower with 7 antennas

**From:** margots999@aol.com [mailto:margots999@aol.com]

**Sent:** Thursday, June 20, 2019 3:15 PM

**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>; Nawfal, Loyal <LNawfal@cityofberkeley.info>; PWWorks <PWWorks@cityofberkeley.info>; All Council <council@cityofberkeley.info>; City Clerk <clerk@cityofberkeley.info>

**Subject:** Please reject Verizon's application to put a 50 foot tall 4G cell tower with 7 antennas

**Dear members of the ZAB and Public Works:**

At the Zoning Adjustment Board meeting on Thursday June 27, please reject Verizon's application to put a 50 foot tall 4G cell tower with 7 antennas at Berryman Reservoir overlooking a park, a baseball diamond, and residences. It would be horribly ugly and, if people would even go there anymore, would tremendously decrease enjoyment of the reservoir, Cordonices park, and the nearby Rose Garden.

Also reject a Mobilite application for "small" cell wireless equipment (aka 5G, 5th Generation) in front of a home at 1908 Cedar, across the street from a senior residence and near the preschool at BFUU.

Margot Smith  
510-486-8010  
[margots999@aol.com](mailto:margots999@aol.com)

---

**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Comment on Use Permit ZP2018-0236 - Verizon wireless facility at Berryman Reservoir

**From:** Mark Berger [mailto:mnberger@comcast.net]  
**Sent:** Thursday, June 20, 2019 4:20 PM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Cc:** Wengraf, Susan <SWengraf@cityofberkeley.info>  
**Subject:** Comment on Use Permit ZP2018-0236 - Verizon wireless facility at Berryman Reservoir

I am writing to comment on Use Permit application #ZP2018-0236, Verizon Wireless' proposal to erect a 50' high monopole 4G LTE wireless antenna and associated equipment at the EBMUD Berryman reservoir site.

My comments are focused on two areas of concern - visual pollution, and noise pollution.

Visual pollution:

The proposed 50' monopole tower is shown in the application photographs from only one perspective, which does not reflect what citizens will see from their nearby houses, while walking or driving on Euclid street, or using the meadow in Codornices Park. The tower is an extremely obtrusive, incongruous presence, which belongs more at a freeway off ramp or industrial zone, rather than fouling a neighborhood park.. It reminds me of nothing so much as an oil derrick in a residential neighborhood. See image below of simulated view of monopole from home, located just south of Rose Walk. Tower scale is based on information in the application..



The proposal to camouflage the tower as a faux evergreen tree has the possibility of mitigating to some degree the visual impact, but effect of this mitigation is not illustrated with photographs from enough different perspectives to be properly evaluated. There is also the question of whether the City of Berkeley will allow an artificial tree in a park setting.

Noise pollution:

The proposal calls for the installation of a 30KW diesel generator on a 132gal fuel tank, providing enough fuel to run continuously for 48 hours at full load. The accuracy of measurements of the noise level produced by the generator has already been questioned by an engineering firm. I would further add the following considerations that were ignored:

- The measurements were taken with the generator running without load. More noise will be emitted with the generator running under the designed load.
- Nighttime measurements were not specified. This is the time when the noise would be most disruptive to nearby houses, especially since the generator may run continuously at night if there is a grid power failure.
- The acoustic effects of the generator being located in the bottom of a geographic bowl-like location, next to a sonically reflective large steel tank, were not considered. Both these features would have the effect of amplifying and focusing the noise, in ways that would have to be field tested to determine their impact.

Sincerely,

Mark Berger  
1404 Le Roy Ave.



Jacob, Melinda

---

**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Comment Regarding 0 Euclid Avenue  
**Attachments:** Friends of Berkeley Rose Garden Comments 6-19.pdf

**From:** William B. McCoy [mailto:wbmccoy@gmail.com]  
**Sent:** Thursday, June 20, 2019 5:44 PM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Cc:** Ralph Benson <benson@rosewalk.net>; Kit Leland <catherine@buttrickprojects.com>; Kevin Powell <kmichael.powell@gmail.com>; Susan Becher <sbecher@susanbecherpr.com>; Susan Wengraf <swengraf@comcast.net>; McWhorter, Laurie <LMcWhorter@cityofberkeley.info>; Lars Skjerpig <lars@citydev.us>; Charlie Bowen <charlie\_paths@comcast.net>  
**Subject:** Comment Regarding 0 Euclid Avenue

Dear Board Secretary,

Please find attached, as a pdf, a comment from the Friends of the Berkeley Rose Garden regarding application Use Permit #ZP2018-0236. We hope that this comment will be included with the other comments on this project.

Thank you.

--

Sandy McCoy  
[wbmccoy@gmail.com](mailto:wbmccoy@gmail.com)

510.848.1991 home office  
510.414.1789 cell





June 20, 2109

Zoning Adjustment Board Secretary  
City of Berkeley

Dear Zoning Adjustment Board,

The Friends of the Berkeley Rose Garden, a Partners for Parks group, would like to express its opposition to the cell tower proposed by Verizon on EBMUD land at the Berryman Reservoir, Use Permit #ZP2018-0236.

At 50 feet tall, the project is out of scale with the neighborhood. However well disguised, it will be experienced as a large piece of industrial equipment intruding into one of Berkeley's most beloved and popular parks.

It will defeat the "Arts and Crafts" aesthetic which EBMUD went to great lengths to incorporate into the relatively well-hidden Berryman Reservoir.

The tower may be visible from the Rose Garden. In addition, it will affect the feel of the Codornices Park, which is adjacent to the Rose Garden and for many a part of the Rose Garden experience.

Thank you for considering these comments.

William McCoy

[wbmccoy@gmail.com](mailto:wbmccoy@gmail.com)

On behalf of the Friends of the Berkeley Rose Garden

1442 Walnut St # A, Berkeley, CA 94709

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: verizon cell phone tower.

-----Original Message-----

From: Kent Baldwin [mailto:KentBaldwin@yahoo.com]

Sent: Wednesday, June 19, 2019 8:13 PM

To: Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>

Subject: verizon cell phone tower.

Hi,

I live on Euclid very close to the park and the reservoir. From what I am being told the cell phone tower will be a complete eye sore and possibly bring down property values for the area.

I think the neighborhood needs more information about the tower such as sight lines, placement, etc.

Please help.

Thanks,

Kent Baldwin

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: 0 Euclid Avenue-Berryman Reservoir Use Permit #ZP2018-0236

**From:** Sue Reinold [mailto:smreinold@gmail.com]  
**Sent:** Wednesday, June 19, 2019 8:35 PM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Cc:** swengraf@comcast.net; Wengraf, Susan <SWengraf@cityofberkeley.info>  
**Subject:** 0 Euclid Avenue-Berryman Reservoir Use Permit #ZP2018-0236

Dear Zoning Adjustments Board,

We live at 1306 Euclid Ave., directly across the street from the proposed Verizon cell tower on EBMUD's property at Berryman Reservoir. We are sending this letter via email to protest this proposal, and strongly urge the City not to grant a permit to Verizon to construct a cell tower on the Berryman Reservoir site. There are a number of reasons why this project should not be granted a permit, which are sited below.

First, there was inadequate time to respond to this proposal. We received a card in the mail postmarked June 12, 2019, which required me to respond a mere 7 days after receipt. This is not sufficient time to allow public comment! A permit proposal this important should provide the public adequate time to have meaningful input.

After reviewing the website, which is very difficult to access, it appears that there is conflicting and inaccurate information about the location of the proposed tower. It is not at all clear that a 50 foot tower will not be visible from the Rose Garden or Codonices Park, not to mention the surrounding residential neighborhood, or those traveling up Euclid Ave and adjacent streets. The Plan views show two different locations for the tower. It notes that the tower will be inside the reservoir fence. But where exactly? The 50 foot height measurement is based from where? From the reservoir walkway, from the planted area below, from Euclid Ave.? Also the plans do not show that it will be adequately camouflaged—by shrubs? What shrubs grow to 50 ft.? In short, the plans are conflicting and do not allow a clear understanding of the location and potential visual appearance of the towers.

CEQA Status: The proposed exemption pursuant to Section 15301 of the CEQA Guidelines does NOT apply for the reasons stated below. This proposed cell tower would not have a "negligible impact" on the environment. In fact, just the opposite.

The proposed cell tower is right next to a park, playing field, and historic Rose Gardens that thousands of people and children from all around the Bay Area use year-round. It is inappropriate to have this kind of industrial construction in a residential neighborhood where children play and people live. A 50ft. Tower in a residential area is not a "minor modification," but rather a major one. The Berryman Reservoir is the wrong location for a cell tower!

This tower would be visible from the windows, porches, decks and streets of all the homes in the surrounding neighborhoods. This kind of tower is huge and hideously unsightly. The visual aesthetic damage to this beautiful and historic part of the city would be incalculable. It will not only mar views of the hills from my house and neighborhood, but views of the bay from the uphill neighbors. The quality of life that those of us in the vicinity currently enjoy would be impaired forever. In addition, and importantly, this proposed tower will have a huge negative impact on the property values of all who live in this neighborhood.

An obvious risk is that this proposed tower is on, or very near to, the Hayward fault. What would happen in a severe earthquake to this tower? How will it be anchored to its site? What studies have been done to determine that it will not topple in a big earthquake. And, if it does fall, what would be the consequences to persons and property nearby?

If there is another fire in the area and the cell tower catches fire, what is the likelihood it will collapse, or be a conduit to spreading a fire to the surrounding houses and trees (including numerous California redwoods) in the neighborhood? There are a number of instances around the country of cell tower fires where the towers have collapsed and closed roads and forced evacuations.

There are significant health considerations. Very few human studies have focused specifically on cellular phone towers and cancer risk. It is, therefore, possible that the RF waves emitted by cellular phone towers increase the risk of cancer, negatively affect DNA, and create other health problems. It is clear that the cell towers emit radiation, the exposure is full-body, non-stop day and night, and the levels are stronger and the danger greater to those living in close vicinity to a cell tower. A significant body of peer reviewed research has found harmful health-related effects from cell tower radiation.

We are urging the City of Berkeley to postpone a decision about this project until there is time for more public input, and an in-depth study of the risks it poses to the community.

ATTACHMENT 7  
ZAB 06-27-19  
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Sincerely,  
Lucinda Reinold  
Susan Reinold  
1306 Euclid Ave.  
Berkeley, CA 94708  
(209)202-9812  
Email: [lucindareinold@yahoo.com](mailto:lucindareinold@yahoo.com)

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**From:** Gay Pelletier <gaympelletier@gmail.com>  
**Sent:** Wednesday, June 19, 2019 9:23 PM  
**To:** Zoning Adjustments Board (ZAB)  
**Cc:** Elisabeth Ross; Nick Paszty; Gay Pelletier; Jeffrey Hunt; Jeff Hunt; Wendy Stock; ptravni@gmail.com; Katherine KH; Ian Taylor; Imogen Ross; sandymccoy@mindspring.com; natashabeery@earthlink.net; Deborah Cahn; Sarah Hotmail; Paul Teicholz; Jonathan Khuner; Jillian Khuner; Li, Cynthia; Gigi B; Preston Maring; Phyllis Peacock; Deborah Craig; Kent Baldwin; Kelley Hart; Lucinda Reinold; oren leiman; Regina Myers; Allen Myers; Mark BERGER; "Anne and Andy"; Wengraf, Susan; David Hochschild  
**Subject:** cell phone tower at Codornices Park/Berryman Reservoir



Dear Zoning Adjustments Board,

We live at 1304 Bay View Place, directly across the street from the proposed Verizon cell tower on EBMUD's property at Berryman Reservoir. We are sending this letter via email to protest this proposal, and strongly urge the City not to grant a permit to Verizon to construct a cell tower on the Berryman Reservoir site. There are a number of reasons why this project should not be granted a permit, which are sited below.

We only learned about the proposal to place a 50 foot cell phone tower across the street from our house 1 week ago! The comments are due tomorrow. This does not feel like adequate notice and/or transparency. Other

neighborhoods have had meetings with Verizon, proper notice, proper drawings and explanations. What is happening here? We have many concerns about the 50 foot tower that will be placed very close to our house and our neighbors.

We are concerned about the impact it will have on the beauty of Codornices Park and the surrounding area. It is one of the most beautiful parks in Berkeley and has many families and tourists visiting regularly. We insist on a proper and accurate drawing showing the view of the tower from different perspectives.

Apparently, there will be some "noise" impacts. What are the decibels? Was an environmental impact report done? There are great horned owls in the area(see photo). Will the noise affect them and or many of the other birds and wildlife in the area?

What about the health concerns? Have they been addressed? Very few human studies have focused specifically on cellular phone towers and cancer risk. It is, therefore, possible that the RF waves emitted by cellular phone towers increase the risk of cancer, negatively affect DNA, and create other health problems. It is clear that the cell towers emit radiation, the exposure is full-body, non-stop day and night, and the levels are stronger and the danger greater to those living in close vicinity to a cell tower. A significant body of peer reviewed research has found harmful health-related effects from cell tower radiation.

**We are urging the City of Berkeley to postpone a decision about this project until there is time for more public input, and an in-depth study of the risks it poses to the community.**

Sincerely,

Gay Pelletier and Nick Paszty (1304 Bay View Place)

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: opposition to the cell phone tower near Codornices Park

**From:** David Hochschild [mailto:davidhochschild@gmail.com]  
**Sent:** Wednesday, June 19, 2019 9:35 PM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Cc:** Susan Wengraf <swengraf@comcast.net>  
**Subject:** opposition to the cell phone tower near Codornices Park

Dear City of Berkeley

My family and I live at 1328 Bay View place in Berkeley, quite close to the proposed cell phone tower.

There is a great deal of concern about this proposed tower in the neighborhood and its impact on property values and the viewshed adjacent to the historic Rose Garden and Codornices Park, one of the great treasures of Berkeley.

Honestly, having lived here for nearly 10 years, I don't find cell phone coverage to be a problem in this neighborhood and am not sure what problem this tower is trying to solve in the first place. But I am quite certain that a 50 foot tower adjacent to this historic and much loved park and walking path at the reservoir would dramatically change the character of the neighborhood and therefore I would like to respectfully register my opposition.

In addition, I am concerned that there was insufficient public notice about this project. We received no notification other than a posting on the telephone pole just a few days ago telling us comments were due no later than tomorrow. Anyone who happens to be traveling out of town this week would have missed this notice and the opportunity to comment entirely.

I hope your committee considers the negative impact of this infrastructure on property values and the park and that this project is canceled. Thanks for your attention to this matter

sincerely,

David Hochschild

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Verizon tower

-----Original Message-----

From: Ben Ringler [mailto:ben.s.ringler@gmail.com]  
Sent: Wednesday, June 19, 2019 9:49 PM  
To: Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
Subject: Verizon tower

Hello,

My name is Ben Ringler and I live near Codornices Park. I am alarmed and dismayed that this tower is being built, especially without much time for research or public say. I sincerely hope that the city gives this a more thoughtful and slower approach!

Please do reconsider and give this more time!

Ben Ringler

Sent by my iPhone.

Ben Ringler, LMFT  
(510) 848-8899  
www.BenRingler.com



Kelley Hart & Justin Lombardelli  
1350 Scenic Avenue  
Berkeley, CA 94708

Zoning Adjustments Board  
Land Use Planning Division  
1947 Center Street  
Berkeley, CA 94704  
RE: Proposed Cell Tower at 0 Euclid Avenue

Dear Members of the Board,

This letter is written regarding the 50-foot cell phone tower proposed at Berryman Reservoir adjacent to Cordonices Park. As concerned neighbors, we are strongly opposed to this proposal. We have a list of concerns that we feel need to be addressed specifically and thoroughly before placing a cell phone tower in our residential neighborhood. We request sufficient answers to our questions and concerns listed below.

#### **1. Were Alternative Sites Considered?**

We live in an entirely residential area. Regardless of cell tower safety, public perception of cell antennas is largely negative. Additionally, we're very concerned about our property values decreasing with this installation (Please see, for example: [http://www.nytimes.com/2010/08/29/realestate/29Lizo.html?\\_r=1](http://www.nytimes.com/2010/08/29/realestate/29Lizo.html?_r=1)).

We'd like to know from the installing company:

What alternative sites were looked at and why were they rejected?

What are the addresses of the alternative sites?

Were more commercial areas looked at for an installation?

Were requests submitted to piggyback on those existing permits? (Example: Rose and Shattuck)

Essentially, we'd like extensive proof that there are no other feasible locations that won't as negatively affect real estate values.

We'd also like to know from the city:

What will the estimated impact of a cell antenna be on real estate values?

Is the City prepared to compensate homeowners for those potential losses?

The Americans with Disabilities Act says that you must protect people with EMF sensitivities. See Title 2.

How do you plan to protect people with EMF sensitivities who live in our neighborhood? What is the grievance process for those with sensitivities?

#### **2. Aesthetic, Residential Impact, Safety and Impact on Environment**

Due to the location, we're extremely concerned about the negative aesthetic and visual aesthetic of a cell antenna installation in a neighborhood that has no commercial presence. We're opposed to how a

50 foot tall fake pine tree will look from the park, from Euclid Avenue, from Bay View Place, and from the streets/homes above the reservoir and park.

From the installing company, we'd like to request to see a fully detailed report on the effect of neighboring homes and buildings. We'd also like to request an arborist's report to determine if the installation has any effect on the trees or environment in the area.

In regard to neighborhood disruption, we'd like to point out that residents in close proximity will be subject to unnecessary interruption and noise due to repairs or outages of the antenna at any hours of the day and night. This is also something that may not be as disturbing if the installation was in a commercial area.

Finally, we'd like to know who is in charge of the seismic safety of the installation and it will not only meet and exceed all regulations, but also be upgraded and maintained as necessary.

### **3. Confirmation of Proper Notification Practices**

We'd like confirmation that all people within the required radius were notified properly. We're unsure the company has followed the correct protocol and — if not — we're highly concerned that they will continue to cut corners that will in time affect all of us in the neighborhood.

### **4. Consulting Party**

Because of this last concern, we would like to request that all of the neighbors within a 1,000 foot radius of the proposed tower be consulting parties to this application and have complete transparency from the installing company before the installation is approved. We feel our neighborhood is not the place for this type of installation.

Additional questions we have of the installing company:

How many are of the company's antennas are in Berkeley now?

How many more do they anticipate before coverage of Berkeley is complete? Will there be any more in this neighborhood?

Can they provide a map of Berkeley with all the installations for our company on it so far, all pending with applications in or due in the next 3 months and all planned installations including antennas, towers, utility pole antennas, relay stations and other related equipment?

How many towers will be needed for this area, how many towers will be within a 1 mile range of this tower?

How far apart do these antennas need to be to get complete coverage of the city?

Sincerely,

Justin Lombardelli & Kelley Hart

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: In opposition to the proposed cell phone tower at the top of Bay View Place, Permit # ZP2018-0236  
**Attachments:** Cell Phone Tower 6-2019.doc

**From:** Wendy Stock [mailto:wendystock@aol.com]  
**Sent:** Wednesday, June 19, 2019 11:48 PM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** In opposition to the proposed cell phone tower at the top of Bay View Place, Permit # ZP2018-0236

(A Word document of this email is attached)

**Wendy Stock, Ph.D.**

**1306 Bay View Place**

**Berkeley, CA 94708-1802**

**(510) 388-9154**

**Email:** [wendystock@aol.com](mailto:wendystock@aol.com)

*Clinical Psychologist \* CA Lic.No. PSY 13947 \* NPI# 1649567538*

<http://therapists.psychologytoday.com/rms/87508>

June 19, 2019

To: Zoning Adjustments Board:

Re: Permit #: ZP2018-0236

I live at 1306 Bay View Pl., across the street from the proposed Verizon cell tower on EBMUD's property at Berryman Reservoir. I am sending this letter via email to protest this proposal, and strongly urge the City not to grant a permit to Verizon to construct a cell tower on the Berryman Reservoir site. There are a number of reasons why this project should not be granted a permit, which are cited below. In this letter, I have excerpted much content from the excellent letter by my neighbor, Lucinda Reinold, with whom I agree on this issue.

First, there was inadequate time to respond to this proposal. I received a card in the mail postmarked June 12, 2019, which required a response a mere 7 days after receipt. This is not adequate time to allow public comment. A permit proposal of this magnitude should provide the public adequate time to have meaningful input.

After reviewing the website, which is very difficult to access, it appears that there is conflicting and inaccurate information about the location of the proposed tower. It is unclear whether a 50 foot tower will be visible or not from the Rose Garden or from Codornices Park, not to mention the surrounding residential neighborhood, or those traveling up Euclid Ave and adjacent streets. The Plan views show two different locations for the tower. It notes that the tower will be inside the reservoir fence. The exact location of the tower is not clear, nor is it clear from where the 50 foot height measurement is determined. From the reservoir walkway, from the planted area below, from Euclid Ave.? Also the plans do not show that it will be adequately camouflaged - by shrubs? As one of my neighbors asked, what shrubs grow to 50 ft.? In short, the plans are conflicting and do not allow a clear understanding of the location and potential visual appearance of the towers.

CEQA Status: The proposed exemption pursuant to Section 15301 of the CEQA Guidelines does NOT apply for the reasons stated below. This proposed cell tower would not have a "negligible impact" on the environment. In fact, just the opposite.

The proposed cell tower is right next to a park, playing field, and historic Rose Gardens that thousands of people and children from all around the Bay Area use year-round. It is inappropriate to have this kind of industrial construction in a residential neighborhood where children play and people live. A 50ft. Tower in a residential area is not a "minor modification," but rather a major one. The Berryman Reservoir is the wrong location for a cell tower.

This tower would be visible from the windows, porches, decks and streets of all the homes in the surrounding neighborhoods. This kind of tower is huge and unsightly. The visual aesthetic damage to this beautiful and historic part of the city would be incalculable. It will not only mar views of the hills from my house and neighborhood, but views of the bay from the uphill neighbors. The quality of life that those of us in the vicinity currently enjoy would be impaired forever. In addition, and importantly, this proposed tower will have a huge negative impact on the property values of all who live in this neighborhood.

An obvious risk is that this proposed tower is on, or very near to, the Hayward fault. What would happen in a severe earthquake to this tower? How will it be anchored to its site? What studies have been done to determine that it will not topple in a big earthquake. And, if it does fall, what would be the consequences to persons and property nearby?

If there is another fire in the area and the cell tower catches fire, what is the likelihood it will collapse, or be a conduit to spreading a fire to the surrounding houses and trees (including numerous California redwoods) in the neighborhood? There are a number of instances around the country of cell tower fires where the towers have collapsed and closed roads and forced evacuations.

There are significant health considerations. Very few human studies have focused specifically on cellular phone towers and cancer risk. It is, therefore, possible that the RF waves emitted by cellular phone towers increase the risk of cancer, negatively affect DNA, and create other health problems. It is clear that the cell towers emit radiation, the exposure is full-body, non-stop day and night, and the levels are stronger and the danger greater to those living in close vicinity to a cell tower. A significant body of peer reviewed research has found harmful health-related effects from cell tower radiation.

I am urging the City of Berkeley to postpone a decision about this project until there is time for more public input, and an in-depth study of the risks it poses to the community.

Sincerely,

Wendy Stork Ph.D.

Wendy Stock, Ph.D.

---

**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Cell tower at Codornices Reservoir

-----Original Message-----

From: Lenore Goldman [mailto:lenoregoldman1@gmail.com]  
Sent: Wednesday, June 19, 2019 11:52 PM  
To: Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
Subject: Cell tower at Codornices Reservoir

Dear ZAB Members,

I was surprised to learn a 50' cell tower is being proposed at the Codornices reservoir. I was more surprised that the public hearing was just posted a couple days ago in that neighborhood.

There are many issues on both sides that warrant attention. Our neighborhood would like the opportunity to raise questions and hear answers. A few days' notice precludes most of us from participating. Could discussion be continued into the next session so neighbors have a full 30 days to adjust their schedules and participate?

Thanks for your consideration. This is too big an issue and it's important neighbors know more and can hear answers.

Thanks much,  
Lenore Goldman  
Spring Way  
Berkeley, 94708

Sent from my iPhone

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Verizon application for 50' cell tower @ Berryman Reservoir/Cordonices Park  
**Importance:** High

**From:** Phoebe Anne Sorgen [mailto:Phoebes0@earthlink.net]  
**Sent:** Thursday, June 20, 2019 12:54 AM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Cc:** Wengraf, Susan <SWengraf@cityofberkeley.info>; Cragmont-neighbors friendly Chat <cragmont-neighbors@googlegroups.com>; Wireless Radiation Education & Defense- Berkeley group <emf-advocacy@googlegroups.com>  
**Subject:** Verizon application for 50' cell tower @ Berryman Reservoir/Cordonices Park  
**Importance:** High

To members of Berkeley's Zoning Adjustment Board:

Thank you for your service.

I urge you to reject Verizon's application to put a 4G fifty foot tall cell tower (with 7 antennas!) at Berryman Reservoir. 50 feet?! That's equivalent to a 5 story building! I've lived in the Berkeley hills since 1989 and often walk or hike around the Rose Garden, Cordonices Park, and our lovely Reservoir. Please do not allow Verizon's hideous monstrosity to ruin the Reservoir and its nearby residential neighborhood. Stand strong with and for the people against Big Telecom. Enough is enough!

Please acknowledge receipt of this message and let me know where you stand.

Sincerely,

Phoebe Sorgen  
former Berkeley Commissioner for Disaster and Fire Safety

ps I'm including Nevada County's recent denial of a telecom Conditional Use Permit in case it is helpful to you.

WHEREAS, on June 11, 2019 the Board of Supervisors held a duly noticed public hearing at which the Board upheld the appeal and denied the Conditional Use Permit, Petition for Exceptions and Mitigated Negative Declaration.

NOW, THEREFORE, BE IT RESOLVED by the Board of Supervisors of the County of Nevada that it hereby finds and determines that:

1. The facts set forth above are true and correct.

2. The telecommunication tower and equipment facility is an allowed use, subject to approval of a Use Permit, but was found to be inconsistent and incompatible with the surrounding developed residential neighborhood, in which the project site is located.
3. That this project even as conditioned and mitigated, does not meet the established purpose of Land Use and Development Code Chapter II, Section L- II 3.8 Communication Tower and Facilities to ensure compatibility with adjacent land uses.
4. That this project does not blend with the surrounding, existing, natural and man-made environment so as to be effectively unnoticeable pursuant to Land Use and Development Code Chapter II, Section L-II 3.8.E.1.b, because statements from the overwhelming public comment period stated the tower would be in a location that is not developed with other communication facilities, and would be quite noticeable and did not blend in with the surrounding existing environment.
5. That the proposed use does not meet all applicable provisions of the Land Use and Development Code, or the same practical effect of those provisions, including design and siting to meet the intent of the Site Development Standards set forth in the Zoning Ordinance, and has not mitigated the impact of the development on the surrounding residential development as proposed.
6. The site for the proposed use is not of adequate size and location to accommodate the proposed use and all facilities needed for that use and reasonable expansion thereof, if any, and to make appropriate transitions to nearby properties and permitted uses thereon.
7. That the communications tower is proposed to be located in a developed residential neighborhood made up of small rural lots with residences in close proximity to one another. The proposed tower and the impacts to the neighborhood from construction, operation and ongoing maintenance of the facility would impact the rural residential neighborhood by the introduction of the commercial facility and commercial operations into a rural residential neighborhood.
8. The proposed use and facilities are not compatible with, and are detrimental to, existing and anticipated future uses on-site, on abutting property and in the nearby surrounding neighborhood or area.
9. These findings are supported by substantial evidence in the record, as detailed in this Resolution and as discussed at the hearing. That evidence includes the judgment of the Board of Supervisors.
10. The location and custodian of the documents, which constitute the record of these proceedings, is the Nevada County Planning Department, 950 Maidu Avenue, Nevada City, California.

BE IT FURTHER RESOLVED that the Board of Supervisors hereby upholds the appeal of the Appellant and overturns the decision of the Zoning Administrator to adopt the Mitigated Negative Declaration (EIS17-0023); and approve the Conditional Use Permit (CUP17-0016) and the Petition for Exceptions to Driveway Standards (MIS18-0012), for the telecommunication tower and equipment facility, and driveway improvements at 13083 Wild Life Lane in unincorporated Nevada County, based on the findings as set forth herein.



The Clerk of the Board shall mail the Appellant a copy of this Resolution, and any appeal of this decision shall be governed by California Code of Civil Procedure section 1094.6.

---

**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Permit: ZP 2018-0236

**From:** Regina Myers [mailto:reginagmyers@gmail.com]  
**Sent:** Thursday, June 20, 2019 6:37 AM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** Permit: ZP 2018-0236

Dear Zoning,

I'm a resident at 1323 Euclid, and I'm writing this email to express opposition to the 50 ft cellphone tower being installed near our home at the Berrymen Reservoir/Cordorniches park. There are a plethora of reasons why I oppose, but one of the many reasons is that we were only given three days notice to oppose the tower. It seems that it's being pushed through in order to push it through. Please halt this project, we have great cell service and don't need it.

Sincerely,

Regina Myers  
1322 Euclid Ave.  
Berkeley, CA. 94708  
510-520-2862

---

**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: cell tower at Codornices Park

**From:** Ben Burch [mailto:benburch1950@hotmail.com]  
**Sent:** Thursday, June 20, 2019 7:37 AM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>; Nawfal, Loyal <LNawfal@cityofberkeley.info>  
**Subject:** Re: cell tower at Codornices Park

Please reject Verizon's application to put a 50 foot 4G cell tower with 7 antennas at Berryman Reservoir overlooking Cordonices Park where many children play, and where there is a baseball diamond, and also some residences. Thank you.

Ben Burch, 3112A Lewiston Ave, Berkeley 94705

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: public comment letter re: proposed cell tower at 0 Euclid - Permit #: ZP2018-0236

**From:** Justin Lombardelli [mailto:jlombardelli200@gmail.com]  
**Sent:** Thursday, June 20, 2019 8:23 AM  
**To:** Kelley Hart <kelley.hart@gmail.com>  
**Cc:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>; Wengraf, Susan <SWengraf@cityofberkeley.info>; nawfal@cityofberkeley.info  
**Subject:** Re: public comment letter re: proposed cell tower at 0 Euclid - Permit #: ZP2018-0236

And please add this commentary to the record as well.

Please confirm back with me that the board members have in fact read my letter.

Zoning Adjustments Board Land Use  
Planning Division 1947 Center Street  
Berkeley, CA 94704 RE: Proposed Cell  
Tower at 0 Euclid Avenue

Dear Members of the Board,

I am deeply alarmed by the proposal to place this cell tower within 1,000 ft of my home in Berkeley. I have a 2 1/2 year old son and would like to potentially have more children. I care deeply about my family's health, safety and well being. Please know that you are now putting all of those things in jeopardy if you erect this cell tower. It is mind boggling to me that of all places, you would propose placing this tower in a family friendly neighborhood and smack dab in the middle of a park where hundreds if not thousands of children visit every day, putting all of them at risk of harmful effects including increased cancer risk, cellular stress, increase in harmful free radicals, genetic damages, structural and functional changes of the reproductive system, learning and memory deficits, neurological disorders, and negative impacts on general well-being. We moved to Berkeley a little over two years ago because we love being in the nature and enjoying great access to beautiful parks where we can get away from the stress of everyday life and the constant bombardment of technology and wireless data and EMF radiation exposure. Putting a cell phone tower right in the middle of a heavily trafficked and beautiful park is antithetical to **what I thought** were Berkeley's core values.

Before making this decision, I strongly urge all of Members of the Board to read the scientific research and well documented literature and media regarding the dangers from EMF exposure.

Please read this study <http://www.tetrawatch.net/papers/naila.pdf> which directly **shows damage to people living within 400 meters of a cell tower**. The result of the study shows that the proportion of newly developing cancer cases was significantly higher among those patients who had lived during the past ten years at a distance of up to 400 metres from the cellular transmitter site, which has been in operation since 1993, compared to those patients living further away, and that the patients fell ill on average 8 years earlier. In the years 1999-2004, ie after five years' operation of the transmitting installation, the **relative risk of getting cancer had trebled for the residents of the area in the proximity** of the installation compared to the inhabitants of Naila outside the area.

Please read this letter <https://ehtrust.org/wp-content/uploads/Scientist-5G-appeal-2017.pdf> from over 180 scientists and doctors from 35 countries. They refer to the fact that "numerous recent scientific publications

have shown that EMF affects living organisms at levels well below most international and national guidelines". Effects include increased cancer risk, cellular stress, increase in harmful free radicals, genetic damages, structural and functional changes of the reproductive system, learning and memory deficits, neurological disorders, and negative impacts on general well-being in humans. Damage goes well beyond the human race, as there is growing evidence of harmful effects to both plants and animals. After the scientists' appeal was written in 2015 additional research has convincingly confirmed serious health risks from RF-EMF fields from wireless technology. The world's largest study (25 million US dollar) National Toxicology Program (NTP), shows statistically significant increase in the incidence of brain and heart cancer in animals exposed to EMF below the ICNIRP (International Commission on Non-Ionizing Radiation Protection) guidelines followed by most countries. These results support results in human epidemiological studies on RF radiation and brain tumour risk. A large number of peer-reviewed scientific reports demonstrate harm to human health from EMFs. And here <https://emfscientist.org/index.php/emf-scientist-appeal>

is another letter from over 230 scientists which states, "We are scientists engaged in the study of biological and health effects of non-ionizing electromagnetic fields (EMF). Based upon peer-reviewed, published research, we have serious concerns regarding the ubiquitous and increasing exposure to EMF generated by electric and wireless devices. These include—but are not limited to—radiofrequency radiation (RFR) emitting devices, such as cellular and cordless phones and their base stations, Wi-Fi, broadcast antennas, smart meters, and baby monitors as well as electric devices and infra-structures used in the delivery of electricity that generate extremely-low frequency electromagnetic field (ELF EMF)."

Here is a study <https://www.scientificamerican.com/article/major-cell-phone-radiation-study-reignites-cancer-questions/> which chronicles an unprecedented number of rodents subjected to a lifetime of electromagnetic radiation starting in utero. It presents some of the strongest evidence to date that such exposure is associated with the formation of rare cancers in at least two cell types in the brains and hearts of rats. The results, which were posted on a prepublication Web site run by Cold Spring Harbor Laboratory, are poised to reignite controversy about how such everyday exposure might affect human health. It states further, Based on these findings, Portier said that this is not just an associated finding—but that the relationship between radiation exposure and cancer is clear. "I would call it a causative study, absolutely. They controlled everything in the study. It's [the cancer] because of the exposure."

And then there is the California Firefighters Union who lobbied to get the cell phone towers removed from their fire stations. <https://ehtrust.org/firefighter-unions-opposing-cell-towers/> Firefighter groups in the United States have long opposed cell towers on their stations. Not only that, but in California they have been able to be exempt from the forced placement of towers on their stations because of the strong opposition they have- due to health concerns from the radiation. Dr. Gunnar Heuser, **lead brain studies on firefighters following a cell tower installation on their firestation and found that they were all abnormal** . His SPECT brain study on firefighters in 2004 who complained of neurological problems following a cell tower installation at their firestation 5 years ago and found that they were abnormal. The symptoms they experienced were; headaches, memory problems, sleeping problems, depression, and anxiety <https://ecfsapi.fcc.gov/file/7022117660.pdf> . Disturbingly, **the SPECT scans revealed a pattern of abnormal change which was concentrated over a wider area than would normally be seen in brains of individuals exposed to toxic inhalation**, as might be expected from fighting fires. Dr. Heuser indicated the **only plausible explanation at this time would be RF radiation exposure**. Additionally, the TOVA testing revealed among the six firefighters delayed reaction time, lack of impulse control, and difficulty in maintaining mental focus. Because of increasing complaints among firefighters with cellular antennas on their stations coupled with the California study showing damage among the six firefighters tested, a group of five individuals spread across two provinces and three states worked with Southern California firefighters to draft the resolution put before the IAFF membership last week. Lt. Ron Cronin and Acting Lt. Joe Foster were joined by Dr. Magda Havas of Trent University in Peterborough, Ontario, Vermont-based Janet Newton - president of the EMR Policy Institute, and Susan Foster Ambrose. "It is imperative to understand that in spite of the build out of an extensive wireless infrastructure in the U.S. and Canada," explained Ambrose, "we have no safety standards for cell towers. There are only regulatory standards,

not proven safety standards. The Heuser Study in California calls into question whether or not we are sacrificing the health and well being of our countries' first responders for the convenience of a technology we've come to rely upon."

**It is incumbent upon you**, the people in charge of making a determination like this, to protect your neighbors and fellow citizens from harm. And especially the **children who are most at risk**.

You need to treat this decision with respect and gravity.

In conclusion, I urge you all to watch this video <https://sacramento.cbslocal.com/2019/03/12/school-cell-tower-causing-cancer/> documenting 4 elementary school kids with cancers in Ripon....kidney cancer, brain cancer....cell tower on the school. 200 kids refused to go to school in protest. "I wouldn't send my kids there at all, it absolutely is dangerous," said Eric Windheim, an electromagnetic radiation specialist. "Children are still developing and their cells are still being divided. It's the worst possible time in their life to be exposed."

**Please** prevent our neighborhood from becoming the next Ripon elementary school.

Sincerely,  
Justin Lombardelli

On Wed, Jun 19, 2019 at 10:38 PM Kelley Hart <[kelly.hart@gmail.com](mailto:kelly.hart@gmail.com)> wrote:

Please see attached and enter this into the record.

-Kelley

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**From:** Zoning Adjustments Board (ZAB)  
**To:** Jo Ann Driscoll; Zoning Adjustments Board (ZAB)  
**Cc:** Wengraf, Susan  
**Subject:** RE: Against Cell Tower Permit #: ZP2018-0236 at Cordoneces

**From:** Jo Ann Driscoll [mailto:joannd@pacbell.net]  
**Sent:** Thursday, June 20, 2019 8:26 AM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Cc:** Wengraf, Susan <SWengraf@cityofberkeley.info>  
**Subject:** Against Cell Tower Permit #: ZP2018-0236 at Cordoneces

Hello – I live at 1400 Euclid Avenue.

I understand you are looking for public comment on Permit ZP2018-0236.

I am totally against this cell tower in my residential neighborhood. I believe cell towers should be in industrial or non-populated areas.

There have been studies on the dangers of this kind of cell tower radiation on humans. I have followed the studies in Europe where the population has raised significant concerns about corrupted data by communication companies and cancer clusters in humans and genetic damage in children.

Please don't put this tower at Cordoneces Park/Berryman Reservoir residential neighborhood. Thank you.

Jo Ann Driscoll

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Use Permit #ZP2018-0236

**From:** Robert Roth [mailto:rothappeal@gmail.com]  
**Sent:** Thursday, June 20, 2019 8:35 AM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Cc:** susan wengraf <swengraf@yahoo.com>; Susan Roth <1ArtfulGirl@gmail.com>  
**Subject:** Use Permit #ZP2018-0236

TO WHOM IT MAY CONCERN:

On June 15, 2019, I submitted written comments regarding Use Permit #ZP2018-0236, a proposed Verizon cell phone tower to be placed on the north end of the Berryman Reservoir near Codornices Park. Since that time, I looked on the Zoning Application website, and was surprised to see that there were many, many more documents on the website since the time I received the Notice of Public Hearing. It seems highly improper that documents would be added to the publicly available file after the time the hearing was noticed and interested persons were invited to view the file.

In any event, I have the following additional comments.

Among the additional documents added to the website file are two entitled: 2019-03-12 Resub Photosims and 2019-05-24 RF Peer Review Memo. From the depictions in the photo simulations, it appears that the proposed cell tower will be quite ugly, especially the proposals involving "screening," and is in close proximity to a path that many persons use to enter the woods at Codornices Park. The proposed site is very close to where children play in Codornices Park. The photo simulations do not attempt to show what the cell tower will look like from the perspective of persons viewing it from the closest point on the pathway, from Codornices Park, from the homes looking down on it on Codornices Road, from Euclid Avenue, or from the Berkeley Rose Garden.

The 6-12-19 resubmitted noise study seems to say that the cell tower would generate 62 - 67.5 dBA of noise. This falls somewhere in the range of conversational speech/air conditioner to shower/dishwasher : <https://www.noisehelp.com/noise-level-chart.html>. This would appear to violate Berkeley Ordinance 7,122, which says that "Maximum sound levels for repetitively scheduled and relatively long term operation (period of 10 days or more) of stationary equipment" on commercial property is 60 dBA on weekends and holidays. (See Table 13.40-3 accompanying the ordinance.) (The ordinance sets 70 dBAs as the limit on a commercial site between 7 a.m. and 7 p.m. on weekdays, but doesn't say what the standard is on weekday evenings and early mornings.) From the Photosims, the placement of the cell tower will be right next to the paved path on the north end of the reservoir, and clearly will be very audible to persons walking into the park. This would be quite disturbing to the public, who come to the park to enjoy the tranquility.

I also want to know why no CEQA environmental impact statement has been prepared. The cell tower is being placed in close proximity to the Berkeley Rose Garden, Codornices Park, and numerous buildings of architectural significance. These should be considered historically significant resources triggering CEQA review, pursuant to 14 CCR § 15064.5(a)(3). I don't see any CEQA exemption that would apply to this project.

As mentioned in my prior comment, I used Verizon as my cell provider until this controversy arose, and had no difficulty with telephone reception. Personally, I am appalled that EBMUD would prioritize receiving lease payments from Verizon above the quality of the neighborhood, inviting a noise-generating eyesore to the



reservoir site, after creating years of construction noise in the neighborhood during its reservoir rebuild and then patting itself on the back for it's landscaping that will be the location of the cell tower. This could well adversely affect resale values in the neighborhood, which in many cases represent residents most important financial resource.

I request that the Board deny the permit application.

Sincerely,

Robert Roth

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Reject celltower application at Berryman Reservoir

-----Original Message-----

From: Soula Culver [mailto:soculver@gmail.com]

Sent: Thursday, June 20, 2019 8:53 AM

To: Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>; Nawfal, Layal <LNawfal@cityofberkeley.info>

Subject: Reject celltower application at Berryman Reservoir

Dear Zoning Adjustments Board

You must -- please -- reject Verizon's application to put a 50 foot 4G cell tower with 7 antennas at Berryman Reservoir.

this would be a horrible development, to have this dangerous and ugly source of radiation overlooking a park where many children play, a baseball diamond, and nearby residences. This is all about profit and a worse-than-foolish idea.

--Soula Culver

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Sent from my hardwired computer with all wireless functions turned OFF

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: 50 foot cell tower at Cordonices

**From:** Francois Jeanneau [mailto:frjeanneau@gmail.com]  
**Sent:** Thursday, June 20, 2019 8:53 AM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** 50 foot cell tower at Cordonices

Hello,

I live near Cordonices park.

Can you please provide some information about the potential health hazards that such a tower can create. This project should not be approved without proper evaluation.

Best regards

Francois Jeanneau

1403 Scenic Ave, Berkeley, CA 94708

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Verizon application for 50' cell tower @ Berryman Reservoir/Cordonices Park

**From:** laverda allen [mailto:loa4990@gmail.com]  
**Sent:** Thursday, June 20, 2019 9:18 AM  
**To:** cragmont-neighbors@googlegroups.com  
**Cc:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>; Wengraf, Susan <SWengraf@cityofberkeley.info>; Wireless Radiation Education & Defense- Berkeley group <emf-advocacy@googlegroups.com>  
**Subject:** Re: Verizon application for 50' cell tower @ Berryman Reservoir/Cordonices Park

I still have some energy. Let me know how I  
Can help in this fight.

Sent from my iPhone

On Jun 20, 2019, at 12:53 AM, Phoebe Anne Sorgen <[Phoebes0@earthlink.net](mailto:Phoebes0@earthlink.net)> wrote:

To members of Berkeley's Zoning Adjustment Board:

Thank you for your service.

I urge you to reject Verizon's application to put a 4G fifty foot tall cell tower (with 7 antennas!) at Berryman Reservoir. 50 feet?! That's equivalent to a 5 story building! I've lived in the Berkeley hills since 1989 and often walk or hike around the Rose Garden, Cordonices Park, and our lovely Reservoir. Please do not allow Verizon's hideous monstrosity to ruin the Reservoir and its nearby residential neighborhood. Stand strong with and for the people against Big Telecom. Enough is enough!

Please acknowledge receipt of this message and let me know where you stand.

Sincerely,

Phoebe Sorgen  
former Berkeley Commissioner for Disaster and Fire Safety

ps I'm including Nevada County's recent denial of a telecom Conditional Use Permit in case it is helpful to you.

WHEREAS, on June 11, 2019 the Board of Supervisors held a duly noticed public hearing at which the Board upheld the appeal and denied the Conditional Use Permit, Petition for Exceptions and Mitigated Negative Declaration.

NOW, THEREFORE, BE IT RESOLVED by the Board of Supervisors of the County of Nevada that it hereby finds and determines that:

1. The facts set forth above are true and correct.
2. The telecommunication tower and equipment facility is an allowed use, subject to approval of a Use Permit, but was found to be inconsistent and incompatible with the surrounding developed residential neighborhood, in which the project site is located.
3. That this project even as conditioned and mitigated, does not meet the established purpose of Land Use and Development Code Chapter II, Section L- II 3.8 Communication Tower and Facilities to ensure compatibility with adjacent land uses.
4. That this project does not blend with the surrounding, existing, natural and man-made environment so as to be effectively unnoticeable pursuant to Land Use and Development Code Chapter II, Section L-II 3.8.E.1.b, because statements from the overwhelming public comment period stated the tower would be in a location that is not developed with other communication facilities, and would be quite noticeable and did not blend in with the surrounding existing environment.
5. That the proposed use does not meet all applicable provisions of the Land Use and Development Code, or the same practical effect of those provisions, including design and siting to meet the intent of the Site Development Standards set forth in the Zoning Ordinance, and has not mitigated the impact of the development on the surrounding residential development as proposed.
6. The site for the proposed use is not of adequate size and location to accommodate the proposed use and all facilities needed for that use and reasonable expansion thereof, if any, and to make appropriate transitions to nearby properties and permitted uses thereon.
7. That the communications tower is proposed to be located in a developed residential neighborhood made up of small rural lots with residences in close proximity to one another. The proposed tower and the impacts to the neighborhood from construction, operation and ongoing maintenance of the facility would impact the rural residential neighborhood by the introduction of the commercial facility and commercial operations into a rural residential neighborhood.
8. The proposed use and facilities are not compatible with, and are detrimental to, existing and anticipated future uses on-site, on abutting property and in the nearby surrounding neighborhood or area.
9. These findings are supported by substantial evidence in the record, as detailed in this Resolution and as discussed at the hearing. That evidence includes the judgment of the Board of Supervisors.

10. The location and custodian of the documents, which constitute the record of these proceedings, is the Nevada County Planning Department, 950 Maidu Avenue, Nevada City, California.

BE IT FURTHER RESOLVED that the Board of Supervisors hereby upholds the appeal of the Appellant and overturns the decision of the Zoning Administrator to adopt the Mitigated Negative Declaration (EIS17-0023); and approve the Conditional Use Permit (CUP17-0016) and the Petition for Exceptions to Driveway Standards (MIS18-0012), for the telecommunication tower and equipment facility, and driveway improvements at 13083 Wild Life Lane in unincorporated Nevada County, based on the findings as set forth herein.

The Clerk of the Board shall mail the Appellant a copy of this Resolution, and any appeal of this decision shall be governed by California Code of Civil Procedure section 1094.6.

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You received this message because you are subscribed to the Google Groups "Cragmont Neighbors" group.

To unsubscribe from this group and stop receiving emails from it, send an email to [cragmont-neighbors+unsubscribe@googlegroups.com](mailto:cragmont-neighbors+unsubscribe@googlegroups.com).

To view this discussion on the web visit <https://groups.google.com/d/msgid/cragmont-neighbors/7B62325A-586F-4E4D-861F-E82CDC202072%40earthlink.net>.

For more options, visit <https://groups.google.com/d/optout>.

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW:

**From:** MM Glaser [mailto:mmglaser@gmail.com]

**Sent:** Thursday, June 20, 2019 9:33 AM

**To:** Nawfal, Layal <LNawfal@cityofberkeley.info>; Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>

**Subject:**

As you may know, over 240 scientists in the EMF field have called for a change to biologically-based, rather than "thermal theory"-based EMF exposure guidelines---for a reason. They are heavily suspected of being carcinogenic, and are already linked to cell damage and neurological impacts. Why would you put a multi-antenna structure overlooking Berryman Reservoir and parks where children are at play? Sure it's part of a big wireless bandwagon, backed by a heavily financed PR campaign, but nature doesn't care. If it interrupts her normal processes, she's going to twist and turn and make some lives miserable, maybe even unlivable. You wouldn't spray a chemical with such a research profile all over your parks and community because the guys making the bucks say "there's nothing definite that indicates it's harmful", especially when the people who are not paid by them and study the stuff say, "there are too many indications that it is harmful." Stand up for science, not for a well-insulated disinformation campaign. Stop this bandwagon in its tracks. Don't allow the antenna array at Berryman Reservoir. Do the right thing.

M. Meade Glaser

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Verizon's application

**From:** Bernard Marszalek [mailto:ztangi@lmi.net]  
**Sent:** Thursday, June 20, 2019 10:37 AM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** Verizon's application

Greetings,

Please reject Verizon's application to put a 50 foot 4G cell tower with 7 antennas at Berryman Reservoir overlooking Cordonices Park where many children play.

Health issues regarding children and embryos need to be given serious attention. The precautionary principle must be maintained in all cases and not be ignored to favor business interests.

-b.

--

Bernard Marszalek • 510-693-5760 • Berkeley, CA 94703



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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: cell tower

**From:** theresa roach melia [mailto:kcwmn1@gmail.com]  
**Sent:** Thursday, June 20, 2019 10:47 AM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** cell tower

please reject Verizon's bid to put a cell tower at Berryman Reservoir, overlooking a park where children play, a baseball diamond, and residences. We are being hurt and sickened by wireless signal. Please protect the public health. I thank you. Theresa

---

**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Send 2 quick emails to help reduce emf radiation please. 6/28 forum Sports Basement 7pm 5G FREE

**From:** Arnie Passman [mailto:pazmaux1@gmail.com]  
**Sent:** Thursday, June 20, 2019 10:49 AM  
**To:** Phoebe Anne Sorgen <phoebes0@earthlink.net>; Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>; inawfal@cityofberkeley.info  
**Subject:** Re: Send 2 quick emails to help reduce emf radiation please. 6/28 forum Sports Basement 7pm 5G FREE

On Thu, Jun 20, 2019 at 1:45 AM Phoebe Anne Sorgen <[phoebes0@earthlink.net](mailto:phoebes0@earthlink.net)> wrote:

Hello dears,

I write in hopes that you'll kindly send 2 quick emails to help us prevent more emf radiation here in Berkeley.

1. Please urge our Zoning Adjustments Board to reject Verizon's application to put a 50 foot 4G cell tower with 7 antennas at Berryman Reservoir overlooking Cordonices Park where many children play, a baseball diamond, and residences: [zab@cityofberkeley.info](mailto:zab@cityofberkeley.info), [lnawfal@cityofberkeley.info](mailto:lnawfal@cityofberkeley.info)  
Staff is recommending approval. Public comment welcome also in person at hearing 7pm Thur 6/27, 1231 Addison, Berkeley

In the same email, urge them to reject a Mobilitie application for "small" cell wireless equipment in front of a home at 1908 Cedar, across the street from a senior residence and near the preschool at BFUU.

2. Please ask our Mayor and City Council to pass a 5G urgency ordinance asap: [council@cityofberkeley.info](mailto:council@cityofberkeley.info), [clerk@cityofberkeley.info](mailto:clerk@cityofberkeley.info)  
Three close proximity so-called "small" cell wireless applications have already been approved in residential neighborhoods, one in front of an adult daycare center which scientist Lloyd Morgan said is "obscene."

Laura X's and Arnie's list is bcc'd. I was so glad to see him at the 6/9 5G forum.

Grateful for all your work and for solidarity,

Phoebe Sorgen of WiRED Wireless Radiation Education & Defense

Fri June 28, 2019 5G FREE Forum at 7pm Sports Basement in Berkeley - announcement:  
<https://www.indybay.org/newsitems/2019/06/17/18824021.php>

6/9/19 5G Bad for Bees & other Beings forum in Oakland - 73 minute video:  
[https://www.youtube.com/watch?v=2PQDU\\$PRJVY&t=207s](https://www.youtube.com/watch?v=2PQDU$PRJVY&t=207s)

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: comment on permit ZP2018-0236 - proposed cell phone tower

**From:** oren leiman [mailto:oren@myworkshed.net]  
**Sent:** Thursday, June 20, 2019 11:24 AM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** comment on permit ZP2018-0236 - proposed cell phone tower

Dear Berkeley ZAB members:

I live at 1348 Euclid Avenue, Berkeley, across the street from the location of the proposed cell phone tower. I am opposed to this project based on negative visual impact, the design does not fit in with neighborhood, scale and the drawings do not depict actual proposed height of the tower. Additionally, the noise study is not sufficient as it does not include a 24 hour, real world analysis.

Additionally, the community notice and posting has only recently (last week) been repaired. The "yellow" sign put up on a flimsy pylon months ago lasted about a week in the winter rains. Sign was not attached to ground, indicating the flimsy production and construction techniques I have witnessed with other cell tower installations.

Secondarily, the lack of information about the 50 plus foot tower is cause for concern. The DESIGN AND CONSTRUCTION seems incompatible with the scale and character of the residential neighborhood. Though the tower is located adjacent to an EBMUD water tank, the water tank sits in a bowl and is mostly hidden from view from the west side of site. The proposed location is up on a high point of the bowl, thus "towering" 50 plus feet. The "to be built" virtual drawings do not show a 50' tall tower.

I have reviewed the 3 options proposed: screened, unscreened and fake tree. REQUEST: Story poles showing a 50 foot tower should be erected as the drawings do not accurately reflect a 50 foot tall tower.

And finally, as with many approved projects, there is no accountability after the build occurs and if approved, will the proposed be compared to the actual? This post construction check should be included in the permits... including noise monitoring 24x7.

Oren Leiman  
1348 Euclid Ave.  
Berkeley, CA 94708

415-577-9050

-----  
phone: 415.577.9050  
[oren@myworkshed.net](mailto:oren@myworkshed.net)  
[www.myworkshed.net](http://www.myworkshed.net)  
CA "B" license 1039659

- progress entails risks and setbacks -

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Verizon application for 50' cell tower @ Berryman Reservoir/Cordonices Park

**From:** Alison Lingo [mailto:[alisonlingo@gmail.com](mailto:alisonlingo@gmail.com)]  
**Sent:** Thursday, June 20, 2019 11:27 AM  
**To:** [cragmont-neighbors@googlegroups.com](mailto:cragmont-neighbors@googlegroups.com)  
**Cc:** Zoning Adjustments Board (ZAB) <[Planningzab@cityofberkeley.info](mailto:Planningzab@cityofberkeley.info)>; Wengraf, Susan <[SWengraf@cityofberkeley.info](mailto:SWengraf@cityofberkeley.info)>; Wireless Radiation Education & Defense- Berkeley group <[emf-advocacy@googlegroups.com](mailto:emf-advocacy@googlegroups.com)>  
**Subject:** Re: Verizon application for 50' cell tower @ Berryman Reservoir/Cordonices Park

I agree with you, Phoebe but where then would Verizon be able to put the tower. they probably need to put it somewhere. Is this a NIMBY issue? Will it be an unsightly addition to some other Berkeley neighborhood? What are the options realistically?

Thanks!

Alison

On Jun 20, 2019, at 9:17 AM, laverda allen <[loa4990@gmail.com](mailto:loa4990@gmail.com)> wrote:

I still have some energy. Let me know how I  
Can help in this fight.

Sent from my iPhone

On Jun 20, 2019, at 12:53 AM, Phoebe Anne Sorgen <[Phoebes0@earthlink.net](mailto:Phoebes0@earthlink.net)> wrote:

To members of Berkeley's Zoning Adjustment Board:

Thank you for your service.

I urge you to reject Verizon's application to put a 4G fifty foot tall cell tower (with 7 antennas!) at Berryman Reservoir. 50 feet?! That's equivalent to a 5 story building! I've lived in the Berkeley hills since 1989 and often walk or hike around the Rose Garden, Cordonices Park, and our lovely Reservoir. Please do not allow Verizon's hideous monstrosity to ruin the Reservoir and its nearby residential neighborhood. Stand strong with and for the people against Big Telecom. Enough is enough!

Please acknowledge receipt of this message and let me know where you stand.

Sincerely,

Phoebe Sorgen  
former Berkeley Commissioner for Disaster and Fire Safety

ps I'm including Nevada County's recent denial of a telecom Conditional Use Permit in case it is helpful to you.

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3. That this project even as conditioned and mitigated, does not meet the established purpose of Land Use and Development Code Chapter II, Section L- II 3.8 Communication Tower and Facilities to ensure compatibility with adjacent land uses.
4. That this project does not blend with the surrounding, existing, natural and man-made environment so as to be effectively unnoticeable pursuant to Land Use and Development Code Chapter II, Section L-II 3.8.E.1.b, because statements from the overwhelming public comment period stated the tower would be in a location that is not developed with other communication facilities, and would be quite noticeable and did not blend in with the surrounding existing environment.
5. That the proposed use does not meet all applicable provisions of the Land Use and Development Code, or the same practical effect of those provisions, including design and siting to meet the intent of the Site Development Standards set forth in the Zoning Ordinance, and has not mitigated the impact of the development on the surrounding residential development as proposed.
6. The site for the proposed use is not of adequate size and location to accommodate the proposed use and all facilities needed for that use and reasonable expansion thereof, if any, and to make appropriate transitions to nearby properties and permitted uses thereon.

7. That the communications tower is proposed to be located in a developed residential neighborhood made up of small rural lots with residences in close proximity to one another. The proposed tower and the impacts to the neighborhood from construction, operation and ongoing maintenance of the facility would impact the rural residential neighborhood by the introduction of the commercial facility and commercial operations into a rural residential neighborhood.
8. The proposed use and facilities are not compatible with, and are detrimental to, existing and anticipated future uses on-site, on abutting property and in the nearby surrounding neighborhood or area.
9. These findings are supported by substantial evidence in the record, as detailed in this Resolution and as discussed at the hearing. That evidence includes the judgment of the Board of Supervisors.
10. The location and custodian of the documents, which constitute the record of these proceedings, is the Nevada County Planning Department, 950 Maidu Avenue, Nevada City, California.

BE IT FURTHER RESOLVED that the Board of Supervisors hereby upholds the appeal of the Appellant and overturns the decision of the Zoning Administrator to adopt the Mitigated Negative Declaration (EIS17-0023); and approve the Conditional Use Permit (CUP17-0016) and the Petition for Exceptions to Driveway Standards (MIS18-0012), for the telecommunication tower and equipment facility, and driveway improvements at 13083 Wild Life Lane in unincorporated Nevada County, based on the findings as set forth herein.

The Clerk of the Board shall mail the Appellant a copy of this Resolution, and any appeal of this decision shall be governed by California Code of Civil Procedure section 1094.6.

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For more options, visit <https://groups.google.com/d/optout>.

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: reject Verizon's application to put a cell tower at Berryman Reservoir

**From:** Galen CRANZ [mailto:galen@berkeley.edu]  
**Sent:** Thursday, June 20, 2019 12:06 PM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** reject Verizon's application to put a cell tower at Berryman Reservoir

Zoning Adjustments Board:

Please reject Verizon's application to put a 50 foot 4G cell tower with 7 antennas at Berryman Reservoir overlooking a park where many children play, a baseball diamond, and residences. Cell towers do not belong close to residences.

Thank you,  
Galen Cranz

--

Galen Cranz, PhD  
Professor of the Graduate School  
Department of Architecture  
University of California  
Berkeley, CA 94720  
(510) 658-9330

*Become an advocate for body conscious design.*

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: use permit #ZP2018-0236 (verizon cell tower at berryman reservoir)

**From:** Allen Myers [mailto:allenmyers@gmail.com]  
**Sent:** Thursday, June 20, 2019 12:48 PM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** Re: use permit #ZP2018-0236 (verizon cell tower at berryman reservoir)

and one more thing:

8) How is it possible that the city of berkeley does not require story poles for this project?

Sincerely, and still opposed,

- Allen

On Thu, Jun 20, 2019 at 12:15 PM Allen Myers <[allenmyers@gmail.com](mailto:allenmyers@gmail.com)> wrote:

Dear Zoning Adjustments Board,

My wife and I live at 1322 Euclid Ave, Berkeley, CA 94708, directly across from the Berryman Reservoir.

We are opposed to the installation of a cell tower on the EBMUD property.

Here's what I understand from what I read:

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The pole will be fully located fully within the EBMUD property about midway east-west along the north paved pathway, and about 20' from the nearest fence line. The base of the pole will be at 502' elevation, and the paved path is at about 510' elevation, so the top of the pole, if it's a monopine, will be about 41' above the paved path, if it's not a monopine, just a regular un-camouflaged pole, it's only 45' tall from its base, so it would only be 36' above the paved path. And the BTS (auxiliary building to house the electronics, air conditioning and generator) will be at 483' elevation, so about 27' below the level of the paved path.

The microwave radiation level will only be 12% of the max allowed by the FCC at the top level of the nearest residence.

The only noise will come from the BTS auxiliary building. The noise will come from the air conditioning unit, which runs 24/7, and the emergency power generator, and except during a power outage, it only runs 15 mins per week to ensure that it's ready when needed.

That building will be located at about 483' elevation at the bottom of the reservoir at the same level as the bottom

of the tank. The BTS building, according to the plans, will be located about 135' from the nearest residence on the east side, and will be about 75' from the nearest path. According to their estimates, that residence shouldn't hear more than about 48 dB of sound, which is inline with the existing ambient noise level.

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But,

1) The plans seem to show that the tops of the trees (oaks, etc) north of that path are much taller than what they seem in real life. If I'm interpreting the meaning of the numbers on those trees correctly, those elevations must be the tops of the trees, and it doesn't seem possible that those trees are 45' to 50' above the path. If they were, you'd never see the pole at all from the playing field. But my guesstimate is that the trees are more like 35' to 40' tall. If that's the case, the pole might be visible from the playing field. If it's visible, and ugly, which is pretty much going to be the case, it will affect people's enjoyment of the park.

2) The location of the pole on the plans does not match in any way the location of the pole as shown in the photo simulations. The plans show the pole being basically about midway east/west along the north path, whereas the photo simulations seem to show it being in the 'thick trees' at the far north-east corner of the plan view (pg 49 of [https://www.cityofberkeley.info/uploadedFiles/Planning\\_and\\_Development/Level\\_3\\_-\\_ZAB/2018-12-17\\_APP\\_PCKT\\_0%20Euclid.pdf](https://www.cityofberkeley.info/uploadedFiles/Planning_and_Development/Level_3_-_ZAB/2018-12-17_APP_PCKT_0%20Euclid.pdf)).

A generous view of that discrepancy would be that someone made a mistake.

3) As to the issue of noise, what we need to know is what the expected noise level will be at the nearest point on the path. The visitors to the parks here probably come for some relative tranquility, not the sound of air conditioners.

4) The location of the pole itself is a problem no matter what. If it's a regular pole, it's ugly. If it's a monopine, it's ugly & tacky, and it's going to stick out like a sore thumb since it's 100' from the nearest pine/fir/redwood. It'll look silly, like, 'hey, look at me, I'm a fake tree!' :) But if it's closer to the east side of the reservoir, the microwave radiation level will most likely be a problem for the nearest residences.

5) And no matter what, it will affect our property values, and no matter what they say is the safe level of exposure, it's a health risk for us, and we didn't sign up for that when we made our homes here.

6) CEQA exempt? No!

7) The notification process is a failure. Signs at the farthest point from most of the park activity, and not weather proof. And notifications via mail 1 week before the deadline for written responses. Not good.

No, not excited by having a cell tower there. Yes, cell service sucks up here. We're OK with that.

- Allen & Regina Myers

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Susan please forward this letter on my behalf to the ZAB

**From:** [tullyfog@aol.com](mailto:tullyfog@aol.com)  
**Date:** June 20, 2019 at 12:27:46 AM PDT  
**To:** [swengraf@ci.berkeley.ca.us](mailto:swengraf@ci.berkeley.ca.us), [swengraf@comcast.net](mailto:swengraf@comcast.net)  
**Subject:** Susan please forward this letter on my behalf to the ZAB

June 19, 2019

From: Paul M. Schwartz

To the Zoning Adjustments Board

Re: Verizon plan to install a cell phone tower and antennas at the Berryman Reservoir

As a member of the Landmarks Preservation Commission I am writing to oppose the placement of the 50ft monopole with six antennas adjacent to the Rose Walk on the EBMUD Berryman reservoir property. Even if disguised as a tree, this unesthetic industrial equipment would provide a serious visual impairment to what is currently one of the finest scenic views in Berkeley. It's placement, approximately fifty feet from one of Berkeley's most cherished landmarks, the Rose Garden, is an assault on the senses, both visual and auditory.

This area of Berkeley has one of the bay area's finest blendings of urban environment with nature. The park, Cordonices Park, and the Rose Garden, are Berkeley's treasures and a regional draw for people to feel as if they are in nature. The Rose Garden, a New Deal project, has marvelous views in all directions. To place industrial equipment in the easterly view from this historic landmark would be a travesty, an ill thought out attack on our history. Additionally, the westerly view from homes above the reservoir and the northerly view of the homes south of the reservoir would be seriously impacted by this unsightly, unnecessary blight.

This is a heavily pedestrian traveled and visited area because of its views and its beauty.

Certainly, proper planning and thinking would result in a less intrusive location, a location not adjacent to a scenic public area.

To Verizon, please reconsider this project and make an effort to be a welcome and good partner with the City of Berkeley.

To the ZAB, please reject this project as it is currently sited and planned.

Thank you for your consideration.

Paul M. Schwartz, attorney at law and member of the Landmark Preservation Commission

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**From:** Jonathan Khuner <jonathankhuner@sonic.net>  
**Sent:** Thursday, June 20, 2019 1:51 PM  
**To:** Zoning Adjustments Board (ZAB)  
**Subject:** ZP2018-0236 (hearing June 27)  
**Attachments:** ZP2018-0236 Khuner letter to ZAB 6.20.2019.pdf

*[Note: pdf copy of this letter is attached below.]*

June 20, 2019

Dear Zoning Adjustments Board,

I'm writing this email against the application by Verizon Wireless (ZP2018-0236) for permission to build a cell-phone tower at Codornices Park. I'm a homeowner and resident at 1324 Bay View Place, the street just downhill from the proposed site. Here are my objections:

1. The tower would be an eyesore for the neighborhood, especially for those using the recreational facilities

of Codornices park. The sketched-in photos Verizon submitted, which purport to show the pole blending in with trees in the park area, are deceptive. These non-stereoscopic pictures are taken from angles where the pole appears disguised in front of taller trees, but actually those trees would be from 30 to over 150 feet away from the pole, not directly behind it. Even if constructed with artificial greenery, this pole actually would not be camouflaged at all, but would stand out, and be visually obtrusive to neighbors, pedestrians, and drivers on Euclid Avenue, at the upper stretch of Bay View Place, and on Codornices Road.

2. I believe the noise from associated operating machinery will be quite noticeable and unpleasant to any persons walking on the path at the south edges of Codornices park (80 db), and perhaps also to users of the public ball-field, and to property owners on Codornices Road east of the proposed tower (50 db).

3. If RF radiation has health consequences, those would be visited on the many people who use the public ball-field area, which is directly to the north of the proposed tower, and just a few steps away from it.

4. Improved radio-wave service is not needed in this neighborhood. I have been a cell-phone subscriber in this location for 15 years, and though service is not optimal, it is adequate. Furthermore, fiber-optic service recently has been installed in this neighborhood, obviating the need for stronger airway broadcast signals.

5. The neighborhood-notification procedures preceding this June 27, 2019 ZAB meeting have been sloppy and ineffective. Posted bulletins in the neighborhood were not maintained, and disappeared during the May-June rainy spell. Important new information was posted online in considerably tardy fashion, shortly before the deadline for public response. Mailed notifications were tardy. I have heard from several neighbors that they were not made aware of Verizon's application until the last two days.

6. Verizon used misleading wording in its application, namely **“This EBMUD parcel is already used**

**for utility purposes Adding a Verizon tower to this location will allow Verizon to cover the neighborhood without changing its character.”** In fact, EBMUD's current use of the parcel for utility purposes is confined to a rather tastefully and well concealed old reservoir basin and new water-storage structure, whereas most of the area is an important public recreational park, whose character would be significantly changed if a towering array of cell-broadcasting equipment is allowed to be placed directly adjacent.

In summary, this project is an unwelcome imposition, of dubious legitimacy, of little benefit to the neighborhood, but rather an unnecessary detriment to the daily lives of my family, my neighbors, and fellow Berkeleyans who use Codornices Park. It also would have a negative effect on property values of the area.

I urge you to reject application ZP2018-0236.

Thank you for your consideration,

- Jonathan Khuner

1324 Bay View Place, Berkeley, CA 94708

[jkhuner@sonic.net](mailto:jkhuner@sonic.net)

510.593.9291



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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: application for 4G tower at Berryman Reservoir

-----Original Message-----

From: Meaveen O'Connor [mailto:meave13@earthlink.net]  
Sent: Thursday, June 20, 2019 2:26 PM  
To: Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
Subject: application for 4G tower at Berryman Reservoir

Dear Zab,

I very strongly urge you to deny the application by Verizon to construct and place a 4G cell tower near Berryman Reservoir.

It is completely unfair to place such a tower in a residential area. I come to Cordonices Park with my grandchildren to play and will no longer be able to if a tower is constructed there. It will endanger the health of anyone nearby, will be an eyesore, will affect property values and I could go on.

In the near future Verizon will attempt to change the tower over to 5G technology, an even more dangerous 5th generation short wave millimeter technology. It is completely unfair to a residential neighborhood to have to deal with this blight and danger.

Two of my friends who live in the neighborhood say they will have to move if the tower is placed in that location.

Please do not let this happen. All telecom towers need to be placed away from residential neighborhoods since they will eventually be converted to 5G which will end up causing even worse issues for our city.

Thanks,  
Meaveen O'Connor  
1717 Berkeley Way  
Berkeley, CA 94703

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**From:** Lynne K. Finley <lkfinley@comcast.net>  
**Sent:** Saturday, June 15, 2019 10:08 AM  
**To:** Zoning Adjustments Board (ZAB)  
**Cc:** Charles Taberski  
**Subject:** ZP2018-0236 Verizon Cell tower application

We are in favor of this proposed application. We see it as a safety feature that will be needed in the event of disasters, etc. Improved cell receptivity in Berkeley is important for the present and future of our community.

Thank you.

Lynne K. Finley & Charles Taberski  
1006 Wildcat Canyon Road  
Berkeley, CA 94708

Sent from my iPhone

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Opposition to Permit Application #ZP2018-0236

**From:** Robert Roth [mailto:rothappeal@gmail.com]  
**Sent:** Saturday, June 15, 2019 10:16 AM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Cc:** Tabitha Soren <tabitha@tabithasoren.com>; Ralph Joedicke <ralph.joedicke@aaccess.com>; Dorothy Marsh <ldmarsh@sbcglobal.net>; familia.de.gallo@gmail.com; Bruce Gilbert <gilbert.bruce@gmail.com>; Anne Corcus <annecorcus@gmail.com>; Susan Roth <1ArtfulGirl@gmail.com>; Wengraf, Susan <SWengraf@cityofberkeley.info>  
**Subject:** Opposition to Permit Application #ZP2018-0236

TO WHOM IT MAY CONCERN:

I am writing to provide comments in opposition to permit application #ZP2018-0236, for installation of a 50 foot high cell phone tower by Verizon Wireless at the edge of the Berryman Reservoir and Codornices Park. I have reviewed the application, which is available at [file:///Users/rothappeal/Downloads/2018-12-17\\_APP\\_PCKT\\_0%20Euclid.pdf](file:///Users/rothappeal/Downloads/2018-12-17_APP_PCKT_0%20Euclid.pdf), and I have serious concerns regarding the effect of this tower on health and safety.

First, I live at 80 Codornices Road, toward the end of the cul-de-sac in close proximity to the proposed cell tower location. As the proposed tower location would be on the level of the base of the reservoir, at the proposed height of 50 feet the transceivers will be directly at the height of the homes on Codornices Road. Most detrimental health impacts from cell tower transmissions occur by being on the same level as the transceivers, and also by being with 400 meters/1300 feet of them. Under the present proposal, all of the residents of Codornices Road, as well as many on Rose Walk, would experience such direct exposure on a continuous basis, a clear health hazard. I see nothing in the permit application designed to mitigate the exposure and risk to residents on Codornices Road and Rose Walk, and I don't think there is any effective mitigation possible if the tower is placed in the proposed location. Please see the following information:

<https://manhattanneighbors.org/cell-towers-and-antennas-have-health-and-cancer-risks-how-close-is-too-close/>

<http://hps.org/publicinformation/ate/faqs/cellphoneqa.html>

<https://www.thehealthyhomeeconomist.com/cell-tower-safety/>

<http://electromagnetichealth.org/electromagnetic-health-blog/emf-help-blog%E2%84%A2-5/>

<https://midsafetech.org/cell-tower-health-effects/>

Note that a safer location may be at the pumping station across from the reservoir on Euclid Avenue, as it is a lower location that would not be on a direct line with nearby residents, yet would still be above the level of neighbors, pedestrians, and persons using the Rose Garden and Codornices Park.

I also question the need for Verizon to build a cell tower in this location. Until recently, I used Verizon as my cell phone provider for many years. Unlike many other cell providers, I had no problem whatsoever with reception under the current cell tower configuration, despite our obscure and difficult to reach location.

Most important, a cell tower at the edge of Codornices Park and near the Rose Garden will place thousands of Berkeley residents, including thousands of children playing in the park, in close proximity to potentially adverse health effects. I know that Verizon will downplay health consequences, but there is real science showing that these are not frivolous concerns, especially for persons within 400 meters/1300 feet and in a direct line with the transceivers. These concerns may be greatest for young children, both those living on Codornices Road and those playing in the park.

For these reasons, I am requesting that the Zoning Adjustments Board deny this application. The Board may contact me with any questions.

Regards,

Robert Roth  
(510) 409-1183

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**From:** Isaac Kaplan <isaackaplan@gmail.com>  
**Sent:** Monday, June 17, 2019 11:09 AM  
**To:** Zoning Adjustments Board (ZAB)  
**Subject:** Cell Tower permit:ZP2018-0236

To Whom it may concern,

I am writing in support of the proposed Verizon cell antenna array proposed for Codornices region.

Currently fewer and fewer people have land lines, and good wireless communication is critical for emergency preparedness and community safety.

Thank you for your attention.

Isaac Kaplan  
460 Cragmont Ave.

**Nawfal, Loyal**

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**Subject:** FW: Berkeley WIFI  
**Attachments:** 7q4HijhMSH6LD6wvqBZQtA.jpeg

**From:** shekrystal@aol.com [mailto:shekrystal@aol.com]  
**Sent:** Tuesday, April 02, 2019 11:19 AM  
**To:** Nawfal, Loyal <LNawfal@cityofberkeley.info>  
**Subject:** Fwd: Berkeley WIFI

Dear Loyal,

I am writing to vigorously object to the proposed installation of a cell phone tower camouflaged by an artificial tree in the Rose Garden section of Euclid Avenue in h North Berkeley. See attached notice. This Rose Garden neighborhood is an architectural heritage district with beautiful architect designed million dollar homes mostly from the 1920s. The rose garden is a beautiful tourist and local attraction and the homes all have perfectly manicured gardens with curb appeal. To install an ugly, artificial tree concealing a cell phone post is not in character with this neighborhood and I strongly request that it not be approved.

Respectfully yours,  
Dr. Sheila Krystal  
1509 Euclid Avenue  
Berkeley, CA 94708



# PROPOSED PROJECT

## PROJECT INFORMATION

Berkeley Reservoir on  
Euclid Ave: Proposed new  
wireless facility with faux  
evergreen tree tower and  
equipment on the ground.

## APPLICANT/INTENT

Verizon Wireless  
Ridge Communications  
12919 Alcosta Blvd, Suite 1  
San Ramon, CA 94583  
(925) 498-2340

For more information check the  
Planning Department Web Page:  
[www.ci.berkeley.ca.us/planning](http://www.ci.berkeley.ca.us/planning)  
Or call 510-981-7410

Public Notices

**Nawfal, Loyal**

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**Subject:** FW: Cell phone tower

-----Original Message-----

From: Martin Aston [mailto:[astonma@icloud.com](mailto:astonma@icloud.com)]

Sent: Tuesday, April 02, 2019 11:39 AM

To: Nawfal, Loyal <[LNawfal@cityofberkeley.info](mailto:LNawfal@cityofberkeley.info)>

Subject: Re: Cell phone tower

Dear Loyal,

Please stop the construction of the hideous artificial tree covered cell phone tower in the historic Rose Garden District of Euclid Avenue in North Berkeley! The artificial trees are extremely ugly and will mar the elegant north Euclid Avenue beauty, ambiance and serenity. Please do not approve this atrocity!

Sincerely,

Martin Aston

Euclid Avenue

510 915-4339



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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Proposed Verizon Tower

**From:** mcnivenc@gtlaw.com [mailto:mcnivenc@gtlaw.com]  
**Sent:** Tuesday, June 25, 2019 11:38 AM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Cc:** ben.s.ringler@gmail.com; claudia.deering@comcast.net  
**Subject:** Proposed Verizon Tower

With this email, I wish to add my voice to those of others who have asked that there be a delay in hearing the plans for the tower near the reservoir on Euclid so that the neighbors who frequent the area (of which I am one) can have time to review the plans and voice their opinions. I understand that comments are due today, however, given the lack of timely notice, I have not had time to research the proposal sufficiently to provide an informed opinion. Further, I do not believe that the notice requirements required by the municipal code have been properly followed (7 days' notice etc.). Thank you.

**Carolyn McNiven**  
Shareholder

Greenberg Traurig, LLP  
4 Embarcadero Ctr, Ste. 3000 | San Francisco, CA 94111-5983  
T +1 415.655.1270  
[mcnivenc@gtlaw.com](mailto:mcnivenc@gtlaw.com) | [www.gtlaw.com](http://www.gtlaw.com) | [View GT Biography](#)



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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Tower Controversy

**From:** landy chapman [mailto:landychapman@yahoo.com]  
**Sent:** Tuesday, June 25, 2019 10:15 AM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** Tower Controversy

It is very disturbing to the whole neighborhood that proper notification procedure has been altered.

We in the community will in turn organize to oppose this development.

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Opposition to Permit # ZP2018-0236 by homeowner  
**Attachments:** 2019.06.24 Zoning Board.pdf; David Adams Summary of Literature.pdf; Vertex Development LLC v Manatee County.pdf

**From:** Michael Burt [mailto:mb@michaelburtlaw.com]  
**Sent:** Tuesday, June 25, 2019 9:37 AM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** Opposition to Permit # ZP2018-0236 by homeowner

Dear Board Members:

I am an attorney and I reside at 178 Tamalpais Road, Berkeley, CA, where I have owned and lived in my home since 1980. I have been informed that your Board is considering whether to approve a permit to install a cell tower on the border of Berryman Reservoir/Codornices Park. Since my home directly overlooks this area and my 15 year old son and other children play in the area of the park I write to strongly object to this proposal and to request that your Board not approve the project. Among the many reasons why this cell tower project should not be approved are the following:

1. It would be inconsistent with the character of this neighborhood, which for years has been blessed with large natural trees, a placid park where children and families congregate, and beautiful views of the bay, unobstructed by ugly cell towers or other corporate eye sores. See e.g., *Vertex Dev., LLC v. Manatee Cty.*, 761 F. Supp. 2d 1348, 1362 (M.D. Fla. 2011)(attached)("[A]esthetics may constitute a valid basis for denial of a wireless permit if substantial evidence of the visual impact of the tower was before the board."). Verizon's application claims that "[a]dding a Verizon tower to this location will allow Verizon to cover the neighborhood without changing its character." That is an absolutely false statement as this neighborhood currently has no 50 feet towers with "(6) antennas, (6) remote radio units, ground equipment including a 30 KW diesel generator on a 132 gallon tank, and other equipment, cables and conduits."
2. There is no documented showing by Verizon or anybody else that a cell tower is necessary at this location. Verizon's application merely states: "This area is primarily residential and wooded, and provides few traditional locations for cell sites." That is a compelling reason to deny the application, not to grant it.

3. According to Verizon's application, their cell tower "will enable *Verizon subscribers* to more easily make contact with the world around them..." On its face, the project is intended not to benefit the public generally, but only those who are customers of Verizon. Verizon does not and cannot claim that their project is in the general public interest.
4. Putting up a fake and ugly 50 foot tall "pine" tower with (6) antennas and (6) remote radio units in a location directly in front of my unobstructed view of the bay would greatly diminish the value of my property and in fact would constitute an unconstitutional unjust taking and inverse condemnation of my property, as well as other property in the immediate area. It would also constitute a nuisance, interference with easement to light, air, and unobstructed view, servitude on adjacent land to limit size of trees, and would violate the duty imposed by conditional use permit not to obstruct the view. See, Dr. David Adams, *Information and Documentation of Adverse Health and Property Effects from Cell Phone Towers/Antennas and Low-Frequency Electromagnetic Radiation* (copy attached).
5. Verizon's application states that "Verizon proposes to install a monopole disguised as an evergreen tree. Antennas, remote radio units, and other related cables and equipment, would be mounted on the monopole. Other equipment cabinets, including a standby generator, would be installed on the ground near the monopole. Because it would be disguised as an evergreen tree, the monopole and attached antennas would have limited visibility from the neighborhood, as it would match the general appearance of other trees located in the vicinity. *This is evident from the photosimulations submitted with this application.*" (emphasis added). In fact, the materials attached to the application do not address, much less demonstrate, that "the monopole and attached antennas would have limited visibility from the neighborhood" or that this equipment would "match the general appearance of other trees located in the vicinity."
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*Have you considered the toxic impacts of diesel exhaust?*

Diesel soot, or diesel particulate, is the number one airborne carcinogen in California, and represents our state's most significant toxic air pollution problem. California Air Resources Board estimates that operation of an uncontrolled one-megawatt diesel engine for only 250 hours per year would result in a 50 percent increase in cancer risk to residents within one city block.

*Have you considered the other air pollution impacts and long-term effects on the regulation of businesses?*

A typical standby diesel generator produces 25-30 pounds of nitrogen oxides (NOx) per megawatt hour of power generated, 50 to 60 times the NOx pollution produced per megawatt hour by the typical mix of California gas-fired power plants. Nitrogen oxides are a smog-forming pollutant. Santa Barbara County just recently met the federal smog standard by a slim margin. If additional smog-forming emissions in our region cause our air to violate that standard again, local businesses will face additional air pollution regulations.

*What about permitting?*

Backup generators should only be used when absolutely necessary. Some generator installations may require permits, including APCD permits, or land use, fire, or building entitlements, and associated inspections. Stationary diesel engines 50 hp and greater require a permit from the APCD.

Santa Barbara County Air Pollution Control District, *Do You Really Need a Diesel Generator?*, <https://www.ourair.org/do-you-really-need-a-diesel-generator/>.

In this case, a diesel generator is not "absolutely necessary". It is being proposed solely for the benefit and convenience of Verizon customers.

9. This tower would heighten the risk of a fire in Codornices Park, the spreading of which could be devastating to the entire neighborhood and subject the City of Berkeley to huge liability for negligently approving such a project in the face of known risks. As one law firm tracking this issue states, "In some cases, Cell Towers have caught fire. With a simple visit to Youtube, you can watch multiple videos of a Cell Tower burning as it collapsed to the ground. Even their foundations have the capacity to fail." See, Campenelli and Associates, *Do Cell Towers Collapse ?*, [https://anticelltowerlawyers.com/anti\\_cell\\_lawyer\\_1\\_020.htm](https://anticelltowerlawyers.com/anti_cell_lawyer_1_020.htm).

10. This tower will otherwise jeopardize safety. As the same law firm notes:

Like Smart Cars, Cell Towers are built to be economically sensible rather than being built to be as safe as possible. Moreover, the blinding pace of Cell Tower installations across the Country makes "quality control" over the manufacturing and installation processes virtually impossible.

As such, they present a very real danger of collapse, and the potential to cause harms such as property damage, and personal injury or death to anyone who might be unlucky enough to be near a 10 to 19\* story Cell Tower when it fails.

Unlike telephone poles, which consist of one solid piece of wood, Cell Towers are constructed of multiple individual components, the failure of one or more of which can cause a complete structural failure, and concomitant collapse.

Some of the most common areas and elements of failure which result in the collapse of Cell Towers are baseplates, flanges, joints, bolts and guy wires.

In some cases, Cell Towers have caught fire. With a simple visit to Youtube, you can watch multiple videos of a Cell Tower burning as it collapsed to the ground. Even their foundations have the capacity to fail.

For these reasons, it is imperative that local zoning authorities adopt and require strict compliance with setback requirements necessary to protect both local citizens and the public from the danger of collapse that Cell Towers present.

In this case, Verizon's application shows that the 50 foot cell tower would be installed immediately adjacent to a heavily used park and in the midst of a heavily wooded area. There is no setback requirement that will ensure that in the event the tower collapses it will not cause injury or death or a raging fire that could spread and also cause injury or death.

11. There is no post approval accountability for the design, operation, and maintenance of this project. Verizon's application states only that "[p]rior to obtaining a building permit to erect or install the proposed facility, Verizon Wireless will either secure a bond or provide financial assurances, in a form acceptable to the City Manager, for the removal of the facility in the event it is abandoned or the approval is otherwise terminated." It says nothing about a plan to ensure that the design of the tower meets the assurances of the application that the tower "would be disguised as an evergreen tree, [so] the monopole and attached antennas would have limited visibility from the neighborhood, as it would match the general appearance of other trees located in the vicinity." It says nothing about how the tower and its associated "[a]ntennas, remote radio units, and other related cables and equipment" would be operated and maintained so as to ensure that the risks identified above are not realized.

For all of these reasons, I strongly urge you not to approve of this project. In the end, it will not benefit the public but will endanger it. It will give rise to costly and time-consuming litigation that will consume precious resources that are better spent on more pressing problems like the education of our children and the homeless. It is opposed by the vast majority of citizens who live in the area. As one federal appellate court aptly concluded, "[t]he repeated and widespread opposition of a majority of the citizens ... who voiced their views-at the Planning Commission hearing, through petitions, through letters, and at the City Council meeting-amounts to far more than a 'mere scintilla' of evidence to persuade a reasonable mind to oppose the application." *AT & T Wireless PCS, Inc. v. City Council of City of Virginia Beach*, 155 F.3d 423, 431 (4th Cir.1998).

Michael Burt

SUPPLEMENTAL ITEM RD1 - 0 EUCLID AVE

ZAB 06-27-19

Page 7 of 67

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June 24, 2019

Berkeley Zoning Adjustment Board  
1231 Addison Street  
Berkeley, CA 94708  
Sent via email to: zab@cityofberkeley.info

*Re: Opposition to Permit # ZP2018-0236 (Berryman Reservoir/Codornices Park cell tower)*

Dear Board Members:

I am an attorney and I reside at 178 Tamalpais Road, Berkeley, CA, where I have owned and lived in my home since 1980. I have been informed that your Board is considering whether to approve a permit to install a cell tower on the border of Berryman Reservoir/Codornices Park. Since my home directly overlooks this area and my 15 year old son and other children play in the area of the park I write to strongly object to this proposal and to request that your Board not approve the project. Among the many reasons why this cell tower project should not be approved are the following:

1. It would be inconsistent with the character of this neighborhood, which for years has been blessed with large natural trees, a placid park where children and families congregate, and beautiful views of the bay, unobstructed by ugly cell towers or other corporate eye sores. See e.g., *Vertex Dev., LLC v. Manatee Cty.*, 761 F. Supp. 2d 1348, 1362 (M.D. Fla. 2011)(attached) ("[A]esthetics may constitute a valid basis for denial of a wireless permit if substantial evidence of the visual impact of the tower was before the board."). Verizon's application claims that "[a]dding a Verizon tower to this location will allow Verizon to cover the neighborhood without changing its character." That is an absolutely false statement as this neighborhood currently has no 50 foot towers with "(6) antennas, (6) remote radio units, ground equipment including a 30 KW diesel generator on a 132 gallon tank, and other equipment, cables and conduits."
2. There is no documented showing by Verizon or anybody else that a cell tower is necessary at this location. Verizon's application merely states: "This area is primarily residential and wooded, and provides few traditional locations for cell sites." That is a compelling reason to deny the application, not to grant it.
3. According to Verizon's application, their cell tower "will enable *Verizon subscribers* to more easily make contact with the world around them..." On its face, the project is intended not to benefit the public generally, but only those who are customers of Verizon. Verizon does not



and cannot claim that their project is in the general public interest.

4. Putting up a fake and ugly 50 foot tall "pine" tower with (6) antennas and (6) remote radio units in a location directly in front of my unobstructed view of the bay would greatly diminish the value of my property and in fact would constitute an unconstitutional unjust taking and inverse condemnation of my property, as well as other property in the immediate area. It would also constitute a nuisance, interference with easement to light, air, and unobstructed view, servitude on adjacent land to limit size of trees, and would violate the duty imposed by conditional use permit not to obstruct the view. See, Dr. David Adams, *Information and Documentation of Adverse Health and Property Effects from Cell Phone Towers/Antennas and Low-Frequency Electromagnetic Radiation* (copy attached).

5. Verizon's application states that "Verizon proposes to install a monopole disguised as an evergreen tree. Antennas, remote radio units, and other related cables and equipment, would be mounted on the monopole. Other equipment cabinets, including a standby generator, would be installed on the ground near the monopole. Because it would be disguised as an evergreen tree, the monopole and attached antennas would have limited visibility from the neighborhood, as it would match the general appearance of other trees located in the vicinity. *This is evident from the photosimulations submitted with this application.*" (emphasis added). In fact, the materials attached to the application do not address, much less demonstrate, that "the monopole and attached antennas would have limited visibility from the neighborhood" or that this equipment would "match the general appearance of other trees located in the vicinity."

6. This tower would expose everyone in the area to dangerous levels of radiation, and Verizon offers no plan for the unbiased monitoring of radiation limits. See, Dr. David Adams, *Information and Documentation of Adverse Health and Property Effects from Cell Phone Towers/Antennas and Low-Frequency Electromagnetic Radiation* ("The adverse non-thermal biological and medical effects of low-frequency electromagnetic radiation (RFR, or Radio Frequency Radiation; microwave or "Wifi") are well documented in tens of thousands of published scientific studies - far more thoroughly, in fact, than were the effects of asbestos, DDT, dioxins, tobacco, or PCBs.")(citing and summarizing the studies). See also, *Vertex Dev., LLC v. Manatee Cty.*, 761 F. Supp. 2d 1348, 1363 (M.D. Fla. 2011)(" [T]he Mount Shasta Bioregional Ecology Center in California studies on Cell Phone Tower health effects have shown that 'even at low level there is evidence of damage to cell tissue and DNA ...' "). The only evidence to the contrary is a report commissioned by Verizon, which states: "The firm of Hammett & Edison, Inc., Consulting Engineers, *has been retained on behalf of Verizon Wireless...*" This firm has an obvious conflict of interest and their conclusions should not be credited. Verizon's application represents that "Verizon Wireless will pay the reasonable actual cost and administrative fees for the hiring of an *independent* qualified *engineering* consultant to evaluate any technical aspect of the proposed site", but it says nothing about the hiring of an independent radiation expert. A firm retained by Verizon is not "independent" and until a truly independent and qualified radiation expert evaluates the effect of this project it should not be allowed to go forward.

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*Have you considered the toxic impacts of diesel exhaust?*

Diesel soot, or diesel particulate, is the number one airborne carcinogen in California, and represents our state's most significant toxic air pollution problem. California Air Resources Board estimates that operation of an uncontrolled one-megawatt diesel engine for only 250 hours per year would result in a 50 percent increase in cancer risk to residents within one city block.

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*What about permitting?*

Backup generators should only be used when absolutely necessary. Some generator installations may require permits, including APCD permits, or land use, fire, or building entitlements, and associated inspections. Stationary diesel engines 50 hp and greater require a permit from the APCD.

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In this case, a diesel generator is not “absolutely necessary”. It is being proposed solely for the benefit and convenience of Verizon customers.

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Like Smart Cars, Cell Towers are built to be economically sensible rather than being built to be as safe as possible. Moreover, the blinding pace of Cell Tower installations across the Country makes "quality control" over the manufacturing and installation processes virtually impossible.

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For these reasons, it is imperative that local zoning authorities adopt and require strict compliance with setback requirements necessary to protect both local citizens and the public from the danger of collapse that Cell Towers present.

In this case, Verizon's application shows that the 50 foot cell tower would be installed immediately adjacent to a heavily used park and in the midst of a heavily wooded area. There is no setback requirement that will ensure that in the event the tower collapses it will not cause injury or death or a raging fire that could spread and also cause injury or death..

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Sincerely,

/s/ Michael N. Burt

Michael N. Burt

Attorney at Law

Vertex Development, LLC v. Manatee County, 761 F.Supp.2d 1348 (2011)

761 F.Supp.2d 1348  
United States District Court,  
M.D. Florida,  
Tampa Division.

VERTEX DEVELOPMENT, LLC, a Delaware  
Limited Liability Company, Plaintiff,

v.

MANATEE COUNTY, a Political Subdivision  
of the State of Florida, Defendant.

Case No. 8:09-CV-2645-T-17TBM.

|

Jan. 3, 2011.

#### Synopsis

**Background:** Lessee of parcel of land brought action against county seeking a declaratory judgment that the denial of its application to amend general development plan of the leased parcel to include telecommunications tower as a permitted use was void as violative of the Telecommunications Act (TCA), and an injunction ordering the county to approve the application as submitted in accordance with the TCA. Both parties moved for summary judgment.

**[Holding:]** The District Court, [Elizabeth A. Kovachevich, J.](#), held that decision denying lessee's application was supported by substantial evidence.

Defendant's motion granted; plaintiff's motion denied.

West Headnotes (9)

- [1] **Zoning and Planning**  
🔑 Permits, certificates, and approvals

#### Zoning and Planning

- 🔑 Telecommunications issues

A party seeking to overturn a decision by a state or local government or instrumentality thereof to deny a request to place, construct, or modify personal wireless service facilities, under the Telecommunications Act (TCA),

bears the burden of proving that the decision was not based on substantial evidence. Telecommunications Act of 1996, [47 U.S.C.A. § 332](#).

[Cases that cite this headnote](#)

- [2] **Zoning and Planning**  
🔑 Telecommunications issues

Substantial evidence, as required to support a decision by a state or local government or instrumentality thereof to deny a request to place, construct, or modify personal wireless service facilities under the Telecommunications Act (TCA), is more than a mere scintilla; it means such relevant evidence as a reasonable mind might accept as adequate to support a conclusion. Telecommunications Act of 1996, [47 U.S.C.A. § 332\(c\)\(7\)\(B\)\(iii\)](#).

[Cases that cite this headnote](#)

- [3] **Zoning and Planning**  
🔑 Telecommunications issues

While the “substantial evidence” standard for a decision by a state or local government or instrumentality thereof to deny a request to place, construct, or modify personal wireless service facilities, under the Telecommunications Act (TCA), is not as stringent as the preponderance of the evidence standard, it requires a court to take a harder look as compared to an arbitrary and capricious standard; review under this standard is essentially deferential, such that courts may neither engage in their own fact-finding nor supplant a local zoning entity's reasonable determinations. Telecommunications Act of 1996, [47 U.S.C.A. § 332\(c\)\(7\)\(B\)\(iii\)](#).

[Cases that cite this headnote](#)

- [4] **Zoning and Planning**  
🔑 Permits, certificates, and approvals

In reviewing a decision by a state or local government or instrumentality thereof

to deny a request to place, construct, or modify personal wireless service facilities, under the Telecommunications Act (TCA), federal courts are not free to substitute their own judgment for that of the state or local government or instrumentality thereof, even if they would decide the matter differently as an original matter. Telecommunications Act of 1996, 47 U.S.C.A. § 332(c)(7)(B)(iii).

[Cases that cite this headnote](#)

[5] **Zoning and Planning**

🔑 [Telecommunications issues](#)

In reviewing a local government's zoning board's decision to deny a request to place, construct, or modify personal wireless service facilities, under the Telecommunications Act (TCA), for substantial evidence, a federal court must accord the zoning board's fact-finding the same preclusive effect to which it would have been entitled in state court when the zoning board acts in a judicial capacity and the parties have had an adequate opportunity to litigate. Telecommunications Act of 1996, 47 U.S.C.A. § 332(c)(7)(B)(iii).

[Cases that cite this headnote](#)

[6] **Zoning and Planning**

🔑 [Maps, plats, or plans;subdivisions](#)

County zoning board's decision to deny lessee's application to amend general development plan of leased parcel of land to include a telecommunications tower as a permitted use was supported by substantial evidence, as required by the Telecommunications Act (TCA); photo simulation showed height disparity of proposed tower and open space vista of golf course on which eased parcel of land was located, letters and e-mails from residents, and testimony given by residents at a public hearing established that residents were concerned not only with the aesthetic impact the proposed tower would have, but also with the safety risks posed by the tower's proximity to local schools, an attorney, on behalf

of a homeowners association, and two real estate professionals testified and submitted articles pertaining to the diminution of property values due to cellular towers, and an engineer testified that other sites existed for the tower besides the candidate site. Telecommunications Act of 1996, 47 U.S.C.A. § 332(c)(7)(B)(iii).

[1 Cases that cite this headnote](#)

[7] **Zoning and Planning**

🔑 [Telecommunications towers and facilities](#)

Generalized aesthetic concerns do not justify the denial of a permit by a state or local government or instrumentality thereof to place, construct, or modify personal wireless service facilities, under the Telecommunications Act (TCA). Telecommunications Act of 1996, 47 U.S.C.A. § 332(c)(7)(B)(iii).

[Cases that cite this headnote](#)

[8] **Zoning and Planning**

🔑 [Telecommunications towers and facilities](#)

A blanket aesthetic objection does not constitute substantial evidence in support of a decision by a state or local government or instrumentality thereof to deny a request to place, construct, or modify personal wireless service facilities, under the Telecommunications Act (TCA); however, aesthetic concerns may be a valid basis for denial if substantial evidence of the visual impact of the tower is before the government or instrumentality thereof. Telecommunications Act of 1996, 47 U.S.C.A. § 332(c)(7)(B)(iii).

[1 Cases that cite this headnote](#)

[9] **Zoning and Planning**

🔑 [Telecommunications issues](#)

If any one ground provided by the local government for denying a request to place, construct, or modify personal wireless service facilities is supported by

substantial evidence, the denial is proper under the Telecommunications Act (TCA). Telecommunications Act of 1996, 47 U.S.C.A. § 332(c)(7)(B)(iii).

Cases that cite this headnote

#### Attorneys and Law Firms

\*1350 [Mary D. Solik](#), Law Offices of John L. Di Masi, PA, Orlando, FL, for Plaintiff.

[Robert M. Eschenfelder](#), Manatee County Attorney's Office, Bradenton, FL, for Defendant.

#### ORDER ON SUMMARY JUDGMENT MOTIONS

[ELIZABETH A. KOVACHEVICH](#), District Judge.

This cause is before this Court on:

Dkt. 13 Notice—Official Record, Hearing Video, Index

Dkt. 17 Notice—Hearing Transcript

Dkt. 20 Motion for Summary Judgment (Manatee County)

Dkt. 21 Motion for Summary Judgment (Vertex)

Dkt. 26 Response

Dkt. 27 Response

The Complaint in this case includes Count I, in which Plaintiff Vertex Development, LLC (“Vertex”) seeks a declaratory judgment under the Telecommunications Act of 1996, 47 U.S.C. Sec. 332, and Count II, in which Plaintiff Vertex seeks a mandatory injunction under 47 U.S.C. Sec. 332.

Plaintiff Vertex and Defendant Manatee County have filed cross-motions for summary judgment.

#### I. Standard of Review

Summary judgment should be rendered if the pleadings, the discovery and disclosure materials on file, and any affidavits, \*1351 show that there is no genuine issue as

to any material fact and that the movant is entitled to judgment as a matter of law. Fed.R.Civ.P. 56(c).

The plain language of Rule 56(c) mandates the entry of summary judgment after adequate time for discovery and upon motion, against a party who fails to make a showing sufficient to establish the existence of an element essential to that party's case, and on which that party will bear the burden of proof at trial.

*Celotex Corp. v. Catrett*, 477 U.S. 317, 106 S.Ct. 2548, 91 L.Ed.2d 265 (1986).

The appropriate substantive law will guide the determination of which facts are material and which facts are ... irrelevant. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248, 106 S.Ct. 2505, 91 L.Ed.2d 202 (1986). All reasonable doubts about the facts and all justifiable inferences are resolved in favor of the non-movant. See *Fitzpatrick v. City of Atlanta*, 2 F.3d 1112, 1115 (11th Cir.1993). A dispute is genuine “if the evidence is such that a reasonable jury could return a verdict for the non-moving party.” See *Anderson*, 477 U.S. at 248, 106 S.Ct. 2505. But, “[i]f the evidence is merely colorable ... or is not significantly probative ... summary judgment may be granted.” *Id.* at 249–50, 106 S.Ct. 2505.

#### II. Statement of Facts

1. Plaintiff Vertex Development, LLC is a Delaware corporation whose principal place of business is in Tampa, Florida. Plaintiff Vertex is in the business of providing service to various licensed wireless telecommunication providers by locating, leasing, zoning, constructing, and owning personal wireless service facilities.

2. Defendant Manatee County is a political subdivision of the State of Florida.

3. Plaintiff Vertex leased a parcel of land from River Club Golf Course, Inc., on which Plaintiff Vertex proposed to build a cellular telecommunications tower which would accommodate five wireless telecommunication providers. Plaintiff's anchor tenant was T–Mobile South, LLC.

4. River Club Golf Course is part of the larger River Club development. River Club Golf Course and Club House is owned and operated independently from the River Club Homeowner's Association. River Club is zoned Planned Development-Residential, and has a Res-1 Future Land Use Designation.

5. River Club Golf Course is a focal point of the design of River Club.

6. The Board of County Commissioners approved a Final Planned Development Plan for River Club Golf Course on December 17, 1987. (Dkt. 13, MC0381-MC0393).

7. On September 11, 1988, Manatee Joint Venture and River Club Golf Course, Inc. filed an Application for Development Approval of a Development of Regional Impact with the Manatee County Board of County Commissioners, which approved the Application on November 30, 1989 (Resolution R-89-243, Dkt. 13, MC0606-MC652). R-89-243 incorporated a Master Development Plan which provided for continuous development in subphases, in accordance with the subphase schedule incorporated therein by reference.

8. Manatee County adopted its Comprehensive Plan on May 11, 1989 (Manatee County Ordinance 89.01), pursuant to Ch. 163, *Fla. Stat.* The Manatee County Comprehensive Plan contains the long range policy structure for Manatee County. The purpose of the Manatee County Comprehensive Plan is to protect the public good for the long-term future of Manatee County. The Comprehensive Plan contains goals, objectives and policies on land use, transportation, environmental protection, \*1352 coastal protection, affordable housing, utility services and historic preservation.

9. Manatee County adopted its Land Development Code in 1990, pursuant to [Sec. 163.3202, Fla. Stat.](#), *et seq.* (Local Government Comprehensive Planning and Land Development Regulation Act), the general powers in Ch. 125, *Fla. Stat.*, and the Florida Constitution. The purpose of the Land Development Code is to implement the Comprehensive Plan of Manatee County by establishing regulations, procedures and standards for review and approval of all development and use of land in the unincorporated portions of Manatee County, and further to foster and preserve

public health, safety, comfort and welfare in the unincorporated portions of Manatee County. Chapter 5 of the Land Development Code establishes development review procedures. Sec. 508 addresses site plans. Chapter 6 establishes zoning districts. Sec. 603 addresses planned development districts. Chapter 7 establishes development standards of general applicability. Sec. 704 addresses conditional use criteria. The Court takes judicial notice of the provisions of the Manatee County Comprehensive Plan and Manatee County Land Development Code.

Sec. 508, Land Development Code, provides:

**508.1. Purpose and Intent.** The purpose of site plan review is to ensure that development is carried out in compliance with this Code and the Comprehensive Plan. In addition, a site plan describing and portraying both existing and proposed conditions of the development is required in order that the approving body or official can make an informed decision.

**508.2. Applicability.** Pursuant to this Code, in certain circumstances a site plan may be required as part of a submitted application for development approval, or may, where authorized by this Code, be considered and approved as a separate step in the development process. An applicant has the option of proceeding directly to preliminary site plan approval without first obtaining approval of a General Development Plan. An applicant may be required to proceed directly to preliminary site plan approval where the Board determines a General Development Plan will not provide adequate detail to assure compliance with this Code and the Comprehensive Plan.

....

**508.6. Factors for Reviewing Proposed Site Plans.** In deciding whether to recommend for approval, or approve, a proposed site plan, the Planning Commission, Board or Planning Director, as the case may be, shall consider whether the proposed site plan is consistent with the Comprehensive Plan and this Code. In determining whether such site plan is consistent with the Comprehensive Plan and this Code, the Planning Commission, Board and the Planning Director shall consider the following factors:

**508.6.1. Physical Characteristics of the Site; Relation to Surrounding Property....**



....

**508.6.4. Compatibility....**

....

**508.6.6. Design Quality....**

**508.6.7. Relationship to Adjacent Property....**

....

**508.6.11. Natural and Historic Features....**

....

**508.6.13. Height....**

....

Sec. 603.1, Land Development Code, provides:

**\*1353 603.1. Purpose.** Planned development districts are intended to be established where a proposed project warrants greater flexibility than a standard district provides; when the Comprehensive Plan requires a planned development review process; or when the ability to attach conditions to a site plan is warranted.

Planned development may be used as a vehicle to permit developments when the innovative use of buffering and modern design techniques mitigate the external impacts of development and create a helpful physical environment. Through the utilization of a planned district, the Board may allow mixed dwelling types and/or housing densities; provide for the safe, efficient, convenient, harmonious groupings of structures, uses, facilities, and support uses; for appropriate relationships of space, inside and outside buildings, for intended uses; for preservation of desirable natural features; and minimum disturbance of natural topography.

Within Planned Development Districts, regulations adapted to such unified planning and development are intended to accomplish the purposes of zoning and other applicable regulations to an equivalent or higher degree than where such regulations are intended to control unscheduled development on individual lots; to promote economical and efficient land use; improve levels of amenities for harmonious, creative design, and a better environment.

In view of the substantial public advantage of planned development, it is the intent of these regulations to promote and encourage development in this form, where appropriate, in location and character.

**603.2. Planned Development, Defined.**

For purposes of this Code, a planned development is:

1. Land to be planned as a whole;
2. Built in a single development operation or a definitively programmed series of development operations;
3. To include principal and accessory structures and uses substantially related to the character and purposes of the district;
4. Built according to plans, which include not only streets, utilities, lots, building locations, and the like; but also, site plans for all buildings intended to be located, constructed, used and related to each other; and plans for other uses and improvements on the land as related to the buildings; and
5. To include a program to provide for operation and maintenance of such areas, facilities and improvements for common use by the occupants of the planned development district; but which will not be provided, operated or maintained at general public expense.

**603.3. Relation of Planned Development Regulations to General Zoning, Subdivision or Other Regulations; Specific Approval to the Equal Satisfaction of Public Purposes.**

The planned development regulations which follow shall apply generally to the initiation of and regulation of all planned development districts.

**603.3.1.** Where there are conflicts between the special Planned Development regulations herein and general zoning, subdivision, other regulations or requirements; these Planned Development regulations shall apply in Planned Development districts unless the Board finds, in the particular case, that provisions herein do not serve public purposes to a degree at least equivalent to such general zoning, subdivision, or other regulations or requirements.

\*1354 **603.3.2.** Where actions, designs or solutions proposed by the applicant are not literally in accord with applicable Planned Development or general regulations but the Board makes a written finding in the particular case, that the public purposes of these regulations are satisfied to an equivalent or greater degree, the Board may grant specific approval for the particular case .....

**603.3.3.** Except as indicated above, and notwithstanding procedures and requirements generally in effect, the procedures and requirements set forth in this section shall apply in all Planned Development districts.

....

**603.6. Changes in Approved General Development Plan**

**603.6.1. Requests for Change.** All requests for review of changes to the General Development Plan shall include, a drawing indicating the property, a location drawing indicating the relationship of the portion to be revised with respect to the entire Planned Development district, if the revision does not include the entire Planned Development district; and such other information concerning the lot, adjoining lots, or other information to clearly represent the entire proposed change and any associated impacts upon the planned development and adjacent properties; and for determining whether the provisions of the district and this Code are being observed.

....

**603.6.4. New Plans Required.** The following changes and similar changes, shall be considered substantial modifications requiring consideration of a new General Development Plan by the Planning Commission and Board of County Commissioners:

....

2. Any change in use from the specifically approved use, except as listed in 603.6.2.1(11) ....

**603.7. PDR—Planned Development Residential.**

**603.7.1. Intent.** It is the intent of these regulations to provide for development of residential areas in areas adequately served or in areas which can be served by

necessary utilities and services, in locations that are compatible with adjacent and surrounding land uses in accord with the goals, objectives, and policies of the Comprehensive Plan and in compliance with the standards set forth herein.

It is further the intent to permit the establishment of such districts where planned development with carefully located buildings, parking and service areas and landscaped open space will provide for internal convenience and ease of use as well as external compatibility. It is further intended that PDR districts may provide a broad range of housing types appropriate to the general need of the area served.

Uses in PDR districts shall be consistent with Comprehensive Plan requirements regarding use, type, locational criteria and other applicable Comprehensive Plan criteria.

**603.7.4. Specific and Review Criteria.**

**603.7.4.1. Site Planning.** Site planning within the district shall provide protection of the development from potentially adverse surrounding influences. The orientation of the development shall generally be toward internal streets and pedestrian systems and away from adjacent local streets and other adjacent land uses ....

....

**603.7.4.4. Neighborhoods.** All Planned Residential Developments shall be designed in such a manner as to promote \*1355 neighborhoods. This shall be done by creating a neighborhood focal point within the development such as waterbodies, recreation areas or community centers.

Other methods of achieving neighborhood unity include: use of natural features, unified theme, use of greenbelts and pedestrian/bikeway corridors.

....

**603.7.4.9. Building Height.** The maximum height in the PDRT District is thirty-five (35) feet. However, requests to increase height above thirty-five (35) feet may be approved by the Board of County Commissioners after review of the nature of surrounding uses, and the criteria listed in 603.7.4.9 below, upon the making of a specific finding that the proposed development is

compatible with the surrounding area and will not created any external impacts that would adversely affect surrounding development, existing or proposed, waterfront vistas or entranceways.

**1. Compatibility.**

- a. Whether the height of the proposed development creates any external impacts that would adversely affect surrounding development, existing or proposed, waterfront vistas or entranceway areas.

**2. Relationship to Adjacent Properties.**

....

- b. Whether the heights of buildings step down or otherwise provide an appropriate transition to adjacent properties.

....

Sec. 701, Land Development Code, provides:

**701.1. Purpose.** The purpose of this Chapter is to provide development standards relating to specific land uses and natural or manmade features, wherever these are to be found. The regulations of this Chapter are intended to supplement, rather than supersede the district regulations found in Chapter 6 of this Code.

Sec. 704.59. **Personal Wireless Service Facilities.**

Purpose and Intent:

The purpose and intent of this section is to provide development standards relating to specific types of Personal Wireless Service Facilities (PWSF). The requirements established herein are deemed necessary by Manatee County to protect and enhance the community's environmental, economic and aesthetic quality, thereby contributing to the overall objective of promoting the health, safety and general welfare.

10. Sec. 704.59.2.B applies to Telecommunication Towers in all Planned Development Zoning Districts. Sec. 704.59.2(B)(2) provides:

In the event the telecommunications tower is not identified on an approved General Development

Plan or approved Preliminary Site Plan as an allowed use, then the applicant is required to file an application to amend the applicable General Development Plan or Preliminary Site Plan. In such event, the amendment shall be reviewed during the public hearing process by the Planning Commission and the Board of County Commissioners. The criteria used by staff, the Planning Commission and the Board of County Commissioners shall be the general criteria for the processing of General Development Plans in Section 508.4 (Sections 508.4.1 through 508.4.2.3, LDC) and the criteria for processing a Preliminary Site Plan as set forth in Section 508.6 (508.6.1 through 508.6.25.4).

11. PDR 86-5(F) included approval of a golf course, club house and entrance \*1356 boulevard, within the larger 388 +/-acre River Club development. PDR 86-5 also notes a recorded conservation easement.

12. Plaintiff Vertex filed its application to amend the General Development Plan of River Club Golf Course on May 21, 2009, to include the telecommunications tower as a permitted use.

13. On June 10, 2009, Plaintiff Vertex Development supplemented its application, in response to Manatee County's Application Completeness Letter.

14. Prior to a hearing before the Manatee County Planning Commission, Manatee County Planning Staff prepared a Staff Report recommending approval of Plaintiff's application.

15. The Manatee County Planning Commission heard Plaintiff's application at a duly noticed public hearing held on November 12, 2009.

16. At the hearing, Manatee County Staff recommended approval of Plaintiff's application, on the basis that

Plaintiff's application was consistent with the Land Development Code and the Comprehensive Plan.

17. The Planning Commission, by a vote of 4-2, recommended that Plaintiff's application be denied.

18. On December 3, 2009, the Board of County Commissioners conducted a quasi-judicial hearing on Plaintiff's Application.

19. Manatee County Staff presented a Staff Report in which Manatee County Staff recommended approval, with stipulations. The Staff Report refers to the amending Ordinance as "approving a revised Zoning Ordinance and Preliminary Site Plan (PDR-86-05(P)(R2)) to be substituted for Zoning Ordinance PDR-86-05(P)(R) approved on December 17, 1987 to amend the allowable uses to include a 150' high telecommunications tower within River Club Golfcourse." (Dkt. 3-4, p. 4). The Staff Report includes a brief history of the development of River Club:

#### *History*

River Club was rezoned to PDR-WP-ST on November 7, 1985 (Z-85-95) for approximately 388 +/- acres. The Preliminary Development Plan for the Golf Course was approved on April 24, 1986 (PDR-86-05(P)) with the Final Development Plan (PDR-86-05(F)) approved on December 17, 1987 for approximately 388 +/- acres and included an 18 hole Golf course, Clubhouse and a Driving Range. A revision to the Preliminary Development; Plan (PDR-86-05(P)(R)) was approved on March 24, 1988 with the Final Development Plan (PDR-86-05(F)(R)) on April 28, 1988.

The applicant is requesting a revision to the approved Preliminary Development Plan for River Club Golfcourse (PDR-86-05(P)(R2)). Staff received an application to locate a telecommunication tower on a leased portion within the boundary of River Club Golfcourse 33.3 +/- campus. The applicant proposes to construct a 150' camouflaged telecommunication tower, equipment buildings and relocated 2 parking spaces to the south side of the existing parking lot. The tower has been camouflaged as a flag pole.

(Dkt. 3-4, p. 24).

20. The Staff Report notes the Planning Commission Action of 11/12/2009, in which the Planning Commission recommended denial. The Staff Report also notes Public Comment and Correspondence to the Planning Commission:

David Lunkes, Michael Murphy, Cecilia Harrison and Alex Troise, River Club residents, opposed the erection of the cell tower citing incompatibility, deed restriction requirements, the intention of the golf course to remain open space in perpetuity, insufficient buffers, and commercial \*1357 uses in close proximity to residential zoning. Gregory Gallagher, River Club resident, submitted a handout and expressed concern regarding the height and nature of the tower. Craig Harrison, River Club resident submitted sections of the LDC and a zoning map to support opposition of the tower and a commercial use in a residential zoning district.

(Dkt. 3-4, pp. 4-5).

The Court notes that e-mailed public comments express concern about depreciation of property values and safety risks associated with the presence of a cell tower. (Dkt. 3-4, pp. 54-141).

21. The Staff Report further notes positive aspects, negative aspects, and mitigating measures. The mitigating measures include:

1. The 150# high camouflaged telecommunication tower is camouflaged as a flag pole.
2. The nearest residential lot is 353' to the west of the tower lease parcel.
3. Other developments have telecommunication towers within site (sic) distance of existing residential developments.

4. Telecommunication towers are permitted uses within the PDR zoning district.

5. The required landscape screening along the perimeter of the compound area should help make the tower base and equipment less obvious at ground level.

(Dkt. 3-4, p. 8). The Staff Report also includes a detailed discussion of how the Application meets the LDC Conditional Use Criteria for Telecommunication Towers (704.59(1)-704.59(4)). (Dkt. 3-4, pp. 9-24).

22. Plaintiff Vertex presented evidence on Plaintiff's Application at the hearing (Dkt. 13, MC0155-MC0589).

23. Residents of River Club appeared at the hearing and spoke in favor of and in opposition to Plaintiff's Application. Various residents submitted photographs, petitions, a DVD and other supporting documents for the views stated at the hearing (Dkt. 13, MC0596-MC01228).

24. Plaintiff Vertex addressed various issues in rebuttal to the opposition to Plaintiff's Application (Dkt. 17, pp. 6-42).

25. A motion was made to adopt Ordinance 09-69, denying Plaintiff's application (Dkt. 17, p. 43). The Board then posed questions about various issues, and discussed specific issues with Manatee County Staff. (Dkt. 17, pp. 43-53).

26. The Board of County Commissioners denied Plaintiff's Application, with a vote of 6-1, in adopting Ordinance 09-69.

27. Ordinance 09-69 includes the following Findings of Fact:

*Section 1. FINDINGS OF FACT.* The recitals set forth above are true and correct, and are hereby adopted as findings by the Board of County Commissioners. The Board of County Commissioners, after considering the testimony, evidence, documentation, the recommendation and findings of the Planning Commission, as well as all other matters presented to the Board at the public hearing hereinafter referenced, hereby makes the following findings of fact:

A. The Board of County Commissioners has received and considered the report of the Manatee County Planning Commission concerning the application for the Preliminary Site Plan and Conditional Use for a 150# high camouflaged telecommunication tower on the real property described in Exhibit "A."

B. The Board of County Commissioners held a duly noticed public hearing on December 3, 2009 regarding the proposed Preliminary Site Plan and \*1358 Conditional Use described herein in accordance with the requirements of the Manatee County Land Development Code, and has further considered the testimony and evidence received at the public hearing.

C. The proposed Preliminary Site Plan and Conditional Use request for the 150# high camouflaged telecommunication tower regarding the property described in Exhibit "A" herein is found to be not consistent with the requirements of the Comprehensive Plan.

D. Based upon the evidence submitted into the public hearing record of the Planning Commission and the Board of County Commissioners, the Board of County Commissioners finds that the conditional use request does not comply with the criteria in Section 704.59 of the Land Development Code.

28. The entire Comprehensive Plan of Manatee County is part of the record before the Board of County Commissioners. (Dkt. 3-5, p. 4). Ordinance 09-69 also identifies the provisions of the Comprehensive Plan which the Board of County Commissioners considered relevant to support the Board's denial of approval of the Preliminary Site Plan and Conditional Use applications, and includes Findings of Fact relevant to the Comprehensive Plan provisions. (Dkt. 3-5, pp. 5-6).

29. The entire Land Development Code is part of the record before the Board of County Commissioners. Ordinance 09-69 identifies the provisions of the Land Development Code which the Board of County Commissioners considered relevant to the Board's denial of the Preliminary Site Plan and Conditional Use Applications, and includes Findings of Fact relevant to the Land Development Code provisions. (Dkt. 3-5, pp. 7-8).

30. Plaintiff Vertex filed the Complaint in this case on December 31, 2009.

### III. Plaintiff's Motion

Plaintiff Vertex contends that Plaintiff Vertex has submitted uncontroverted evidence that T-Mobile has a coverage gap in the area and that the proposed tower site would fill in T-Mobile's coverage gap. Plaintiff Vertex avers that, during the December 3, 2009, hearing before the BOCC, the BOCC engaged in little or no debate or discussion of the merits of the application weighed against criteria set forth in Sec. 704.59 of the Manatee County LDC. Plaintiff Vertex argues that Commissioner McClash's articulated basis for the motion to deny was based on the Planning Commission's recommendation of denial, that the application failed to meet the original intent of the development approved for the River Club Community, and that the River Club Community is to be planned as a whole.

Plaintiff Vertex seeks both declaratory and injunctive relief pursuant to the Federal Telecommunications Act of 1996 ("TCA"), 47 U.S.C. Sec. 332(c)(7)(B)(iii). Plaintiff Vertex seeks a declaratory judgment that the denial of its application was void as violative of the TCA, and an injunction ordering Manatee County to approve the application as submitted in accordance with the TCA. The basis for the request for relief is founded upon Sec. 332(c)(7)(B)(iii) of the TCA, requiring that, "any decision by a State or local government or instrumentality thereof to deny a request to place, construct, or modify personal wireless service facilities shall be in writing and supported by substantial evidence contained in a written record." Plaintiff Vertex alleges the BOCC violated the previously cited provision of the TCA when it denied Vertex's application for 150# cell tower without substantial evidence in the written record to support its decision. Defendant Manatee County responds that the Board had ample substantial \*1359 evidence before it upon which to rest its decision to deny the application.

### IV. General Principles

The Federal Telecommunications Act of 1996, 47 U.S.C. Sec. 332, provides for the promotion of competition and the reduction of regulation in the telecommunications industry, in order to secure lower prices and higher quality services for American telecommunications consumers and to encourage the rapid deployment of new

telecommunications technology. Telecommunications Act of 1996, Pub. L. No. 104-104, purpose statement, 110 Stat. 56, 56 (1996). The Act accomplishes this in part through limitations, both procedural and substantive, placed upon local zoning authorities. 47 U.S.C. Sec. 332(c)(7). One such procedural limitation requires that "any decision by a State or local government or instrumentality thereof to deny a request to place, construct, or modify personal wireless service facilities shall be in writing and supported by substantial evidence contained in the written record." 47 U.S.C. Sec. 332(c)(7)(B)(iii). Courts have observed that Sec. 332(c)(7)(B) is "a deliberate compromise between two competing aims—to facilitate nationally the growth of wireless telephone service and to maintain substantial local control over siting of towers." *U.S. Cellular v. City of Franklin, New Hampshire*, 413 F.Supp.2d 21, 29 (D. New Hampshire 2006) (citing to *Town of Amherst v. Omnipoint Commc'ns Enters. Inc.*, 173 F.3d 9, 13 (1st Cir.1999)).

[1] [2] [3] [4] The party seeking to overturn the decision reached by a local government bears the burden of proving that the decision was not based on substantial evidence. *Michael Linet, Inc. v. Village of Wellington*, 408 F.3d 757, 762 (11th Cir.2005). "Substantial evidence is more than a mere scintilla. It means such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." *Consol. Edison Co. v. NLRB*, 305 U.S. 197, 229, 59 S.Ct. 206, 217, 83 L.Ed. 126 (1938). While the "substantial evidence" standard is not as stringent as the preponderance of the evidence standard, it requires a court to take a harder look as compared to an arbitrary and capricious standard. *Color Pigments Mfrs. Ass'n, Inc. v. OSHA*, 16 F.3d 1157, 1160 (11th Cir.1994). Review under this standard is essentially deferential, such that courts may neither engage in their own fact-finding nor supplant a local zoning entity's reasonable determinations. *Cellular Telephone Co. v. Town of Oyster Bay*, 166 F.3d 490, 494 (2d Cir.1999). The legitimate power of federal courts to interfere in the kinds of zoning decisions involved in cases such as these is clearly limited. *Aegerter v. City of Delafield*, 174 F.3d 886, 891-92 (7th Cir.1999). Federal Courts are not free to substitute their own judgment for that of the board, even if they would decide the matter differently as an original matter. 360° *Communications Company of Charlottesville v. Board of Supervisors of Albemarle County*, 211 F.3d 79, 84 (4th Cir.2000).

Plaintiff Vertex asserts that Manatee County's written decision set forth in Ordinance 09–69 establishes that the BOCC's decision is not supported by substantial evidence, as required by Sec. 332(c)(7)(B)(iii) of the TCA. Plaintiff Vertex contends that the findings within Ordinance 09–69 bear little relation to the actual application and request under review, the testimony in the record, and the basis on which the Board denied the application. As discussed below, the Court finds Plaintiff's contention to be unpersuasive and unfounded.

## V. Preliminary Issues

### 1. “In Writing” Requirement

It is not disputed that Ordinance 09–69 satisfies the “in writing” requirement of the TCA.

### \*1360 2. Scope of Defendant's Review Process

Plaintiff Vertex has argued that the decision of Defendant BOCC is limited to consideration of the conditional use criteria in Defendant's LDC. The Court does not agree.

[5] This Court must accord the BOCC's fact-finding the same preclusive effect to which the BOCC would have been entitled in state court when the BOCC acts in a judicial capacity and the parties have had an adequate opportunity to litigate. *See University of Tennessee v. Elliott*, 478 U.S. 788, 799, 106 S.Ct. 3220, 92 L.Ed.2d 635 (1986). Manatee County permits telecommunication towers within PDR districts subject to proof that certain facts and conditions as detailed in LDC 704.59 exist. The inclusion of a use as conditional in a particular zoning district establishes a *prima facie* case that the permitted use is in harmony with (i.e. compatible with) the general zoning plan. *See* LDC, Fig. 6–1, Community Service Uses. However, a finding of harmony with the general zoning plan is not *required*, but is merely permitted. *Wright v. Rockefeller*, 376 U.S. 52, 84 S.Ct. 603, 11 L.Ed.2d 512 (1964). In *American Tower LP v. City of Huntsville*, 295 F.3d 1203, 1208 (11th Cir.2002), the Eleventh Circuit viewed the specific telecommunication tower regulations as conditions to be met before one can be considered for (but not entitled to) a special exception.

The BOCC's review of Plaintiff's application is site-specific. The Court notes that River Club, which includes River Club Golf Course, is zoned PDR. Under Manatee County's LDC, compatibility of a proposed development

within an existing planned development with adjacent properties surrounding the proposed development is an appropriate consideration. The Court has included numerous provisions of Manatee County's LDC above which establish both the authority of the Board of County Commissioners to exercise discretion and the factors which guide the exercise of that discretion. There is no “one size fits all” solution to applications for development permits. Compliance with the requirements included in the conditional use criteria of Defendant Manatee County's LDC is the beginning of the story, not the conclusion. In any particular application, one factor may predominate over another, based on the qualities of a particular site. Manatee County's LDC provides a process for review which takes into account not only an applicant's compliance with conditional use requirements but also input from surrounding property owners. Given that all property owners have constitutional rights, the Court must carefully evaluate the review process. If compatibility with the surrounding area is required, such a factual finding could include subjective elements that could be used to mask improper or unsubstantiated considerations, yet, as the Manatee County LDC is structured, the BOCC retains discretion under its site-specific review to determine whether certain uses are detrimental to a zoning area. *See AT & T Wireless Services of Florida, Inc. v. Orange County*, 23 F.Supp.2d 1355, 1362 (M.D.Fla.1998).

Plaintiff Vertex argues that the findings in Ordinance 09–69 bear little relation to the actual application and request under review, the testimony on the record, and the basis on which the Board denied Plaintiff's application. Plaintiff Vertex argues that Defendant's decision is not based on applicable local regulations, nor is it supported by substantial evidence. Plaintiff Vertex states that, once the public hearing portion of the hearing of 12/3/2009 concluded, an immediate motion was made and seconded to deny the application, without any articulated basis for denial.

To the extent that Plaintiff Vertex is arguing that Defendant's decision to deny \*1361 Plaintiff's application is tainted by a due process violation in which, for example, the decision to deny Plaintiff's application was made before the presentation of evidence, or based on some general objection to the presence of telecommunication towers, the Court finds that the record does not support such an objection. The Court

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notes that, after deliberations, the BOCC did articulate a basis for its decision which was related to the specific planned development under consideration. The Court also notes that Plaintiff Vertex does not argue that the decision to deny Plaintiff's application completely prohibits T-Mobile South, LLC from providing service in the applicable coverage area. The deck was not stacked against Plaintiff Vertex.

#### VI. Evidence Presented at December 3, 2009, Public Hearing

In considering the evidence presented at the 12/03/2009 public hearing, the Court will cite to evidence contained within the record according to the exhibit letter and corresponding number contained within the Index of Record (Dkt. 13) filed with this Court.

##### 1. Photo Simulation

[6] On December 3, 2009, the Manatee County BOCC held a public hearing to address a myriad of issues, one of which was Vertex's application for a cell phone tower to be constructed within the River Club Community in Manatee County. The BOCC heard testimony from several residents, and also received into evidence slide shows, coverage maps, graphs, photos of other cell towers, a photo simulation of the tower's effects within River Club, and a video presentation by a River Club resident. While the BOCC may have relied upon other evidence within the record that this Court will not address in this order, in addition to the evidence addressed below, the evidence as set forth below comprises substantial evidence to support the BOCC's conclusions in adopting Ordinance 09-69 denying Plaintiff Vertex's application for a telecommunications tower.

During Plaintiff Vertex's presentation to the BOCC at the December 3, 2009, public hearing, Plaintiff Vertex offered a photo simulation analysis of the proposed telecommunications tower into evidence. The photo simulation depicts the proposed cell tower's visual impact upon the River Club community from various locations. Exhibit B-3 (Dkt. 13) provides a "bird's-eye view" of the River Club Community and provides sixteen different locations within River Club from which photos were taken to illustrate the tower's aesthetic impact on River Club. Exhibit B-4 (Dkt. 13) provides a photo from each of the sixteen locations, each with both a current view and prospective view depicting the aesthetic impact, should the

tower be constructed. The prospective view photos have a superimposed 150# flagpole cell tower at the proposed tower location and each prospective photo illustrates the visual impact of the tower from each designated location. For instance, View One is a photo depicting the compound view, which is a view from the proposed tower's base. View One depicts both the current view without the cell phone tower constructed and a prospective view with the 150# cell tower in place. View Two is facing Northwest from the intersection of River Club Boulevard and Clubhouse Drive, again depicting both the current view and the view from this location with a superimposed 150# flagpole cell tower constructed at the proposed location, the River Club Golf Course. All sixteen photos demonstrate the visual impact the proposed flag pole cell tower would have on River Club by demonstrating how the neighborhood vistas would be affected if the cell phone tower is constructed as proposed. View Four facing Northeast from Clubhouse Drive and Oakbrooke Circle and View Six facing Southeast \*1362 from Spyglass Lane, illustrate the disparity between the existing tree line and the top of the 150# cell tower. When viewing these photographs, it is readily apparent that the 150# flagpole tower far exceeds the height of the next closest structure.

Turning to Ordinance 09-69, it is apparent that the BOCC was concerned with the character and purpose of the district. Finding Five under the heading, Applicable Findings of Fact relevant to the above Land Development Code provision Sec. 704.59, Telecommunications Facilities, states as follows:

The siting of the 150# foot high telecommunication tower within the River Club Golf Course as depicted in the Preliminary Site Plan application rather than reducing or eliminating visual obtrusiveness as required by Section 704.59(2), LDC, emphasizes the out-of-scale nature of the 150# high structure in relation to the open space vista of the River Club Golf Course. The lack of transition in the step down of height serves to accentuate the visual obtrusiveness of the 150# high structure.



The BOCC was clearly concerned with the height disparity and the effect such a disparity would have on River Club, should the tower be constructed. Exhibit B-3 (Dkt. 13) and B-4 (Dkt. 13) of the River Club photo simulation provide evidence that such a height disparity does in fact exist.

The Eleventh Circuit has determined that aesthetics may constitute a valid basis for denial of a wireless permit *if* substantial evidence of the visual impact of the tower was before the board. *Preferred Sites, LLC v. Troup County*, 296 F.3d 1210, 1219 (11th Cir.2002) (Emphasis in original). In the case *sub judice*, the photo simulation depicting the visual impact of the proposed cell tower on River Club was before the BOCC at the point at which the BOCC reached its decision to deny Vertex's application, and therefore provides a valid basis for denial of Plaintiff's application. However, the photo simulation is not the only evidence before the BOCC as to the proposed tower's visual impact.

## 2. Residents' Testimony

While the photo simulation establishes the aesthetic impact the cell phone tower would have if constructed, so too does the extensive testimony heard by the BOCC at the December 3, 2009, public hearing. The hearing included the testimony of River Club residents opposing the cell tower, including the testimony of two real estate brokers. In addition to the testimony given at the public hearing, the record also includes letters and e-mails from River Club residents opposing the cell tower on similar grounds. Exhibit A-7 (Dkt. 13) was offered by the Manatee County Staff during the public hearing, and contains copies of e-mails and letters from River Club residents in both support of and opposition to the proposed cell tower within River Club. While there are some letters and e-mails that support the cell phone tower's construction, the majority of the letters and e-mails are in opposition, as discussed below.

An e-mail from Cheryl McGrew dated March 3, 2008, opposes the tower construction. Ms. McGrew's e-mail states, "We have an elementary school as well as a middle school where children bike, walk, and are bused to everyday." Ms. McGrew goes on to state, "I am very concerned about the possible health risks." An e-mail from Margie Danahy states, "Because of it's size and the unknown possibilities of radiation coming from the tower,

I feel it is inappropriate for an area that is close to schools and homes." An e-mail from Abdul and Sandra Abdulla states, "We are against putting a cell tower at the golf \*1363 course in the middle of a residential community that is near two public school as well as preserve areas." An e-mail from David Lunkes opposing the tower states, "Braden River Elementary and Middle School are within a half mile of the proposed tower." An e-mail from Maria Sciame states, "I am a resident of this community and send my child to Braden River Elementary, a school in close proximity to the proposed tower. As a mother and a health care professional, I am very concerned regarding the lack of data on the long-term health effects ..." An e-mail from Bill Rempe states, "[t]he Mount Shasta Bioregional Ecology Center in California studies on Cell Phone Tower health effects have shown that 'even at low level there is evidence of damage to cell tissue and DNA ...' ". An e-mail from Marie Reeve states, "[b]eing located so close to schools and residences poses potential health risks." A letter from Marilyn Peters when referencing the cell tower states, "It would pose potential health risks of particular concern because of the two schools that are close to the tower site." A letter from Madeline Schindel when referencing the cell tower states, "It would pose potential health risks of particular concern because of the two schools that are close to the tower site." An e-mail from Donna O. Hedrick states, "This tower is very close to my home. Currently, when I sit on my lanai, I see a preserve with trees, birds and blue sky. If this project goes forward, my view will then include a 160 foot cell tower. It just doesn't fit. Please say no." An e-mail from Alex Troise states, "When I purchased my home in 2007, I purposely selected a location in which the aesthetics of the surrounding area would remain constant." Upon review of these selected resident's concerns, it is clear that the River Club residents are concerned not only with the aesthetic impact the proposed cell tower would have, but also with safety risks posed by the tower's proximity to the local schools.

[7] [8] Generalized aesthetic concerns do not justify the denial of a permit. *New Par v. City of Saginaw*, 301 F.3d 390, 398 (6th Cir.2002); *Southwestern Bell Mobile Systems, Inc. v. Todd*, 244 F.3d 51 (1st Cir.2003); *Omnipoint Corp. v. Zoning Hearing Bd.*, 181 F.3d 403, 409 (3d Cir.1999). A blanket aesthetic objection does not constitute substantial evidence under *Sec 332*. See *Preferred Sites*, 296 F.3d at 1219. However, aesthetic concerns may be a valid basis for denial if substantial evidence of the visual impact of

the tower is before the Board. *Id.* at 1219. When evidence specifically focused on the adverse visual impact of the 120' tower at a church site surrounded by homes and included opposition of 50 residents due to views and simulated photographs of how the tower would look from the homes, more than a mere scintilla of evidence exist[ed]. *Voice Stream PCS I, LLC, d/b/a T-Mobile v. City of Hillsboro*, 301 F.Supp.2d 1251, 1258 (D. Oregon 2004). (“[If a zoning board] denies a permit based on the *reasonably-founded* concerns of the community then there is ‘substantial evidence’ ”.) *Petersburg Cellular P’ship v. Bd. of Supervisors of Nottoway County*, 205 F.3d 688, 695 (4th Cir.2000). The Fourth Circuit has previously held that, “[t]he repeated and widespread opposition of a majority of the citizens ... who voiced their views-at the Planning Commission hearing, through petitions, through letters, and at the City Council meeting-amounts to far more than a ‘mere scintilla’ of evidence to persuade a reasonable mind to oppose the application.” *AT & T Wireless PCS, Inc. v. City Council of City of Virginia Beach*, 155 F.3d 423, 431 (4th Cir.1998).

In addition to the photo simulation and letters and e-mails (A-7, Dkt. 13) before the BOCC, several residents spoke at the \*1364 December 3, 2009, public hearing. River Club resident Diane Izzo spoke in support of the tower. Ms. Izzo testified that the golf course's use would not be changed by the tower and there exists no legitimate reason to deny Vertex's application (Hearing p. 63-66). The remaining testimony given at the public hearing was in opposition to the cell tower.

River Club resident Emanuel Alex Troise testified that if the tower were to be constructed it would appear to be coming out of the top of his roof. (Dkt. 17-2, p. 66-71). River Club resident David Lunkes testified that the tower would negatively affect the aesthetics of the neighborhood and further that, had the tower been present earlier, his view and his son's view of a lunar eclipse would have been inhibited. (Dkt. 17-2, p. 77-82). River Club resident Michael Murphy detailed how the tower would dwarf his view of the two-story golf course clubhouse and the mature oaks trees visible from his backyard (Dkt. 17-3, p. 108-116). River Club resident Karen Murphy, a professional NCP Planner, testified that River Club's special sense of place has been accomplished through thoughtful design and aesthetic layout. She further opined that the location of the cell phone tower would severely alter the character of River Club. (Dkt. 17-3, p. 128-

135). River Club resident Elizabeth Laboune, a financial planner, testified to the economic impacts of cell towers on community property values. (Dkt. 17-3, p. 139-145).

The Eleventh Circuit has held that a resident realtor's testimony concerning the cell sites negative impact on real estate values and proximity to local middle school was substantial evidence. *American Tower LP v. City of Huntsville*, 295 F.3d 1203, 1208-1209 (11th Cir.2002). In *American Tower*, American Tower LP applied to the Board of Zoning Adjustments (“BZA”) of the City of Huntsville for a special exception and variance for the proposed tower property. *Id.* at 1206. The BZA heard testimony from several residents on the negative impact of the proposed tower on aesthetics and property values. For example, the BZA heard testimony from a local resident who testified that she was a realtor and investor in real estate. She said that, in her 16-year experience as a realtor, once the proposed tower was known in the residential neighborhood, it had made it harder to sell houses in the neighborhood, devaluing the property and hurting the neighborhood. *Id.* at 1208. In addition, the BZA heard testimony on safety questions tied to the proposed tower's unusual proximity to two schools and several soccer fields used by children. *Id.* at 1208-1209. The Eleventh Circuit ultimately held that the BZA's decision was supported by substantial evidence. *Id.* at 1208.

[9] This Court finds that the photo simulation, letters and e-mails from residents, and testimony given by residents at the public hearing, establishes substantial evidence of the visual impact that the cellular phone tower would have upon River Club. While there may be other evidence within the record, or other reasoning upon which the BOCC has relied, only a single ground for denial of an application for a permit is required. If any one ground provided by the local government is supported by substantial evidence, the denial is proper. *Cellular Telephone Co. v. Town of Oyster Bay*, 166 F.3d 490, 495 (2nd Cir.1999). “Nothing in the Telecommunications Act forbids local authorities from applying general and nondiscriminatory standards derived from their zoning codes, and ... aesthetic harmony is a prominent goal underlying almost every such code.” \*1365 *VoiceStream Minneapolis, Inc. v. St. Croix County*, 342 F.3d 818, 831 (7th Cir.2003) (quoting *Aegerter v. City of Delafield*, 174 F.3d 886, 891 (7th Cir.1999)).

The Court notes the analysis in *Omnipoint Communications, Inc. v. City of White Plains*, 430 F.3d 529 (2d Cir.2005). In *Omnipoint*, land was leased on a golf course bordering a residential neighborhood in hopes of constructing a one hundred and fifty foot (150#) tower disguised as an evergreen tree. *Id.* at 530. At the public hearing to determine whether a special exception permit from the City of White Plains should be issued, the City heard evidence that the tallest evergreen tree was fifty one feet (51') and the deciduous trees would further reveal the tower disguised as an evergreen tree during the winter months. *Id.* at 533. Based on these facts, the Court found that the City's Zoning Board could reasonably conclude (given express testimony to that effect) that the tower would be widely visible. *Id.* In addition, the Board received substantial evidence of the tower's adverse aesthetic impact. The Court had no difficulty concluding that the Board's rejection was based on reasonable and substantial evidence. *Id.*: “[W]e conclude that the Board has discretion to rely (as it did) on aesthetic objections raised by neighbors who know the local terrain and the sightlines of their own homes.” *Id.* at 534. While the tower proposed to be built by Vertex is not disguised as an evergreen tree, River Club residents have raised objections and concerns as to how the presence of a cell tower will have a negative aesthetic impact on their individual homes and their community as a whole. *AT & T Wireless PCS, Inc., supra*. The Court also notes that, in addition to the letters and e-mails, and the testimony given at the public hearing, the record includes a petition signed by River Club residents.

The Court also notes the analysis in *Michael Linet, Inc. v. Village of Wellington, Fla.*, 408 F.3d 757 (11th Cir.2005). In *Michael Linet*, Linet proposed building a 120 foot flagpole with a cellular communications antenna concealed inside. *Id.* at 760. Linet's proposal was not well received by the Village before constructing the pole. The residents' primary concern, voiced at a June 2003 meeting, was the impact the pole would have on the value of their property. *Id.* Residents testified that they would not have purchased their homes if the pole was present, and a local realtor testified the pole would adversely impact home resale values. *Id.* Another ancillary concern included the impact the pole might have in regard to its proximity to a middle school. *Id.* The Eleventh Circuit concluded that the district court held correctly that the Village's decision to deny Linet's permit was based on substantial evidence received at the June 2003 hearing. *Id.* at 762.

### 3. Property Values

After evaluating the evidence in this case based on standards established by the Eleventh Circuit, the Court finds that substantial evidence supporting the denial of Plaintiff Vertex's application is present. Although Plaintiff Vertex avers that the BOCC did not take property values into consideration, the record indicates that not only was such evidence before the BCCC, but also that the BOCC was instructed by Deputy County Attorney Robert Eschenfelder that property values may factor into the BOCC's decision-making process:

MR. ESCHENFELDER: To follow up on an earlier question about the property value situation, and clarify with Ms. Schenik, while it's the recommendation that this factor not be put into the Land Development Code, there are many Federal Court opinions that do indicate that a governing body can consider lowering the property values when looking at a cell tower installation,

\*1366 One of the key things that you would have to keep in mind though is, did the evidence that you hear today provide you with any factual evidence, as to property values in this particular neighborhood, as opposed to a more generic assertion that simply because towers are towers that they'll make—they make everybody's property value go down.

Did any real estate expert, or whatnot, testify that I have done a study in this particular neighborhood, and it is my expert opinion, as a realtor, that if the tower is put in that the property value would go down. That's the kind of evidence that you would want to look to, not more generic statements. It's riskier, I think, is what Ms. Schenik would tell you, and I would agree, to hang your hat solely on property values if you haven't heard any testimony about this particular neighborhood. Thank you.

(Dkt. 17-4, p. 217-18). The recommendation to the BOCC by Mr. Eschenfelder was a reflection of the established standard within the Eleventh Circuit. “No provision in the TCA forbids local governments from considering compliance with substantial federal regulations in deciding whether to grant or deny tower permits.” *Southeast Towers, LLC v. Pickens County, Ga.*, 625 F.Supp.2d 1293, 1302 (M.D.Ga.2008).

Vertex Development, LLC v. Manatee County, 761 F.Supp.2d 1348 (2011)

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The Court has carefully examined the record in this case. While there is evidence that the proposed cell tower would have no impact on the residential property values, there is also evidence that a cell tower would have a negative impact on residential property values. Patricia Petruff, Esq., on behalf of River Club Homeowners Association, appeared and offered evidence at the hearing of 12/3/2009. During her presentation to the BOCC, Ms. Petruff submitted three articles to the county clerk. (Ex. C-1, MC0818-MC0864). These articles were before the BOCC prior to the BOCC's adoption of Ordinance 09-69. Review of the video from the public hearing (E-1, Dkt. 13, Part 2 at 11:00) establishes the testimony of Patricia Petruff and her submission of articles pertaining to the diminution of property values due to cellular towers.

The articles submitted to the Clerk are the evidence, and speak for themselves. At the hearing, Ms. Petruff made a presentation to the BOCC based on the content of the articles. According to the testimony of Ms. Petruff during the public hearing before the BOCC, the first article, titled "Effect of Distance to Cell Phone Towers to House Prices in Florida", was a peer-reviewed article. Ms. Petruff testified that the article states: "Results of research show that prices of properties decrease by just over two percent on average after a tower [i]s built." The second article Ms. Petruff discussed was the article titled "Impact of Cellular Phone Based Station Towers on Property Values," which Ms. Petruff testified states that visual effects can still pose concern to residents. The third and final article about which Ms. Petra testified was titled "Impact of Wireless Towers on Residential Property Values." Ms. Petruff testified that the conclusion of this article is that proximity to a wireless tower needs to be considered as a negative amenity that may reduce property valuation. Based on the articles submitted to the Clerk by Ms. Petruff, as well as evidence offered by Plaintiff Vertex, there was evidence of the proposed tower's effect on property values, and evidence of the lack of effect the tower would have on property values, which was to be weighed by the BOCC, not this Court.

At the public hearing, two real estate professionals voiced their opposition to the tower, including David Di Girolamo's direct testimony, and the affidavit of Kathleen Schaefer, submitted to the BOCC by River Club resident Gerald Allen, who \*1367 spoke during the December 3, 2009, public hearing.

Licensed real estate agent David Di Girolamo testified at the December 3, 2009, hearing. Mr. Di Girolamo has been a River Club resident for eight years and is a Florida licensed real estate broker who testified that he has previously sold properties within River Club. (Dkt. 13, Exhibit E-1, Disk 1, Part 2, at 57:00). The crux of Mr. Di Girolamo's testimony concerned a potential buyer's demand for views, especially in upscale communities such as River Club. Mr. Di Girolamo testified that buyers in upscale communities typically know what they want and pay particular attention to the property views. While the demand of views differs depending on the individual desires of a potential buyer, as some may want waterfront, privacy of preserve, or a golf course, the demand and consequently the value is about equal (Dkt. 17-2, p. 40). Homes with power lines in the back yard, or another home invading the privacy of another, or the presence of a commercial property, significantly decrease the demand and value of a property. Mr. Di Girolamo then specifically addressed the impact of cell phone towers and stated that potential buyers have perceived concerns about health risks, and thus if you can see the tower it will drive down the demand and the value. As the focal point of River Club is the golf course, Mr. Di Girolamo testified that, even if the cell tower is not close to a property, the cell tower will still affect the property value, as [one] drive[s] down River Club Boulevard along tree lined streets and suddenly observe[s] a cell tower which appears out of place. At the conclusion of his testimony, Mr. Di Girolamo stated that, if he knew a cell tower would be constructed within River Club, he would never have purchased his home within River Club.

The second real estate professional, who provided a sworn affidavit, was Kathleen Schaefer. (Exhibit C-13). Ms. Schaefer's affidavit provides:

My name is Kathleen Schaefer. I live at 10317 Baltusrol Place in River Club. I have been a resident of East County for almost 13 years. I purchased a home in River Club in 2000. Both Homes are in very close proximity to the River Club Golf Course House.

For the past 10 years I have bought and sold investment properties in Manatee County for my own company. I currently own 5 of those properties consisting of 7 units and I rent them on an annual and seasonal basis. I have been a licensed Real Estate Agent in the state of Florida since 2005, and I am currently working for Exit Realty Signature Properties in Lakewood Ranch.

Instead of going on and on with numbers and figures that can all be manipulated and refuted depending on which side you are on I would like to speak to you about the perception of the buyer.

River Club, Braden Woods, Braden Pines, and the Sanctuary are neighborhoods where families purchase homes to live in. It is not an area of investment properties.

When families are shopping for their perfect home, perception of the neighborhood homes and people are paramount. Some will argue that a cell tower will change nothing. With my own personal feeling aside, purely based on market condition, I strongly disagree.

Our market works off a numbers game like any other business. You need "X" amount of customers to come through your store for one to make a purchase.

Currently, on average for every 10 showings you should have one contract. Due to current market conditions that number can fluctuate by neighborhood and condition of the house, but that is \*1368 basically what we are seeing in a sought after family neighborhood.

Here is where perception comes in. For me to get a contract on a home in close proximity to said cell tower, I need to bring through the door, 10 families who have no objection to a cell tower. The chance of me doing that on the first 10, is next to impossible. So lets say the first 5 don't care about the cell, and the next 5 people do.

That means I need to find 5 more people who don't care about the existence of the cell tower to come through that door in order to secure a contract. Using those numbers. I have to bring a minimum of 15 people through the door to get a contract.

Now that may sound like no big deal, however lets consider the current market conditions. Most people are selling because they have to, not because they want to. The available inventory is huge. If a home is selling on a short sale the price is already pretty low. If it is a bank owned, anything can happen on the pricing depending on how badly the bank needs to be ride of that property. On top of that by increasing the number of buyer who need to see the property you are increasing the time on the market. Depending on the seller, at some point

he will have to lower the price to bring more buyers through at a quicker pace.

Throw in a cell tower and now every buyer has cause to begin negotiations lower. Whether they care if the tower is there or not, it becomes a negotiating tool. If it was a buyers agent I would definitely use it to my advantage and IT IS A BUYERS MARKET!

You may say that is my opinion, however, I use a Short Sale negotiator to negotiate with the banks of behalf of my short sellers. Last month an incredibly low offer was submitted to a bank for approval on the short sale. They could not get the bank to accept it, so the buyer's realtor went out to the property and took a picture of a cell tower within blocks of the home. They submitted the photo to the bank and immediately the negotiations stopped and the bank accepted the offer. Why, because they know what a negative perception of a property can do to the sale of the home and they needed to secure the buyer to get that property off their books.

Greenbrook currently has in excess of 100 homes in foreclosure. Summerfield, Riverwalk and Lakewood Ranch Country Club have their own share of foreclosures and short sales as well.

Over the weekend a local paper printed an article about the struggles of the existing residents in Lakewood Ranch due to these distressed properties. The maintenance fees have to be paid by someone, or the residents that are left will either lose amenities or have to come up with the funds. Not to mention living near these unkept homes, which once again ruins the perception of a potential buyer. It is a downward spiral. By allowing the tower in a residential neighborhood in the East County you are opening the door for future installations of towers in all these ailing communities and the impact to perception and pricing would be devastating.

We are surrounded by an incredible number of ailing commercial properties that would give anything for the extra income. Some within less than a mile of our homes. This money could held the businesses and preserve the residential areas. Why are those areas not in the forefront of potential sites? The impact would be considerably less to local residential real estate market.

Make no mistake we are a long way out of this down market. Unemployment is rising putting more pressure

on people \*1369 to sell their homes. Along with that the FDIC has closed 124 banks across the country. From what I can find, at least 12 were in Sarasota/Bradenton area. All of those banks closed primarily because of defaulting residential real estate loans. The real estate has been absorbed by the government and will have to be released into the market at some point. Contrary to what you see on television many of the large brokerage firms have analysts following this trend and in the opinion of these professionals the future real estate market is not looking bright. When these properties are released from the gov't the stress on the pricing will be incredible. Considering Lakewood Ranch was a tremendous part of the building boom. How many of these houses are included in the gov't portfolio? We do not need a structure such as a cell tower to put any additional pressure on the current market prices. The market cannot handle it.

I would not have purchased my home if the Cell Tower was then existing in River Club because of its adverse effect on the marketability and resale value of my River Club home.

(Dkt. 13, C-13).

As previously cited, the Eleventh Circuit has held that aesthetic objections coupled with evidence of an adverse impact on property values or safety concerns can constitute substantial evidence. See *American Tower LP, supra*, Ms. Petruff testified as to the proposed tower's negative impact on property values, submitting to the clerk three articles relating to the effects of a cell phone tower and property values. Further, Mr. Di Girolamo testified that, in his experience as a licensed Florida real estate broker, cell phone towers decrease both a property's demand and value. Finally, Ms. Schaefer provided an affidavit outlining the current market conditions and, in her opinion, the additional pressure that would be on the market if a cell tower was constructed is something the market simply cannot handle. River Club residents also voiced an overwhelming opposition due to the tower's aesthetic impact as noted above. All of this evidence was available and before the BOCC at the time the BOCC adopted Ordinance 09-69 denying Plaintiff Vertex's application for a cell phone tower.

The Court finds that the aesthetic objections to the cell tower, coupled with evidence of the negative impact of the proposed cell tower on property values, constitute

substantial evidence within the written record to support the BOCC's denial of Plaintiff's application. Section 1, Findings of Fact, D., within Ordinance No. 09-69 states, "Based upon the evidence submitted into the public hearing record of the Planning Commission and the Board of County Commissioners, the Board of County Commissioners finds that the conditional use request does not comply with the criteria in Section 704.59 of the Land Development Code." (See additional findings of fact cited above).

#### 4. Alternative Sites

Aside from aesthetics and property values, the BOCC also took issue with the lack of evidence to demonstrate why other sites, which are already developed as non-residential, were not considered. Finding of Fact No. 6 states "The public hearing record does not sufficiently document the analysis by the applicant to demonstrate why other sites which are already developed as non-residential, commercial and industrial uses and which are currently visually impacted by tall structures could not be utilized for the telecommunication tower siting in this instance so as to require the location of the 150# high telecommunication tower on the Property, in reference to Section 704.59(3), LDC."

\*1370 During Plaintiff Vertex's presentation at the public hearing, Mr. Shon Sparks testified regarding the cell phone tower's proposed location. (E-1, Dkt. 13, Part 2 at 11:00). Mr. Sparks is a radio frequency engineer and gave testimony regarding T-Mobile's coverage objective. Two coverage maps, Exhibit B-9 and Exhibit B-10 (Dkt. 13), were submitted into the record depicting the level of coverage available with a tower located at State Road 70 ("SR-70") and at Vertex's proposed location within River Club. Exhibit B-11 (Dkt. 13) was also submitted into the record, depicting a "bird's-eye view" of other locations considered by T-Mobile, including a location at SR-70. Exhibit B-12 (Dkt. 13) is a coverage comparison between the River Club site and a SR-70 location. While Exhibit B-10 and Exhibit B-9 use a coverage level of -76dBm, the coverage comparison in Exhibit B-12 is a coverage level of -84dBm.

On behalf of Plaintiff Vertex, Mr. Sparks testified that a tower located at SR-70 does not support T-Mobile's coverage objective. (Dkt. 17-1, p. 25-29). Mr. Sparks did not testify that a tower could not be placed at SR-70, but only that a tower at SR-70 would not

support T-Mobile's coverage objective. When examining the coverage comparison contained within Exhibit B-12, the population count covered at -84dBm with a site at SR-70 would be 8,090.62 and the population count covered at the candidate site would be 10,596.33. The difference between the candidate site and a site at SR-70 is a population count of 2,505.71. As all these exhibits were made part of the record and were before the BOCC, substantial evidence exists that T-Mobile may reduce their current coverage gap by using an alternative site and has likely chosen River club as an optimal location.

Arthur Peters is a registered professional engineer in Florida, and testified after reviewing testimony and comments regarding the cell tower's proposed location. (Dkt. 17-3, p. 121-25). Mr. Peters testified that he has designed cellular systems around the world and within the United States. The crux of Mr. Peters' testimony was that other potential sites exist besides the candidate site located within River Club. Mr. Peters testified that when viewing Exhibit B-9 and B-10, the areas not shaded do not indicate that no cellular coverage is available in these areas, and that in some of the non-shaded areas, the cellular signal would be strong enough to penetrate buildings. Mr. Peters further testified that the signal found within the shaded areas produces nearly 100% reception, and that the signals found in the non-shaded areas are still very high. Mr. Peters opined that it would make more sense to place a tower to the North and South of River Club, which would provide better coverage in some of the gapped areas as compared to the single candidate location. Mr. Spark's and Mr. Peter's testimony was before the

BOCC. The weight the BOCC chose to give to either engineer's testimony is not a consideration properly before this court.

#### 5. Conclusion

After consideration of the entire record, the Court concludes that Defendant Manatee County is entitled to judgment as a matter of law pursuant to [Fed.R.Civ.P. 56\(c\)](#). This Court has considered only whether or not substantial evidence is present to support the decision of Defendant Manatee County. The photo simulation, residents' testimony, property value evidence, and testimony concerning alternative cell phone tower sites constitute substantial evidence within the record upon which the BOCC was entitled to base the BOCC's decision. The Court finds that there is substantial evidence contained within the record supporting **\*1371** the BOCC's adoption of Ordinance 09-69 for all the reasons set forth above. Accordingly, it is

**ORDERED** that Defendant's Motion for Summary Judgment (Dkt. 20) is **granted**, and Plaintiff's Motion for Summary Judgment is **denied**. The Clerk of Court shall enter a final judgment in favor of Defendant Manatee County, and against Plaintiff Vertex Development, LLC, and close this case.

#### All Citations

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**FROM: David Adams, Ph.D. ctrarcht@nccn.net**

**DATE: August 20, 2018**

### **Information and Documentation of Adverse Health and Property Effects from Cell Phone Towers/Antennas and Low-Frequency Electromagnetic Radiation**

To better inform decision-makers for relevant new legislation, new wireless antenna installation applications, etc., this document wants to present an accurate picture of the current “regulation” (rather, non-regulation) concerning known health and environmental impacts and a sampling of brief summaries of the evidence from scientific research on this matter (including negative effects on property values).

#### **The State of the Current Federal RFR Exposure Standards**

The adverse non-thermal biological and medical effects of low-frequency electromagnetic radiation (RFR, or Radio Frequency Radiation; microwave or “Wifi”) are well documented in tens of thousands of published scientific studies – far more thoroughly, in fact, than were the effects of asbestos, DDT, dioxins, tobacco, or PCBs. But they are not recognized by the Federal Communications Commission (FCC) in their 30-year-old exposure standards applicable only to thermal (heat) effects from temporary exposure to *high-frequency* electromagnetic radiation. For communications equipment, the federal Telecommunications Act of 1996 awarded authority over the environmental and health effects of RF radiation exclusively to the FCC, an agency with no environmental expertise and no biologists or medical scientists on staff, whose stated mission is not environmental protection, but the *promotion* of (especially wireless) communication technology and business. In response to challenges, the FCC has repeatedly told congress and the federal courts that it does not have expertise in RF field exposure health issues.

In official comments to the FCC about guidelines for evaluation of electromagnetic effects of RFR (FCC Docket ET 93-62, November 9, 1993), the Environmental Protection Agency (EPA) found that the FCC’s exposure standards are “serious flawed” (emrpolicy.org). The Food and Drug Administration (FDA) commented to the FCC on November 10, 1993, that “FCC rules do not address the issue of long-term, chronic exposure to radio frequency fields” (emrpolicy.org Exhibit 46).

“Safe’ levels were based on thermal heating standards, now inapplicable on the basis of more recent scientific research. The standards are nearly 30 years out of date, and the EPA office tasked to direct the human safety issues was eliminated due to budget cuts in the early 1980s. Furthermore, the standards in place do not address the potential effects of radiation on wildlife. No government agency currently monitors the rising background levels of electromagnetic radiation (EMF). Current safety standards assume that non-ionizing radiation is safe if the power is too weak to heat living tissue. However, since the 1980s, growing amounts of published research are showing adverse effects on both humans and wildlife far below a thermal threshold – usually referred to as “nonthermal effects,” especially under conditions of long-term, low-level exposure.”

U.S. Fish and Wildlife Service Briefing Paper, April 17, 2009:

<http://electromagnetichealth.org/pdf/CommTowerResearchNeedsPublicBriefing-2-409.pdf>

“The existing safety limits did not anticipate these kinds of technologies affecting the health of people living with and using wireless devices on a daily basis. (Biological) effects are now widely reported to occur at exposure levels significantly below most current national and international limits.”

David O. Carpenter, MD, Coeditor of The Bioinitiative Report, Director of the Institute for Health and the Environment, SUNY, Albany, NY.

In May 2011 the World Health Organization (WHO) International Agency for Research on Cancer (IARC) classified radiofrequency radiation as possibly carcinogenic to humans, based on an increased risk for glioma (brain cancer) – the same classification given to DDT, lead, chloroform, and asbestos. Based on research since 2011, many WHO-affiliated scientists have been calling for this rating to be upgraded to more definitely carcinogenic.

The decades of actively suppressed scientific findings and safety testing, corporate disinformation campaigns, and extensive governmental lobbying by the big wireless industry has been exposed in an article in the April 23, 2018 issue of *The Nation*: “How Big Wireless Made Us Think That Cell Phones Are Safe: A Special Investigation; The



disinformation campaign—and massive radiation increase—behind the 5G rollout” by award-winning investigative journalists Mark Hertsgaard and Mark Dowie.  
<https://www.thenation.com/article/how-big-wireless-made-us-think-that-cell-phones-are-safe-a-special-investigation/>

According to the exposure standards of OSHA (the federal Occupational Safety and Hazard Administration), determined by engineers for work on telecommunications equipment, magnetic fields above one gauss (or 1000 mG, i.e., milligauss) are dangerous. The FCC limit also is 1000 mG. By contrast, the 2012 *Bioinitiative Report* recommends a maximum of 1/1000th of what OSHA and the FCC allow. *The Bioinitiative Report* presents results of more than 1,800 scientific studies that document the effects of exposure to electronics, including cellular antennas, on DNA, memory, learning, behavior, attentions, sleep, cancer, Alzheimer’s, sperm damage, neurological diseases, allergies, autism, and more. (C. Sage and D. Carpenter, MD, *Bioinitiative Report* 2012; <http://www.bioinitiative.org>) The Seletun Statement, put forward by an international scientific panel that met in Seletun, Norway in 2009, also recommends a limit of 1.0 mG exposure (i.e., below 1,700  $\mu\text{W}/\text{m}^2$  vs. the FCC limit of 6 to 10 million  $\mu\text{W}/\text{m}^2$ ) – based on risk for leukemia, brain tumors, Alzheimer’s, sperm damage, and DNA strand breaks. Milligauss readings above 1.0 are especially hazardous for children, pregnant women, people with medical implants, and those with compromised health. Based upon the results of expert studies worldwide, a few other countries have determined that the maximum safe limits for RF radiation are as much as 5,000 times lower than the level permitted by the FCC.

RF signals can interfere with the functioning of medical implants such as cardiac pacemakers, insulin pumps, and deep brain stimulators. Furthermore, the negative biological effects are far more dangerous to children and pregnant women. “Children are disproportionately affected by environmental exposures, including cell phone radiation. The differences in bone density and the amount of fluid in a child’s brain compared to an adult’s brain could allow children to absorb greater quantities of RF energy deeper into their brains than adults.” Thomas K. McNerny, MD, FAAP, President of the American Academy of Pediatrics. From a 12/12/2012 letter to Representative Dennis Kucinich in support of the Cell Phone Right to Know Act.

### **What Distance from a Cellular Antenna Is Safe to Live and/or Work? A Sampling of the Evidence**

This is a brief review with concise summaries from selected examples of the many scientific studies researching this question (with references).

- People who lived within *350 meters (1148 feet)* of a cellular antenna for more than a decade experienced 4.15 times as much cancer. Among women, the increase was 10 times.

R. Wolf and D. Wolf, “Increased incidence of cancer near a cellphone transmitter station,” *International Journal of Cancer Prevention*, vol. 1, no. 2 (2004). [http://www.powerwatch.org.uk/news/20050207\\_israel.pdf](http://www.powerwatch.org.uk/news/20050207_israel.pdf)

- Living within *400 meters (1312 feet)* of a cell tower increased the risk of developing cancer by 300%, as shown by a 10-year German study of nearly 1000 persons from 1994 to 2004.

Horst Eger, Klaus Uwe Hagen, Birgitt Lucas, Peter Vogel, Helmut Voit, “The Influence of Being Physically Near to a Cell Phone Transmission Mast on the Incidence of Cancer,” English translation of: Eger, H., Hagen, K.U., Lucas, B. et al. (2004), Einfluss der räumlichen Nähe von Mobilfunksendeanlagen auf die Krebsinzidenz, Wissenschaftliche Originalarbeit. *Umwelt-Medizin-Gesellschaft*, vol. 17, no. 4 (2004): 326-335.

- Although the carcinogenic effect of RFR is typically manifested after long-term exposure (up to 10 years and more), even a year of operation of a powerful cell-phone base station (antenna) resulted in a dramatic increase of cancer incidence among population living nearby. In addition, model studies in rodents unveiled a significant increase in cancer onset after 17-24 months of RFR exposure both in tumor-prone and intact animals. Several kinds of stress impacts on living cells were also identified.

I. Yakymenko, E. Sidorik, S. Kyrylenko, V. Chekhun, “Long-term exposure to microwave radiation provokes cancer growth: evidences from radars and mobile communication systems,” *Exp Oncology*. vol. 33, no. 2 (June 2011): 62-

70. <http://exp-oncology.com.ua/article/1845/long-term-exposure-to-microwave-radiation-provokes-cancer-growth-evidences-from-radars-and-mobile-communication-systems>

- This study found that 8 of 10 epidemiological studies dealing with health effects near cell phone base stations reported increased prevalence of adverse neurobehavioral symptoms or cancer in populations living at distances up to *500 meters (1640 feet)* from base stations. None of the studies reported exposure above accepted international guidelines, suggesting that current guidelines may be inadequate in protecting the health of human populations.

Vini G Khurana, Lennart Hardell, Joris Everaert, Mikko Ahonen, "Epidemiological Evidence for a Health Risk from Mobile Phone Base Stations." *International Journal of Occupational and Environmental Health*, vol. 16, no. 3 June 2010):263-7.

[https://www.researchgate.net/publication/45387389\\_Epidemiological\\_Evidence\\_for\\_a\\_Health\\_Risk\\_from\\_Mobile\\_Phone\\_Base\\_Stations](https://www.researchgate.net/publication/45387389_Epidemiological_Evidence_for_a_Health_Risk_from_Mobile_Phone_Base_Stations)

- People living within *200 to 500 feet* of a cellular antenna (base station) experienced fatigue, headache, sleep disruption, irritability, depression, decreased libido, memory loss, dizziness, nausea, increased risk of cancer, tremors, loss of appetite, rashes, visual disruptions, reproductive system disruptions, increases in the permeability of the blood-brain barrier, and overall discomfort.

B Levitt and H. Lai, "Biological effects from exposure to electromagnetic radiation emitted by cell tower base stations and other antenna arrays," *Environmental Reviews*, vol. 18 (2010): 369-395; and H.P. Hutter et al., "Mobile phone base stations: Effects on health and well being," *Pathophysiology*, vol. 16, nos. 2-3 (2009): 123-135.

[http://www.magdahavas.com/wordpress/wp-content/uploads/2010/11/Blake\\_Levit-Henry\\_Lai.pdf](http://www.magdahavas.com/wordpress/wp-content/uploads/2010/11/Blake_Levit-Henry_Lai.pdf)

- 3.48% of people who lived within *500 meters (1,640 feet)* of a cellular base station/antenna experienced deaths by neoplasia (cancerous tumors). Outside of this area, deaths by neoplasia were only 0.58%.

A. C. Dode et al., "Mortality by neoplasia and cellular telephone base stations in the Belo Horizonte municipality, Minas Gerais state, Brazil," *Science of the Total Environment*," vol. 409. No. 19(2011)' 3649-3665.

<https://www.sciencedirect.com/science/article/pii/S0048969711005754>

- A clustering and significant increase of childhood leukemia cases was found within *2.6 miles* of low-frequency radio towers in Hawaii.

Maskarinec G1, Cooper J, Swygert L. "Investigation of increased incidence in childhood leukemia near radio towers in Hawaii: preliminary observations," *Journal of Environmental Pathology, Toxicology, and Oncology*. Vol.13, no.1 (1994):33-37. <http://www.ncbi.nlm.nih.gov/pubmed/7823291>

- Studies of 7 cancer clusters around cell-phone towers in England by Dr. John Walker showed a cluster of 31 cancer cases around a single street in the village of Coleshill, Warwickshire. A quarter of the 30 staff at a special school within sight of the 90-foot high cell-phone tower had developed tumors since 2000.

Reported in: Daniel Foggo, "Cancer clusters at phone masts," *The Sunday Times*, April 22, 2007;

<http://www.avaate.org/spip.php?article700>

- In an 11-year study (1998-2009) of multiple rooftop cellular antennas installed on a 10-floor condominium building in Naha City, Okinawa, Japan involving medical exams and interviews of 107 residents, it was found that various health symptoms (tinnitus, fatigue, eye pain and sight deterioration, sleep problems, dizziness, headache, nosebleeds, numbness, etc.) radically decreased after the removal of the antennas.

<https://elettrosensibili.wordpress.com/2015/10/14/significant-decrease-of-clinical-symptoms-after-mobile-phone-base-station-removal-signifikanter-ruckgang-klinischer-symptome-nach-senderabbau>

- A study was conducted on 85 inhabitants living in a building under a cell-phone base station antenna and 48 persons opposite the street from the station, with a control group of 80 matched participants. The prevalence of neuropsychiatric complaints such as headaches, memory changes, dizziness, tremors, depressive symptoms, and sleep disturbances were significantly higher among exposed inhabitants than controls. The exposed inhabitants also exhibited a significantly lower performance than controls in tests of attention and short-term auditory memory.

Abdel-Rassoul, G., Abou El-Fateh, O., Abou Salem, M. et al. (2007), Neurobehavioral effects among inhabitants around mobile phone base stations. *Neurotoxicology*, 28(2), 434-440.

- Long-term (6 years) exposure to cellular antennas and mobile phones reduced the bodily levels of the human hormones adrenocorticotrophic hormone, cortisol, thyroid hormones, and testosterone – also serum progesterone (prolactin) in young females.

E.F.Eskander, et al., "How does long term exposure to base stations and mobile phones affect human hormone profiles?" *Clinical Biochemistry*, vol. 45, nos. 1-2 (2012): 157-161.  
<http://www.sciencedirect.com/science/article/pii/S0009912011027330>

- After installation of a new cellular antenna in a German village, stress system hormones were chronically disrupted over the next 18 months, which can lead to major health problems in the long term. There were various short-term effects such as sleep problems, headaches, dizziness, concentration problems, and allergies.

K. Buchner and H. Eger, "Changes of clinically important neurotransmitters under the influence of modulated RF fields: A long-term study under real-life conditions," English translation of: "Veränderung klinisch bedeutsamer Neurotransmitter unter dem Einfluss modulierter hochfrequenter Felder – Eine Langzeiterhebung unter lebensnahen Bedingungen (Wissenschaftlicher Originalbeitrag)," *Umwelt-Medizin-Gesellschaft*, vol. 24, no. 1 (2011): 44-57.

- After 5 generations of exposure to RF radiation from cell towers (less than one microwatt per centimeter squared), mice become irreversibly infertile.

I. N. Magras and T. D. Xenos, "RF radiation-induced changes in the prenatal development of mice," *Bioelectromagnetics*, vol. 18, no. 6 (1997): 455-461.

- A laboratory-conditions Netherlands study mimicking common residential exposure to third-generation (UMTS) cell towers confirmed the "microwave syndrome" [EHS] that at least 23 teams of scientists in 16 countries have reported to be widespread in the vicinity of cell towers. Symptoms after 35 minutes of RFR exposure included dizziness, nausea, headaches, shortness of breath, numbness and tingling, inability to concentrate, fatigue weakness, muscle pains, heart palpitations, and chest pain.

Zwamborn, Vossen, van Leersum, et al. "Effects of global communications system radiofrequency fields on well being and cognitive functions of human subjects with and without subjective complaints," *TNO Physics and Electronics Laboratory Report*, FEL-03-C148 (2003), The Hague.

- Of young adults in their 20s and 30s, 53% who lived within 300 meters (984 feet) of a cell tower had disturbed sleep, compared with only 12.5% who did not live near a cell tower. 81.4% had fatigue, compared with 25% of those with no tower nearby. 57.6% had headaches, compared with 18.2% of those with no tower nearby.

Santini, R., Santini, P., LeRuz, P., Danze, J. M., and Seigne, M., "Survey study of people living in the vicinity of cellular phone base stations." *Electromagnetic Biology and Medicine* vol. 22 (2003): 41-49, Available online at [www.uergerwelle.de](http://www.uergerwelle.de)

- This study found that symptoms such as headache, fatigue, and difficulty in concentration were approximately 15% more common in people with higher potential exposures to radiation from nearby base stations (cell towers within 24-600 meters in a rural area and 20-250 meters in an urban area), and that the association remained

significant after adjustment for various possible confounding factors, including regular personal use of mobile phones.

Hutter, H-P, Moshammer, H, Wallner, P. et al. "Subjective symptoms, sleeping problems, and cognitive performance in subjects living near mobile phone base stations," *Occup Environ Med* 2006 63307-313.313.  
<https://www.ncbi.nlm.nih.gov/pubmed/16621850>

- The Military Center for Radiation Safety in Poland studied the cancer death rates for all career military personnel (approx 128,000 persons each year) for the 14-year period of 1971-1985. The study revealed that persons occupationally exposed to RF emissions were nearly twice as likely to develop brain tumors, 13.9 times more likely to develop chronic myelocytic leukemia, 8.62 times more likely to develop acute myeloblastic leukemia, and 5.82 times more likely to develop non-hodgkin lymphomas.

Stanislaw Szmigielski, "Cancer morbidity in subjects occupationally exposed to high frequency (radiofrequency and microwave) electromagnetic radiation," A Collection of Papers Presented at The International Conference on the Effect of the Radio Frequency Electromagnetic Radiation on Organisms, *Science of The Total Environment*, vol. 180, no. 1 (February 2, 1996): 9-17.

#### **A Few Selected Additional Research Studies of RFR/Microwave/Wireless Human Health Impacts**

- In a partial, peer-reviewed report published May 26, 2016, of a carefully designed, 15-year, \$25-million controlled clinical trial conducted by the U.S. National Toxicology Program (NTP) of the National Institutes of Health (from a 1999 request by the U.S. Food and Drug Administration [FDA]), thousands of rats and mice were exposed from in utero to death to full-body cell-phone radiation (CDMA and GSM) for roughly nine hours each day. The results were that a statistically significant percentage (ranging as high as 7.7%) developed either brain cancer (gliomas) and/or heart cancer (schwannomas), while none of the rodents in the control groups developed any cancers. The report notes that "even a very small increase in the incidence of disease resulting from exposure to RFR could have broad implications for public health." A meeting of the Bioelectromagnetics Society felt that this is the largest and most comprehensive study in animals exposed to cell phone radiation to date and that the results from this study should trump all other animal carcinogenicity studies of RFR.

Michael Wyde, Mark Cesta, Chad Blystone, Susan Elmore, Paul Foster, Michelle Hooth, Grace Kissling, David Malarkey, Robert Sills, Matthew Stout, Nigel Walker, Kristine Witt, Mary Wolfe, John Bucher "Report of Partial Findings from the National Toxicology Program Carcinogenesis Studies of Cell Phone Radiofrequency Radiation in Hsd: Sprague Dawley SD rats (Whole Body Exposures)."  
<http://biorxiv.org/content/early/2016/05/26/055699>

- Similarly, researchers with the renowned Ramazzini Institute (RI) in Italy announced in April 2018 that a large-scale lifetime study of 2,448 lab rats exposed to environmental levels of cell tower radiation 19 hours a day developed cancerous tumors. The RI study of cell tower radiation also found increases in malignant brain (glial) tumors in female rats and precancerous conditions including Schwann cells hyperplasia in both male and female rats. The exposures mimicked base station emissions like those from cell tower antennas, and exposure levels were far less than those used in the NTP studies of cell phone radiation (and were below U.S. FCC limits).

L. Falcioni, L. Bua, E.Tibaldi, M. Lauriola, L. De Angelis, F. Gnudi, D. Mandrioli, M. Manservigi, F. Manservigi, I. Manzoli, I. Menghetti, R. Montella, S. Panzacchi, D. Sgargi, V. Strollo, A.Vornoli, F. Belpoggi, "Report of final results regarding brain and heart tumors in Sprague-Dawley rats exposed from prenatal life until natural death to mobile phone radiofrequency field representative of a 1.8 GHz base station environmental emission" *Environmental Research* [<http://ehtrust.org/wp-content/uploads/Belpoggi-Heart-and-Brain-Tumors-Base-Station-2018-First-page-.pdf>]

- Cell-phone radiation can cause breaking of double-strands of DNA into fragments. If the body's repair systems can't keep up with these breaks, cancer and birth defects can result.

A. Campisi, et al., "Reactive oxygen species levels and DNA fragmentation on astrocytes in primary culture after acute exposure to low intensity microwave electromagnetic field," *Neuroscience Letters* vol. 473 (2010): 52-55; and L.R. Lopes dos Santos, A.D. Tavares Jr, and I. Felzenszwalb, "The effect of electromagnetic field exposure on the formation of DNA lesions," *Redox Report: Communications in Free Radical Research* vol. 5, no. 5 (2000): 299-301.

- Studies have found that RFR exposure can remove calcium ions (positively charged calcium ions) from cell membranes in the brain. Loss of calcium ions destabilizes the membrane and can have serious metabolic and neurological consequences. The brain may become hyperactive and overloaded, leading to loss of concentration, ADHD, damage to DNA (causing loss of fertility and increased risk of cancer), and digestive enzymes from lysosomes. Membrane leakage can also open the blood-brain barrier and other protective barriers, leading to Alzheimer's, dementia, asthma, allergies, and various autoimmune disorders.

S. M. Bawin et al., "Effects of modulated VHF fields on the central nervous system," *Academy of Science*, 247 (1975): 74-81; N. D. Volkow et al., "Effects of Cell Phone Radio frequency Signal Exposure on Brain Glucose Metabolism," *Journal of the American Medical Association*, vol. 305 no. 8 (2011): 808-813; R.C. Beason and P. Semm, "Responses of neurons to an amplitude modulated microwave stimulus," *Neuroscience Letters*, vol. 333 (2002): 175-178; and J.F. Krey and R.F. Dolmetsch, "Molecular mechanisms of autism: A possible role for Ca<sup>2+</sup> signaling," *Current Opinion in Neurobiology*, vol. 17 (2007): 12-119.

- RFR exposure activates voltage-gated calcium channels. This leads to increased calcium levels within cells, which leads to the production of peroxynitrite. Peroxynitrite is at the root of most inflammatory diseases, including neurodegenerative and cardiovascular diseases, migraines, and allergies.

M Pall, "Electromagnetic fields act via activation of voltage-gated calcium channels to produce beneficial or adverse effects," *Journal of Cellular and Molecular Medicine*, 6-26-2013.

- Numerous animal studies have shown that changes in magnetic field exposure (such as RFR transmissions) reduce production of melatonin, a sleep hormone and important anti-oxidant.

A. Lerchi, et al., "Pineal gland 'magnetosensitivity' to static magnetic fields is a consequence of induced electric currents (eddy currents)," *Journal of Pineal Research*, vol. 10 (1991): 109-116.

- This important 2015 review of existing studies on RFR effects was published by the National Academy of Sciences in the Ukraine, Indiana University, and the University of Campinas in Brazil. Based on 93 out of 100 peer-reviewed studies, it concluded that low-intensity RFR is an oxidative agent for living cells with a high pathological potential. The oxidative stress induced by RFR exposure explains a range of RFR health impacts, both cancer and non-cancer illnesses. In addition to chronicling illnesses, this study provides at least 6 different biological mechanisms that explain these RFR effects in the body.

Igor Yakymenko<sup>1</sup>, Olexandr Tsybulin<sup>2</sup>, Evgeniy Sidorik<sup>1</sup>, Diane Henshel<sup>3</sup>, Olga Kyrylenko<sup>4</sup> and Sergiy Kyrylenko<sup>5</sup> "Oxidative mechanisms of biological activity of low-intensity radiofrequency radiation," *Electromagnetic Biology and Medicine* (July 2015)  
<http://nebula.wsimg.com/107f00a88ae36803a132e3ca6c222157?AccessKeyId=045114F8E0676B9465FB&disposition=0&alloworigin=1>

- This technical and critical examination of 16 expert cytogenetic monitoring studies performed around the world confirmed that 13 of the 16 independent studies showed evidence that RFR-exposed individuals suffered genetic damage. "A significant increase in chromosome breaks. . . was reported in all individuals."

L. Verschaeve, "Genetic damage in subjects exposed to radiofrequency radiation," *Mutat Res.* vol. 681, no. 2-3 (Mar-June 2009):259-270.

- Three scientists who work for the California Department of Health Services were directed to study whether electro-magnetic fields (EMFs) were associated with health problems. The three scientists unanimously concluded in 2002 that the likelihood of a causal relationship between EMFs and childhood leukemia is ninety five percent

(95%). "To one degree or another, all three of the DHS scientists are inclined to believe that EMFs can cause some degree of increased risk of childhood leukemia, adult brain cancer; Lou Gehrig's Disease, and miscarriage."

"Executive Study of *The California EMF Risk Evaluation for Policymakers and The Public*" (2002)  
[http://www.bcuc.com/Documents/Proceedings/2006/DOC\\_10743\\_Exhibit%20c03-49.pdf](http://www.bcuc.com/Documents/Proceedings/2006/DOC_10743_Exhibit%20c03-49.pdf)

### **A Sampling of Documentation of Adverse Impacts on Wildlife and the Natural Environment from Prolonged Exposure to Low-Frequency Electromagnetic Radiation**

The following is scientific documentation supporting that an Environmental Impact Report (EIR) should be performed to better evaluate the potential effects of new exposure to radiofrequency radiation (RFR), such as that from installation of new antennas and towers.

#### **Preliminary Explanation of Radio-Frequency Radiation (RFR) Effects on Wildlife**

All plants and animals, as well as humans, have adapted to the earth's electromagnetic fields, which include a direct current (DC) magnetic field, a DC electrical field, and low-frequency Schumann Resonances (natural fields that are both electric and magnetic, caused by the geometry of the earth's surface and the ionosphere near the top of the atmosphere).

To navigate in relation to these fields and to control their immune systems, birds and bees use magnetically sensitive substances called cryptochromes. These are protein pigments found in virtually all animals, plants, and many bacteria. Cryptochromes measure light to control and reset animals' and plants' biological clocks. Some animals also use cryptochromes to sense (or "see") the direction of the earth's magnetic field. Cryptochromes are badly impaired by human-made oscillating electro-magnetic fields, disrupting insects' and animals' solar and magnetic navigation abilities, likely leading to results such as bee colony collapse, loss of migratory birds and butterflies, and a weakening of the immune system. For example, radio-frequency radiation (RFR) can blot out a bird's perception of the earth's field, causing the bird (or insect) to fly in the wrong direction, and also disrupt a bird's internal clock based on the sun's changing position. Birds often leave the areas for many hundreds of feet around cell towers and antennas. Studies have shown that the hollow tubes of bird's feathers act as "aerials" for such radiation.

Daily Circadian metabolic rhythms of numerous animals are also driven by cryptochrome-containing internal clocks, especially in relation to dawn and dusk. Circadian rhythms control the production of melatonin (a sleep hormone); at night, they divert metabolic resources to bodily repair and immune-system strengthening. In humans reduced melatonin production would result in tiredness during the day and poor sleep at night, among other effects. Because it is supported by melatonin, the immune system may never be able to summon the great energy sometimes required to overcome pathogens or destroy developing cancer cells before they get out of control, leading to various diseases.

The following categorized published research studies support the above and are listed with brief summary comments followed by documentation of verifying research studies:

#### *GENERAL*

- A 2018 analysis of 97 peer-reviewed studies by a scientific team with the EKLIPSE project (funded by the European Union) concluded that electromagnetic radiation (EMR) fields emitted by power lines, WiFi, broadcast and cell towers pose a "credible" potential risk to insect and bird orientation and to plant health, and that 5G (fifth generation cellular technology) could cause greater harm. The report concluded that:
  - \* EMR represents a potential risk to the orientation or movement of invertebrates and may affect insect behavior and reproduction;
  - \* bird orientation can be disrupted by weak magnetic fields in the radiofrequency range, and the same may be true for other vertebrates including mammals; and
  - \* EMR exposure may affect plant metabolism due to production of reactive oxygen species often resulting in reduced plant growth.

\* Moreover, there is "an urgent need to strengthen the scientific basis of the knowledge on EMR and their potential impacts on wildlife."

For more information, see: [http://www.eclipse-mechanism.eu/emr\\_conference](http://www.eclipse-mechanism.eu/emr_conference); Malkemper EP, Tschulin T, VanBergen AJ, Vian A, Balian E, Goudeseune L (2018). The impacts of artificial Electromagnetic Radiation on wildlife (flora and fauna). Current knowledge overview: a background document to the web conference. A report of the EKLIPSE project. <http://bit.ly/Eklipseoverview>; Goudeseune L, Balian E, Ventocilla J (2018). The impacts of artificial Electromagnetic Radiation on wildlife (flora and fauna). Report of the web conference. A report of the EKLIPSE project. <http://bit.ly/EKLIPSEconfreport>

- RFR fields emitted by cellular antennas cause the decline of animal populations and deterioration of plant health: Animal effects include reduction in natural defenses, reproduction problems, adversarial behavior.

A Balmori, "Electromagnetic pollution from phone masts. Effects on wildlife," *Pathophysiology* (2009).

#### *BIRDS*

Typical effects of radiation from cellular communication antennas on resident, breeding, and migratory birds: site abandonment, feather deformation, locomotion problems, weight loss, weakness, reduced survivorship and death.

The U.S. Fish and Wildlife Service continues to suggest to the Federal Communications Commission (FCC) and to Congress the pressing need for studies based on cumulative negative effects of RFR exposure on migratory birds under the National Environmental Policy Act.

Manville, A.M., II. 2007a. Comments of the U.S. Fish and Wildlife Service submitted electronically to the FCC on 47 CFR Parts 1 and 17, WT Docket No. 03-187, FCC 06-164, Notice of Proposed Rulemaking, "Effects of Communication Towers on Migratory Birds." February 2, 2007. 32 pp.

Manville, A.M., II. 2007b. U.S. Fish and Wildlife concerns over potential radiation impacts from cellular communication towers on migratory birds and other wildlife- research opportunities. Invited Presentation to "Congressional Staff Briefing on the Environmental and Human Health Effects of Radiofrequency (RF) Radiation," House Capitol 5, Washington, DC. 16 page PowerPoint presentation. May 10, 2007.

Citing a variety of scientific research, the U.S. Department of the Interior in February of 2014 called on the National Telecommunications and Information Administration of the U.S. Department of Commerce to formulate or modify policies and procedures for cellular communications towers so that they are in conformity with Executive Order 13186 Responsibilities of Federal Agencies to Protect Migratory Birds and do not threaten from the towers' emissions of RFR the 241 species of endangered or threatened U.S. birds.

In 2003 three conservation organizations filed a lawsuit against the Federal Communications Commission ("FCC"). The groups, Forest Conservation Council, American Bird Conservancy, and Friends of the Earth, sought to enjoin the FCC from issuing any new licenses for the building of communication towers in the Gulf Coast region until their impact on migratory birds has been fully assessed and mitigated.

The suit cited violations by the FCC of the Migratory Bird Treaty Act, National Environmental Policy Act ("NEPA"), and Endangered Species Act ("ESA") in the deaths of thousands of migrating birds at towers along the Gulf Coast. <http://electromagnetichealth.org/pdf/CommTowerResearchNeedsPublicBriefing-2-409.pdf>

- Among 15 species of wild birds, breeding failures and population declines were significantly more common within 200 meters (656 feet) of a cell tower and in areas where measured levels of microwave radiation were high. A. Blamori Martinez, "Birds and mobile telephony. Preliminary results of the effects of electromagnetic waves on urban fauna," *El Ecologista* vol. 36 (2003): 40-42. Available online at [www.buergerwelle.de](http://www.buergerwelle.de).

- Experimenting on chickens, pigeons, and seagulls, Canada's National Research Council found that most birds collapsed in distress within seconds of being exposed to microwave radiation of moderate intensity – but not if they were defeathered, since feathers act as receiving aerials for microwave radiation. J.A. Tanner, C. Romero-Sierra, S. JK. Davie, "Non-thermal effects of microwave radiation on birds,"

Nature vol. 216 (1967): 1139; and J. Bigu del Blanco and C. Romero-Sierra, "Bird feathers as dielectric receptors of microwave radiation," National Research Council, DME Control Systems LTR-CS-89, January 1973.

- 40% of established white stork nests within 200 meters (656 feet) of cellular antennas had no chicks, while only 3.3% of nests beyond 300 meters (984 feet) had no chicks. The storks within 200 meters often failed to build nests, fought for sticks, and had chicks who frequently died.

A. Balmori Martinez, "Possible effects of electromagnetic fields from phone masts on a population of white stork (*Ciconia ciconia*)," *Electromagnetic Biology and Medicine*, v. 24 (2005): 109-119.

\* There are strong negative correlations between the amount of radiation presence (both in the 900 and 1800 MHz frequency bands, used for cell phones) and the presence of male house sparrows. In areas with high electric field strength values, fewer house sparrow males were observed. Long-term exposure to higher RFR levels affected bird abundance or bird behavior in this species.

Everaert, J., and D. Bauwens. "A possible effect of electromagnetic radiation from mobile phone base stations on the number of breeding House Sparrows (*Passer domesticus*)," *Electromagnetic Biology and Medicine* 26 (2007):63-72; and Balmori, A., and O. Hallberg, "The urban decline of the House Sparrow (*Passer domesticus*): a possible link with electromagnetic radiation," *Electromagnetic Biology and Medicine* 26 (2007):141-151.

\* Daily RFR exposure of chicken embryos for 4 days resulted in a decrease in production of stress-response proteins (HSPs) that protect cells in the body against lack of oxygen and decreased protection against ultraviolet radiation – both of which could increase the probability of cancer and other diseases.

A. N. DiCarlo, F. White, P. Guo, P. Garrett, and T. Litovitz, "Chronic electromagnetic field exposure decreases HSP70 levels and lowers cytoprotection," *Journal of Cellular Biochemistry* 84 (2002): 447-454.

- Robins can navigate in the earth's magnetic field if they receive light from wavelengths absorbed by cryptochromes. This study explored how the human-made frequencies between 01 and 10 MHz at field strengths as little as 0.085 mT (about 500 times weaker than the earth's magnetic field) made the birds unable to respond to the earth's magnetic field. T. Ritz et al. "Resonance effects indicate radical pair mechanism for avian magnetic compass," *Nature*, vol. 429 (5/13/2004): 177-180.

- Documentation of lethal effects of RFR on chicken embryos:

A. Di Carlo, et al. "Chronic electromagnetic field exposure decreases HSP70 levels and lowers cytoprotection," *Journal of Cellular Biochemistry*, v. 84 (2001): 447-454.

\* Longcore, T., C. Rich, P. Mineau, B. MacDonald, D.G. Bert, L.M. Sullivan, E. Mutrie, S.A. Gauthreaux, Jr., M.L. Avery, R.C. Crawford, A.M. Manville, II, E.R. Travis, and D. Drake, "Avian mortality at communication towers in the United States and Canada: which species, how many, and where?" *Biological Conservation* vol. 158 (2013): 410-419.

## INSECTS

In a May 2009 report the U.S. Fish and Wildlife Service urged Congress to investigate the potential relationship between wireless devices and honeybee colony collapse.

\* Bees are positively charged, flowers negatively charged (2 studies). RFR exposure disturbs the natural orientation and navigation mechanisms of bees and other insects, who use the earth's magnetic field and light energy to orient and navigate. It makes them restless, develop an urge to swarm, increasingly aggressive, and colony collapse in 62.5% of apiaries. Ulrich Warnke, *Bees, Birds and Mankind: Effects of Wireless Communication Technologies* (Kentum, 2009) ; and F. Ruzicka, "Schäden durch elektrosmog," *Bienenwelt* 10 (2003): 34-35; and 2 additional published studies.

Studies performed in Europe have documented navigational disorientation, lower honey production, and decreased bee survivorship in honeybees due to exposure to RFR from a cell tower within 500 meters (1,635 ft) and 800 meters (2,616 feet).

Harst, W., J. Kuhn, and H. Stever. "Can electromagnetic exposure cause a change in behaviour? Studying possible non-thermal influences on honey bees – an approach within the framework of



educational informatics," *Acta Systemica-IIAS International Journal* vol. 6, no. 1 (2006):1-6; U. Warnke, "Effects of Electric Charges on Honeybees," *Bee World* vol. 57, no. 2 (1976): 50-56; and Kimmel, S., J. Kuhn, W. Harst, and H. Stever, "Electromagnetic radiation: influences on honeybees (*Apis mellifera*)," *Institute Environmental Sciences, Institute Science and Science Education, and Institute Educational Informatics, Univ. Koblenz-Landau/Campus Landau, Germany* (2006): 6 pp.

\* Exposure to electromagnetic radiation from DECT phone towers (similar to cell phone towers) had deleterious effects on the rate of honeybee egg laying, return to hive, and honey production

Harst, Wolfgang, et al., "Can Electromagnetic Exposure Cause a Change in Behaviour? Studying possible non-thermal influences on honey bees." Institute of Science and Science Education (ISSE), Department of Physics, University of Koblenz-Landau/Campus, Landau, Germany. *ACTA SYSTEMICA - IIAS International Journal* (2006) 6(1): 1-6.

\* RFR induces ants to abandon nests and relocate, change speed and foraging behavior, become disoriented, have difficulty moving their legs, or die.

Marie-Claire Cammaerts and Olie Johansson, "Ants can be used as bio-indicator to reveal biological effects of electromagnetic waves from some wireless apparatus," *Electromagnetic Biology and Medicine*, 8/30/2013.

• The construction of combs and the homing capability of bees change for the worse if the bees are subjected to magnetic fields.

C. Hsu, F. Ko, C. Li, J. Lue, "Magnetoreception System in Honeybees (*Apis mellifera*)," *PLoS ONE*, vol. 2, no. 4 (2007): e395.

#### FROGS

\* Frogs within 140 meters from a cellular antenna had a mortality rate of 90%, compared to 4.2% for shielded frogs.

A. Balmori and C. Navarra, "Mobile phone mast effects on common frog (*Rana temporaria*) tadpoles; the city turned into a laboratory," *Electromagnetic Biology and Medicine*, v. 29 no. 1-2 (2010): 31-35, 59.

\* Radio-frequency radiation can alter a frog's heart rhythm – and even stop it at only 0.6 microwatts per square centimeter, 1600 times less than the current FCC guideline for public exposure to microwave radiation.

A. H. Frey et al., "Neural function and behavior: Defining the relationship," *Annals of New York Academy of Science*, v. 247 (1975): 433.

#### TREES AND OTHER PLANTS

• Exposure of urban trees to RFR causes leakage of materials from vacuoles, which contain toxic materials and digestive enzymes normally used to digest and recycle waste. These enzymes include DNase, which destroys DNA, which can lead to mutations, loss of cellular function, and possible cell death. Other results are cancer-like growths under tree bark (phloem nodules), split bark, and premature shedding of leaves and fruit.

Andrew Goldsworthy, "Why Our Urban Trees are Dying" (2011):

<http://www.mastsanity.org/health/research/299-why-our-urban-trees-are-dying-by-andrew-goldsworthy-2011.html>

• A 2010 study at Wageningen University in the Netherlands investigating increasingly common urban tree symptoms such as bleeding bark fissures, death of parts of leaves, and abnormal growth, found a 60% increase in signs of radiation sickness (including a "lead-like shine" on leaves as a sign of near death) from 2005 to 2010. [www.antennebureau.nl/actueel/nieuws/2010/eerste-indruk-kennisplatform-onderzoek-naar-bomen-en-wifi-zendesignalen](http://www.antennebureau.nl/actueel/nieuws/2010/eerste-indruk-kennisplatform-onderzoek-naar-bomen-en-wifi-zendesignalen); reported in Dan Nosowitz, "Wi-Fi Radiation Is Killing Trees, New Study Finds," *Popular Science*, posted November 22, 2010: <http://www.popsci.com/technology/article/2010-11/wi-fi-radiation-killing-trees>.

\* Growth rates of plants can be increased or decreased by RFR exposure:

I.Y. Petrov et al., "Possibility of correction of vital processes in plant cell with microwave radiation," in *Proceedings of IEEE International Symposium on Electromagnetic Compatibility*, pp. 234-235, Dec. 1991.

\* Growth rates of fungi can be increased or decreased by RFR exposure:

A. Berg and H. Berg, "Influence of ELF sinusoidal electromagnetic fields on proliferation and metabolic yield of fungi," *Electromagnetic Biology and Medicine*, v. 25, no. 1 (2006): 71-77.

RFR exposure can cause plants to produce more meristems (growing points of young stems, leaves, and roots), affect root cell structure, and induce stress response, causing adverse biochemical changes.

M. Tafforeau et al., "Plant sensitivity to low intensity 105 GHz electromagnetic radiation," *Bioelectromagnetics*, vol. 5, no. 6 (2004): 403-407; M. B. Bitonti et al., "Magnetic field affects meristem cell activity and cell differentiation in *Zea mays* roots," *Plant Biosystems*, vol. 140, no. 1 (2006): 87-93; W. Wawrecki, et al., "Influence of a weak DC electric field on root meristem architecture," *Annals of Botany*, vol. 100, no. 4 (2007): 791-796.

- RFR exposure causes necrotic lesions and abnormal coloring in leaves of trembling aspen trees. Katie Haggerty, "Adverse influence of radio frequency background on trembling aspen seedlings: Preliminary observations," *International Journal of Forestry Research* (2010).

### **Evidence of the Likely Decrease in Property Values in the Vicinity of a Cell Tower/Antenna**

It is increasingly recognized and documented that putting cell antennas and towers near business or residential properties means decreased property values (with corresponding decreased property-tax revenue for local governments) and making them more difficult to sell. This negative effect can also contribute to a deterioration of neighborhoods and school districts when residents want to move out or pull their children out because they don't want to live nearby a cluster of cellular antennas.

Studies find that people don't want to live next to them not just because of health concerns, but also due to aesthetics and public safety reasons, i.e., cell towers/antennas become eyesores, obstructing or tarnishing cherished views. In addition they are also perceived as potential noise nuisances as well as creating fire and fall hazards, if not liability issues. These are real estate marketplace effects that can be considered taking of property without due process as well as

While the Telecommunications Act of 1996 states that health concerns will not impact decisions regarding location of cellular antennas, Congress is unable to dictate the marketplace that responds to such installations. It can be argued that installing these antennas constitutes a taking of property without due process or at least a reduction of one's enjoyment of one's property.

Here is a selection of studies and articles documenting the above:

1. The National Institute for Science, Law and Public Policy's survey "Neighborhood Cell Towers and Antennas—Do They Impact a Property's Desirability?" completed by 1,000 respondents as of June 28, 2014, found the following:

- 94% said a nearby cell tower or group of antennas would negatively impact interest in a property or the price they would be willing to pay for it.
- 94% said a cell tower or group of antennas on top of, or attached to, an apartment building would negatively impact interest in the apartment building or the price they would be willing to pay for it.
- 95% said they would opt to buy or rent a property that had zero antennas on the building over a comparable property that had several antennas on the building.
- 79% said under no circumstances would they ever purchase or rent a property within a few blocks of a cell tower or antennas.
- 88% said that under no circumstances would they ever purchase or rent a property with a cell tower or group of antennas on top of, or attached to, the apartment building.

2. "Cell Towers Are Sprouting in Unlikely Places," *The New York Times*, January 9, 2000 (fears that property values could drop between 5 and 40 percent because of neighboring cell towers).

3. A *New York Times* news story, "A Pushback Against Cell Towers," published in the paper's Real Estate section, on August 27, 2010, found that property values will decrease 4 to 10%, depending on the nearness and size of a cellular installation. "Homeowners have given voice to concerns that proximity to a monopole or antenna may not be just aesthetically unpleasing but also harmful to property values. Many also perceive health risks in proximity to

radio frequency radiation emissions, . . ." Tina Canaris, an associate broker and a co-owner of RE/MAX Hearthstone in Merrick, N.Y., said, "You can see a buyer's dismay over the sight of a cell tower near a home just by their expression, even if they don't say anything."

[http://www.nytimes.com/2010/08/29/realestate/29Lizo.html?\\_r=1&ref=realestate](http://www.nytimes.com/2010/08/29/realestate/29Lizo.html?_r=1&ref=realestate).

4. The Appraisal Institute, the largest global professional membership organization for appraisers with 91 chapters throughout the world, has spotlighted the issue of cell towers/antennas and the fair market value of a home and educated its members that such an installation should, in fact, cause a decrease in home value. It concluded that "media attention to the potential health hazards of [cellular phone towers and antennas] has spread concerns among the public, resulting in increased resistance" to sites near those towers. The percentage of decrease moves toward the higher range the closer the property is to the cellular antenna."

5. A market transaction-based regression study in Christchurch, N.Z. included 4283 property sales in four suburbs that occurred between 1986 and 2002 (approximately 1000 sales per suburb). The sales data that occurred before a cell tower/base station was built were compared to sales data after it was built to determine any variance in price, "If purchasing or renting a property near a CPBS [cell phone base station], over a third (38%) of the control group respondents would reduce price of their property by more than 20%." Bond, S.G., Beamish, K. (2005). "Cellular Phone Towers: Perceived Impact on Residents and Property Values", *Pacific Rim Property Research Journal*, vol. 11, no. 2, pp. 158-177. Also: Sandy Bond and Karen Beamish, "Residents' Perceptions Towards Living Near Cell Phone Towers" presented to the Twentieth American Real Estate Society Conference, April 20-24, 2004, Captiva Island, Florida.

6. Case studies were performed in four suburbs of Christchurch, New Zealand where a cell tower had been installed. Survey data was collected on people's perceptions about the impact of the tower on their property value and, most importantly, that data was combined with actual housing price changes over time. In the two suburbs studied where towers were built in 2000, the effect of a tower on home prices was a decrease of between 20.7% and 21%. Bond, S.G. and Wang, K. (2005). "The Impact of Cell Phone Towers on House Prices in Residential Neighborhoods", *The Appraisal Journal* (Summer 2005) Volume LXXIII, No.3, pp.256-277; [http://goliath.ecnext.com/coms2/gi\\_0199-5011857/The-impact-of-cell-phone.html](http://goliath.ecnext.com/coms2/gi_0199-5011857/The-impact-of-cell-phone.html)

7. This 2004 study in Christchurch, N.Z., involved analysis of the residential transaction data for a total of ten suburbs: five suburbs with cell towers located in them and five control suburbs without towers. "The effect of proximity to a CPBS reduces price by 15%, on average. This effect reduces with distance from the CPBS and is negligible after 1000 feet." Bond, S.G. and Xue, J., "Cell Phone Tower Proximity Impacts on House Prices: A New Zealand Case Study", European Real Estate Society and International Real Estate Society Conference, June 15-18, 2005, Dublin, Ireland.

8. 27 Burbank, CA real estate professionals in December 2009, signed a petition/statement offering their professional opinion that a proposed T-Mobile cell tower at Brace Canyon Park would negatively impact the surrounding homes, stating: "It is our professional opinion that cell towers decrease the value of homes in the area tremendously. Peer reviewed research also concurs that cell sites do indeed cause a decrease in home value." , , , Higher property values mean more tax revenue for the city, which helps improve our city."

"I've done research on the subject and as well as spoken to many real estate professionals in the area, and they all agree that there's no doubt that cell towers negatively affect real estate values.' Steve Hovakimian, Burbank, California real estate broker, and the publisher of "Home by Design" monthly real estate magazine, stated that he has seen properties near cell towers lose up to 10% of their value due to proximity of the cell tower. . . So even if they try to disguise them as tacky fake metal pine trees, as a real estate professional you're required by the California Association of Realtors that sellers and licensees must disclose material facts that affect the value or desirability of a property including conditions that are known outside and surrounding areas."

(Submitted to City Council, Planning Board, City Manager, City Clerk and other city officials via e-mail on June 18, 2010. To see a copy of this, scroll down to bottom of page and click "Subpages" or:

<http://sites.google.com/site/nocelltowerinourneighborhood/home/decreased-real-estate-value/burbank-real-estate-professionals-statement>)

9. Windsor Hills/View Park, CA, 2009: Residents opposing a T-Mobile antenna in their neighborhood received several letters from local real estate companies, appraisers, homeowner associations, and resident organizations in their community confirming that real estate values would decrease with a cell phone antenna in their neighborhood, which must be disclosed to buyers according to the California Association of Realtors as a "known condition" that "affects the value or desirability of the property." To see copies of these letters, see "Report from Los Angeles County Regional Planning Commission regarding CUP Case No. 200700020-(2)," from L.A. County Board of Supervisors September 16, 2009, Meeting documents, Los Angeles County website at: <http://file.lacounty.gov/bos/supdocs/48444.pdf>

10. A Houston jury awarded \$1.2 million to a couple in 1999 because a 100-foot-tall cell tower was determined to have lessened the value of their property and caused them mental anguish: Nissimov, R., "GTE Wireless Loses Lawsuit over Cell-Phone Tower," *Houston Chronicle*, February 23, 1999, Section A, page 11. (Property values depreciated by about 10 percent because of the tower.)

11. In 2001 the assessed values of sixteen residential properties located in Colwood, British Columbia were reduced by BC Assessment by an average of 7.2% (approx. \$9,500 each) due to the aesthetic impacts of a broadcasting antenna tower installation. Facsimile from Dave Hitchcock, area assessor, *BC Assessment* (February 23, 2001) Re: Radio Transmissions and Towers, Triangle Mountain, Colwood, 2001 Assessment Reductions Due to Proximity to Transmission Towers; provided by the Colwood Transmission Towers Citizens Committee at a meeting held on 21 August 2003 in Colwood, BC.

12. Glendale, CA: During the January 7, 2009 Glendale City Council public hearing about a proposed T-mobile cell tower in a residential neighborhood, local real estate professional Addora Beall described how a Spanish home in the Verdugo Woodlands, listed for 1 million dollars, sold for \$25,000 less because of a power pole across the street. "Perception is everything," said Ms. Beall stated. "It the public perceives it to be a problem, then it is a problem. It really does affect property values." See Glendale City Council meeting, January 7, 2009, video of Addora Beall comments @ 2:35:24: [uhttp://glendale.granicus.com/MediaPlayer.php?view\\_id=12&clip\\_id=1227](http://glendale.granicus.com/MediaPlayer.php?view_id=12&clip_id=1227)

13. "Tower Opponents Ring Up a Victory," by Phil Brozynski, in the *Barrington [Illinois] Courier-Review*, February 15, 1999, 5, reporting how the Cuba Township assessor reduced the value of 12 homes following the construction of a cell tower in Lake County, IL. <http://spot.colorado.edu/~maziara/appeal&attachments/Newton-43-LoweredPropertyValuation/>

14. Santa Cruz, CA: This is a story about how a preschool closed because of a cell tower installed on its grounds; "Santa Cruz Preschool Closes Citing Cell Tower Radiation," *Santa Cruz Sentinel*, May 17, 2006; Source, EMFacts website: <http://www.emfacts.com/weblog/?p=466>.

15 This British article reports that a new cell-phone antenna/tower/mast "will knock between 15 and 25 per cent off the value of a house, depending on how close it is and the size of the structure." Melfyn Williams, chairman of the National Association of Estate Agents, said in some cases a mast could see a home reduce in value by between 5 and 10 per cent. . . . "Campaigners are considering legal action to seek compensation for the loss in value of their properties or to get the masts removed. Last week, seven householders in Swindon won sums of between £10,000 and £20,000 each from their local council after it mistakenly allowed a mast to be erected in the middle of their residential street, causing their properties to crash in value."

*The Observer* (U.K.), "Phone masts blight house sales: Health fears are alarming buyers as masts spread across Britain to meet rising demand for mobiles," Sunday May 25, 2003 or: <http://www.guardian.co.uk/money/2003/may/25/houseprices.uknews>

Almost any prospective property buyer would take the existence of a nearby cell tower into account, normally as a negative factor..

#### **A Few Online Sources for More Information:**

[scientists4wiredtech.com](http://scientists4wiredtech.com)  
[powerwatch.org.uk](http://powerwatch.org.uk)

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[bioinitiative.org](http://bioinitiative.org)  
[electromagnetichealthl.org](http://electromagnetichealthl.org)  
[saferemr.com](http://saferemr.com)  
[emfsafetynetwork.org](http://emfsafetynetwork.org)  
[justproveit.net/studies](http://justproveit.net/studies)  
[emf-portal.org](http://emf-portal.org)  
[www.saferemr.com/](http://www.saferemr.com/)

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Request Denial of Use Permit #ZP2018-0236

**From:** Marvin Snow [mailto:marvin.snow@gmail.com]  
**Sent:** Tuesday, June 25, 2019 7:28 AM  
**To:** All Council <council@cityofberkeley.info>; Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Cc:** andy.katz@ebmud.com; Manager, C <CManager@cityofberkeley.info>  
**Subject:** Request Denial of Use Permit #ZP2018-0236

Honorable Mayor and City Council Members,

I object to the proposed Use Permit #ZP2018-0236 to establish a new 50 foot high “monopole” 4G LTE wireless facility with six antennas, six remote radio units and associated ground equipment including a diesel powered emergency electric generator at the East Bay Municipal Utility District site. All equipment to be operated by Verizon Wireless.

A partial list of reasons for the denial of Use Permit #ZP2018-0236 includes:

- The Six antenna, 50-foot monopole will sit directly atop the Hayward Fault.
- The Six antenna, 50-foot monopole will sit within City of Berkeley’s Fire Zone 2.
- The Six antenna, 50-foot monopole will sit within CalFire’s “Very High Fire Hazard Severity Zone”.
- The Six antenna, 50-foot monopole will sit immediately adjacent to the Codornices Park, numerous children's play structures, a softball field, and the Berkeley Rose Garden.
- This project is proposed as an obsolescent 4G installation ... a technology that is soon to be replaced with 5G. It appears that all the analysis associated with this proposal is based on 4G equipment. How long before 5G antennas are installed on the monopole.
- The installation of this antenna array may well set a precedent for EBMUD to lease other reservoir sites in Berkeley for similar purposes.
- Federal Regulations may require equal access at this site to all telecoms. Additional telecoms installing similar monopoles at the Codornices site will of course multiply the projects impacts and potential risks.
- How many Verizon customers now experience inadequate “coverage” on Euclid Ave and how many would be better served after the monopole installation while the rest of the city’s population would be required to live with the adverse impacts? The numbers of citizens adversely impacted would appear to be extremely disproportionate to those benefited.
- Did East Bay MUD provide the City of Berkeley information regarding their leasing plans? If so why did the cognizant City of Berkeley department not raise objections to the site leasing itself. Is EBMUD so far strapped for cash that it must adversely impact the residential areas of the City of Berkeley in order to generate a small additional revenue stream?
- On the other hand if EBMUD did not coordinate with Berkeley in developing their ground lease plans, is this not a sad example of one public agency adversely impacting another public agency all for a few extra revenue dollars? EBMUD should be required to review their real estate actions before anything remotely resembling this 50-foot monopole with six antenna project proceeds any further.

This issue is on the agenda of the Zoning and Adjustments Board (ZAB) for their June 27, 2019 meeting. Please support a denial of Use Permit #ZP2018-0236.

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Respectfully,

Marvin Snow  
2 Northgate Ave.  
Berkeley, California

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: No Verizon tower off of Euclid

-----Original Message-----

From: Jenna Timm [mailto:timmj@mac.com]  
Sent: Tuesday, June 25, 2019 1:40 AM  
To: Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
Subject: No Verizon tower off of Euclid

Please do not put a Verizon tower off of Euclid near cordonices. There is not a reasonable need and the health effects have not been fully researched.

Jennifer Timm  
1565 Scenic Ave  
Berkeley CA. 94708

Berkeley Homeowner.

Sent from my iPhone



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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: cell phone tower at Cordornicis Park

**From:** stanley goldberg [mailto:sbgmd3@gmail.com]  
**Sent:** Monday, June 24, 2019 9:23 PM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** cell phone tower at Cordornicis Park

I think it is ludicrous for the city of Berkeley, a supposed center of good government,, to consider such a tower at a heavily used park,, with little or no effective notice to the neighborhood. I urge that this project be tabled until it is more fully studied, the neighborhood be given the results of the study, allowed to comment and be involved in a final decision,

Sincerely,  
Stanley B Goldberg MD  
1 Vine Lane

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Please do not put a cell tower by codineces Park!

**From:** Jenny Overman [mailto:overman.jenny@gmail.com]  
**Sent:** Monday, June 24, 2019 9:03 PM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** Please do not put a cell tower by codineces Park!

These towers are cancer causing.

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Sent from my I phone ☆ 🌙

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: cell phone tower on Euclid ave resevoir.

**From:** Mary McGann [mailto:mmcgann@scu.edu]  
**Sent:** Monday, June 24, 2019 8:27 PM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** cell phone tower on Euclid ave resevoir.

I write to protest the installation of a cell phone tower near the Berryman Reservoir. I have read several articles and Ann Louie Gittleman's book, *Zapped*. I am convinced that installation of this tower will be especially unsafe to the children and families who frequent the two adjacent parks, Cordinese Oarj and Rose Garden. Radiation is strongest for a 1/3 mile radius surrounding the tower, and that is precisely where children play every day!! IT's also dangerous for folks like myself who live in the area and walk there every day.

I have also read about the risk cell phone towers have for birds, especially any who might be navigating by night. Any light causes them confusion, and signals can disorient migrating birds who are flying over. I take this from biologist, Christopher Uhl.

Please consider our health and well-being, and deny the permit to Verizon!  
Thank you.

Dr. Mary McGann, RSCJ  
Adj. Associate Professor of Liturgical Studies'  
Jesuit School of Theology / Graduate Theological Union  
Berkeley, CA 94709

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Cell phone tower at Cordonices

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**From:** Sarah Webster [mailto:Sarah.Webster@patternenergy.com]  
**Sent:** Monday, June 24, 2019 6:57 PM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** Cell phone tower at Cordonices

Greetings Berkeley Zoning Professionals,

I am writing to express my concern about the cell phone tower proposed for Codornices park.

While I am currently mid research and do not have a firm opinion on the merits of locating a tower there or not, I have to say I am deeply troubled by what seems to be the lack of public communication and disclosure.

This is a place where we raise our children and I believe a significant alteration of the landscape, particularly in service of a corporate request, should be something that is considered with adequate notification and time for public feedback.

Those of us who work full time as well as raise families do not always have the luxury of showing up at a public meeting with only a handful of days of notice so I ask you to please consider extending the public comment period so we all have a time to become informed and make sound decisions.

Many Thanks,  
Sarah

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: proposed Verizon 50 ft cell phone tower at Codornices park

-----Original Message-----

From: Claudia Deering [mailto:claudia.deering@comcast.net]  
Sent: Monday, June 24, 2019 4:47 PM  
To: Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
Subject: proposed Verizon 50 ft cell phone tower at Codornices park

re agenda item for ZAB meeting June 27 2019 proposed Verizon 50 ft cell phone tower at Codornices park

Please register my protest against this ZAB item, on grounds that the neighborhood was not given adequate and timely notice to assess the details.

Claudia Deering  
1576 Hawthorne Terrace  
Berkeley 94708

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Verizon Tower: Cordonices Park

-----Original Message-----

From: Robert Zagone [mailto:rnz@mindspring.com]  
Sent: Monday, June 24, 2019 4:41 PM  
To: Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
Subject: Verizon Tower: Cordonices Park

To Whom It May Concern:

I have lived in Berkeley since 1971 and prior to that attended UC Berkeley. My children and my grandchildren have spent thousands of quality time enjoying Cordonices Park—the slide, the BB courts, the ball field, the tunnel to the Rose Garden, and the playground of slides and climbing structures.

To even contemplate a environmentally deficient phone tower for a large corporation is beyond comprehension. My extended family of 10 adults and children beg you to deny the construction of the tower.

It will be an eyesore (aesthetically offensive) and certainly will be a health hazard to the North Berkeley community. Please listen to the community that you serve and protect.

Don't build! Please!

Thank you,

Robert Zagone  
Vine Street

Sent from my iPhone

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Proposed Cell Tower Border of Berryman Reservoir

**From:** Lisa Grodin [mailto:[lisagrodin@hotmail.com](mailto:lisagrodin@hotmail.com)]  
**Sent:** Monday, June 24, 2019 3:08 PM  
**To:** Zoning Adjustments Board (ZAB) <[Planningzab@cityofberkeley.info](mailto:Planningzab@cityofberkeley.info)>  
**Subject:** Proposed Cell Tower Border of Berryman Reservoir

To Whom it May Concern,  
I strongly oppose the proposed cell tower on the border of Berryman Reservoir/Codornices Park. It would be inconsistent with the character of our historic neighborhood, and there is an unsupported need for a cell tower at this location.

Signed,  
Lisa Grodin  
(30-year resident at 1398 Scenic Avenue)

**Lisa Grodin**

Music Director  
Junior Bach Festival Association  
[juniorbachmusicdirector@gmail.com](mailto:juniorbachmusicdirector@gmail.com)  
[www.juniorbach.org](http://www.juniorbach.org)

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Reject Verizon Cell Tower (ZP2018-0236)

**From:** Francie Jones [mailto:franciehjones@gmail.com]  
**Sent:** Monday, June 24, 2019 3:00 PM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** Reject Verizon Cell Tower (ZP2018-0236)

To Whom It May Concern:

I know that this letter may be coming late, but I only just learned today of the proposed cell tower at Codornices Park/Berryman Reservoir. Although I am not a scientist and have not had time to fully research this matter (given the very short notice), I would like to echo the voices of those concerned about safety, aesthetics, and corporate encroachment.

I think of this park as a nature haven and sanctuary in an increasingly crowded, hectic, and technologically advancing region. There are so few places where we can go to hear the birds chirping, spend time with trees, and breath fresh air. Please, please let's not risk sacrificing that--and if we must consider such a risk, please let's take the time needed to hear from the many, many people people potentially affected (not to mention scientists, environmental conservationists, etc.).

I want to be able to continue to take my toddler to this park; if the tower goes up, I'm not sure if I can.

Thank you very much for your consideration,  
Francie Jones



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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Permit # ZP2018-0236: Euclid Cell Phone Tower

**From:** susan nunes [mailto:suminu1@gmail.com]  
**Sent:** Sunday, June 23, 2019 2:07 PM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>; Nawfal, Layal <LNawfal@cityofberkeley.info>; City Clerk <clerk@cityofberkeley.info>  
**Cc:** Jesse Arreguin <jarreguin@gmail.com>; Kate Harrison <kateha76@gmail.com>; Sophie Hahn <sophie@sophiehahn.com>; Wengraf, Susan <SWengraf@cityofberkeley.info>  
**Subject:** Permit # ZP2018-0236: Euclid Cell Phone Tower

Dear Members of the ZAB,

Please reject Verizon's application to construct a 50' cell tower with 7 antennas and adjacent structures on/in the Berryman Reservoir. When EBMUD restored the reservoir, it worked with the City and with the surrounding community to make sure it fit into its surroundings. It was an amazing partnership. Why, after all of that care and work, would the City recommend approval for an industrial tower that runs counter to everything that was done before?

Paint and faux tree branches won't mask a 50' industrial structure looming over the Rose Garden, Codornices Park, and a surrounding neighborhood of historic homes.

Further, if Verizon is allowed to build its tower, will that mean the City will allow other companies to do the same, as long as they argue the needs of their customers?

The dozens of people who have written in opposition to the project have already eloquently expressed their objections. I trust the Board will carefully consider the issues and concerns raised and reject this application.

Thank you,

Susan Nunes Fadley  
1 Tamalpais Road

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Proposed Cell Tower: Dear God NO!

-----Original Message-----

From: Shirley Issel [mailto:shirleyissel@icloud.com]  
Sent: Saturday, June 22, 2019 5:17 PM  
To: Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
Subject: Proposed Cell Tower: Dear God NO!

I am a neighbor of the park. My children played there daily when they were young as my grandchildren play there now. It's not so easy to get away now and drive to the wilderness I love. But I can still walk to my park and experience the sense of the wildness I love and need. Sometimes, when my grandchildren are with me, I let them think that I am a magician who can make spells to conjure up a sprite or troll to populate the streams and meadows and some fairies to ride the dragon flies that zip about the native plants we worked so hard to restore. My sprites and fairies are frightened by metal towers and antenna. They are afraid of computerized switching control equipment and GPS receivers, power sources and cable. Build these towers and they will not come.

Cordornices Park is no place for cell tower installations. We have spent enormous sums of energy and money to restore the Rose Garden, maintain the grass in the meadow, build a beautiful reservoir, restore native plantings, install restrooms and marvelous play structures, tennis and basketball courts, fireplaces and picnic grounds. Parks are places to escape from jarring urban life. The ZAB is there to maintain Berkeley values and insure that stupid ideas do not go forward. We rely on you. Vote "No." Vote common sense. Vote no and let the magic go on.

Shirley Issel  
1464 Le Roy Ave  
Berkeley, CA 94708

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: 0 Euclid Avenue-Berryman Reservoir. Use Permit #ZP2018-0236

-----Original Message-----

From: Lucinda Reinold [mailto:lucindareinold@yahoo.com]  
Sent: Saturday, June 22, 2019 11:21 AM  
To: Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
Subject: 0 Euclid Avenue-Berryman Reservoir. Use Permit #ZP2018-0236

Dear ZAB members:

I am writing to vehemently protest the proposed Verizon cell tower at the Berryman Reservoir.

Among the many reasons a permit for this structure should be denied is that it will be a huge 50 ft. eyesore, and negatively impact the aesthetic enjoyment of one of the most special, pristine and natural areas of Berkeley. Codornices Park and the Rose Garden, which is a historic monument for this area and the City, get over 100 thousand visitors each year. Each one of those visitors, in addition to those who live nearby, will be visually assaulted by this enormous industrial structure. EBMUD did a good job camouflaging the reservoir with arts-and-crafts style fencing and a trellis in tune with the aesthetics of the surrounding neighborhood, and this proposed industrial cell tower will completely defeat that effort.

Sincerely,  
Lucinda Reinold  
1306 Euclid Ave.

Sent from my iPad

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Please ignore all the anti-science protestors

-----Original Message-----

From: BRYANNA DAVISON [mailto:bdavison@berkeley.edu]  
Sent: Saturday, June 22, 2019 9:58 AM  
To: Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
Subject: Please ignore all the anti-science protestors

I am writing to urge you to approve all planned 5g and otherwise cell towers in Berkeley. There's absolutely no proof that they are a health or safety risk. Thank you for your consideration.

Best,  
Bryanna

**Jacob, Melinda**

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: 5G deadly Plague

**From:** B Dudney, M.D. [mailto:lvng2be@saber.net]

**Sent:** Friday, June 21, 2019 7:58 PM

**To:** All Council <council@cityofberkeley.info>; City Clerk <clerk@cityofberkeley.info>; Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>; Nawfal, Layal <LNawfal@cityofberkeley.info>

**Subject:** 5G deadly Plague

Dear People:

However many horrific motives are driving the 5G and other wireless onslaughts, not least panicked Electro-Magnetic Radiation Godzillas facing a sleeping dragon populace that might awaken to their murderousness before doomsday..

There is no longer any defense for any and all with any hand in these horrors.

Even the stodgy World Health Organization has been moved to opposition by no longer deniable evidence EMR is deadly.

The Divine notice every choice, every act.

Prayers you act in favor of life and health.

B

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Sorgen's PRA info requests re 5G & close proximity "small" cell wireless antennas

**From:** Lloyd Morgan [mailto:lloyd.l.morgan@gmail.com]  
**Sent:** Friday, June 21, 2019 4:28 PM  
**To:** 'Phoebe Anne Sorgen' <Phoebes0@earthlink.net>; Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>; All Council <council@cityofberkeley.info>  
**Cc:** City Clerk <clerk@cityofberkeley.info>; 'BFUU SJC Social Justice Cttee' <bfuu-sjc@googlegroups.com>; 'Wireless Radiation Education & Defense- Berkeley group' <emf-advocacy@googlegroups.com>; 'BCA Steering Com' <bca-steering-committee@googlegroups.com>; Lopes, Bernadette <Blopes@cityofberkeley.info>; Harrington, Phillip <PHarrington@cityofberkeley.info>; Melendez, Nancy <nmelendez@cityofberkeley.info>; Nevels, Ronald <RNevels@cityofberkeley.info>; Andreetta, Colleen <CAndreetta@cityofberkeley.info>; Patel, Nisha <npatel@cityofberkeley.info>; PWWorks <PWWorks@cityofberkeley.info>; PWUtilityFeedback <PWUtilityFeedback@cityofberkeley.info>  
**Subject:** RE: Sorgen's PRA info requests re 5G & close proximity "small" cell wireless antennas

Wow Phoebe,

The implication is that these signs are a fraud, if they have not filed an application! Therefore they should be taken down.

I am of the school that the signs with various versions of "proposed" be covered over with "**No application has been submitted**, neighbors should object with their City Council representatives." Or, "**No Application Has Been Submitted: Contact Your Council Person If You Oppose Small Cell Wireless.**"

I still have many, many copies of Dr. Timothy Schoechle, Re-Inventing Wires. They are available for free. Please have anyone who is interested to come to my home: 2022 Francisco Street, Berkeley, CA 94709. They should call first (510 841-4362) to make sure I'm home.

Each of your questions in **bold** are appropriate.

Call me, I have additional ideas,  
 Lloyd

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**From:** [emf-advocacy@googlegroups.com](mailto:emf-advocacy@googlegroups.com) [mailto:emf-advocacy@googlegroups.com] **On Behalf Of** Phoebe Anne Sorgen  
**Sent:** Friday, June 21, 2019 2:47 PM  
**To:** Bernadette Lopes; Harrington, Phillip; Melendez, Nancy; Nevels, Ronald; Andreetta, Colleen; Patel, Nisha; [publicworks@cityofberkeley.info](mailto:publicworks@cityofberkeley.info); [PWUtilityFeedback@cityofberkeley.info](mailto:PWUtilityFeedback@cityofberkeley.info); [ZAB@cityofberkeley.info](mailto:ZAB@cityofberkeley.info); All Council  
**Cc:** Berkeley City Council; BFUU SJC Social Justice Cttee; Wireless Radiation Education & Defense- Berkeley group; BCA Steering Com  
**Subject:** Re: Sorgen's PRA info requests re 5G & close proximity "small" cell wireless antennas  
**Importance:** High

Hello Ms Lopes et al:

Thank you very much for the responses to our Public Records Act info requests. We have follow-up **questions**/comments:

I showed you a photo of a big yellow "Proposed Project" sign for "proposed installation of small cell wireless equipment" at 1908 Cedar. (There's also one on Webster near Whole Foods at Ashby.) You said no applications have been filed for those locations, but it says on the sign: APPLICANT INFO - MOBILITIE LLC, Costa Mesa, Ca 657-261-3811. **Why would a telecom company post notice of a planned installation before, or without, filing an application for a permit? Is this customary? Could it be that a broader permit was previously granted for those utility poles so they aren't required to apply again?**

So-called "**small**" **cell wireless (scw)** antennas emitting millimeter (rather than the standard microwave) EMF radiation are new and unique to 5G. Though an application may not specify that it's for 5G, our understanding is that it is, indeed, the 5th Generation telecom close proximity wireless roll out, or at least the infrastructure for it.

It's a complex issue. We'll deliver, to anyone who lets us know they want one, a complimentary hard copy of the comprehensive 124 page (with 8 additional pages listing references) white paper by Dr. Timothy Schoechle, *Re-Inventing Wires* published by the National Institute for Science, Law & Public Policy. There are superior alternatives that cost less and are more reliable and secure than 5G.

Meanwhile, fyi, this informal Ted Talk type video gives a **quick, brief overview**. "Local Soccer Mom Versus Multi Billion \$ 5G Industry":

<https://www.youtube.com/watch?v=6M7YFI0I9kl>

In Huntington, NY, each permit costs \$2,500 plus 5% revenue for 10 years. **How much does it cost telecom companies to apply for a permit in Berkeley?**

**How much are our inspection, testing, re-certification, and indemnification fees? How often are radiation testing, inspection and recertification required?**

If the City needs to hire additional staff to handle all this, the profiting telecom companies should pay their salaries, not our taxes.

We have the right to know and to inquire, and we appreciate the time it takes to adequately research and answer residents' questions!

**How can we ensure that concerned Berkelyans are informed as soon as one or more applications for small cell antennas, cell towers, or other telecom equipment are filed, please?** (We've requested that the City Council make it easier on you by passing an urgency ordinance requiring that the telecom companies hold a publicized public hearing, at industry expense, before even filing each application, and notify nearby residents as well as local officials.)

**Are you under deadline ("shot clock") for responding to each application and, if so, how much time do you have once an application is filed?**

**On what dates were the applications filed for the 3 small cell wireless installations that have already been permitted in residential areas on Shattuck Ave, Blake St, and College Ave?**

**Is there a deadline for filing requests for appeals? If so, what are those deadlines? How do we appeal?**

We're also alarmed by a Verizon application for a hideously tall 50 foot 4G cell tower with 7 antennas in a residential neighborhood at Berryman Reservoir overlooking Cordones Park and the Rose Garden. **On what date was that application filed? Is there a deadline for responding? If so, what?**

**Must we submit these questions as formal PRA info requests, or is this letter sufficient?**

Thank you!

Phoebe Sorgen

ps Fyi,

**6/28/19 next Fri - 5G FREE Forum at Sports Basement, south Berkeley, 2727 Milvia, 7pm - 8:30:**

<https://www.indybay.org/newsitems/2019/06/17/18824021.php>

73 minute video of another recent local 5G forum: <https://www.youtube.com/watch?v=2PQDU5PRJVY&t=207s>

On Jun 21, 2019, at 11:02 AM, Lopes, Bernadette wrote:

Dear Ms. Sorgen: Attached are you responses to two submitted PRA Cases:

Regards

Bernadette Lopes

OSIII

City of Berkeley

PW Engineering

<PRA5GSorgen0690034-6-21-19 (2).docx><PRA5GSorgen121000690030-6-21-19.docx>

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You received this message because you are subscribed to the Google Groups "EMF Advocacy" group.

To unsubscribe from this group and stop receiving emails from it, send an email to [emf-advocacy+unsubscribe@googlegroups.com](mailto:emf-advocacy+unsubscribe@googlegroups.com).

To post to this group, send email to [emf-advocacy@googlegroups.com](mailto:emf-advocacy@googlegroups.com).

To view this discussion on the web visit <https://groups.google.com/d/msgid/emf-advocacy/762B0FEB-20FD-4953-84CC-D0ED3907332A%40earthlink.net>.

For more options, visit <https://groups.google.com/d/optout>.



**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Can you answer any questions re cell towers, 5G & close proximity "small" cell wireless antenna apps please?

**Importance:** High

**From:** Phoebe Anne Sorgen [mailto:phoebes0@earthlink.net]  
**Sent:** Friday, June 21, 2019 4:15 PM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** Can you answer any questions re cell towers, 5G & close proximity "small" cell wireless antenna apps please?  
**Importance:** High

Esteemed members of the Zoning Adjustments Board,

Thank you for your service to our lovely city of Berkeley. I'm fwding this PRA request in case some of you might be able to quickly answer some of the questions "off the top of your head" please, in which case we could save staff time.

Sincerely,

Phoebe Sorgen, community organizer and former Berkeley Commissioner

**Questions for Public Records Act info request:**

1. **a.** How can we ensure that concerned Berkelyans are informed as soon as one or more applications for small cell antennas, cell towers, or other telecom equipment are filed, please?
- b.** Will this PRA info request suffice please?
- c.** If so, please be sure to also inform Lloyd Morgan: [lloyd.l.morgan@gmail.com](mailto:lloyd.l.morgan@gmail.com) and Stephanie Thomas: Stephanie Thomas <[skthomas@flash.net](mailto:skthomas@flash.net)>  
 Or would they have to file separate PRA requests?
  
2. **a.** Is the City under deadline ("shot clock") for responding to each application?
- b.** If so, how much time do you have once an application is filed?
  
3. **a.** On what dates were the applications filed for the 3 small cell wireless installations (which IS 5G) that have already been permitted in residential areas on Shattuck Ave, Blake St, and College Ave?
- b.** Is there a deadline for filing requests to appeal?
- c.** If so, what are those deadlines?
- d.** Please consider this message to be a request for appeal of all 3 permits. Does this request suffice for getting the ball rolling?
- e.** If not, to whom do we send our request to appeal?
- f.** What next? **How do we go about appealing approval of the 3 permits?**
- g.** **Is there a simpler process than appealing? Might we solicit the ZAB to reconsider its permit approvals?**

**h.** Was there public notice of those applications or planned installations? Were "proposed installation" signs posted onsite and/or letters sent to nearby residents and people who work nearby?

**i.** Was public notice required?

**4.** Re Verizon's application for a 50 foot tall 4G cell tower with 7 antennas at Berryman Reservoir:

**a.** On what date was that application filed?

**b.** Is there a deadline for the City to respond?

**c.** If so, when is it?

**5. a.** How much does it cost telecom companies to apply for a permit in Berkeley?

**b.** How much are our inspection, testing, re-certification, and indemnification fees?

**c.** How often are radiation and other safety testing, inspection, and recertification required?

**d.** Is it required that the testing and inspections be conducted by qualified independent professionals, rather than by telecom company agents?

**6.** Re the "proposed installation of small cell wireless equipment" noticed at 1908 Cedar (and on Webster near Ashby), the sign states: APPLICANT INFO - MOBILITIE LLC, Costa Mesa, Ca 657-261-3811:

**a.** Why might a telecom company post notice of a planned installation before, or without, filing an application for a permit?

**b.** Is this unusual?

**c.** Is it that a broader permit was previously granted for those utility poles, so the telecom company isn't required to apply again?

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Weighing in on proposed cell towers

**From:** Shawn Drost [mailto:sdrost@gmail.com]  
**Sent:** Friday, June 21, 2019 3:55 PM  
**To:** Nawfal, Layal <LNawfal@cityofberkeley.info>; PWWorks <PWWorks@cityofberkeley.info>; Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** Weighing in on proposed cell towers

Hi all,

My wife and I are homeowners at 1278 Campus Dr. She has lived in Berkeley her whole adult life and I'm new here after 8 years in SF. We live near by the planned cell towers in Barryman Reservoir / Codornices park as well as some others that I see under discussion on Next Door.

I am FOR cell towers in general. I am also FOR these specific towers. I am FOR any tower that your council is endorsing. Here are my reasons:

1. The people of Berkeley have overwhelmingly voted with their actions. We are all FOR cell towers. This debate is about where to put them. I hope you will disregard the vocal minorities saying "who needs cell service" or "who needs 5g".
2. It is my understanding that these towers are deemed safe after serious studies by relevant professionals. In fact I am under the impression that it is illegal to block their placement for health related reasons, because our duly elected representatives and their staff have decided these health questions are settled science. If all that is true I hope you will stick to the mandate. If you are like the public servants I know you will be looking for a way to make this work for everyone and I respect that, but I just want to add my voice as a representative of the silent majority.
3. I get that nobody likes an eyesore. But obviously there are smart people that have worked to minimize the outcry and maximize the upside. I respect that work and ask you not to bend to loud voices saying that this is the wrong backyard for the towers. Figure out the best place for them and be done with it, and if it's in Glendale La Loma park next time (my back yard) you won't hear me complaining. Put a homeless shelter here please.
4. I need some more bars y'all not to make light of something that many people are threatening to move about. But the simple fact needs to be said. We all use and live this infrastructure for everything including keeping in touch with our legislators. I am literally having trouble sending this right now (not making it up, I know it's hard to believe).

I think that's all I have to say. Thanks for reading!

-Shawn Drost

Kelley Hart  
1350 Scenic Avenue  
Berkeley, CA 94708

Zoning Adjustments Board  
Land Use Planning Division  
1947 Center Street  
Berkeley, CA 94704  
RE: Proposed Cell Tower at 0 Euclid Avenue, #ZP2018-0236

Dear Members of the Board,

Since my first letter to you, I learned that this is not the beginning of your process but the end of your process. With a close review of Verizon's application materials available on the City's website, I believe there are several deficiencies in this application, and for that reason it should be rejected.

1. It doesn't meet the City of Berkeley's zoning requirements.

#### **23B.32.040 Findings for Issuance and Denial and Conditions**

According to this provision, **the Zoning Adjustments Board (ZAB) cannot approve this use permit unless you find that "it will not be detrimental ...or injurious to property and improvements of the adjacent properties, the surrounding area or neighborhood or to the general welfare of the City."**

Property values for those who live in this block of Euclid opposite the reservoir, along Codornices Road, and the top of Bay View will most certainly decline. Instead of having an unobstructed view of beautiful trees and open space, they will have a partially obstructed view of an industrial cell tower. While coming/going along Euclid Avenue and Bay View passersby do not currently see the reservoir or any of its related infrastructure. That is all hidden within the reservoir. This cell tower, initially 50 feet but allowed to increase to 70 feet,<sup>1</sup> will be visible from outside the reservoir berm. Painting the pole and the many antenna green (staff recommendation) or making it look like a fake tree is not going to fool anyone into thinking it's pretty. Every time someone is driving to/from one of those houses they will now see a cell tower.

There is ample evidence that homes near parks have increased property values, usually between 8% and 20%.<sup>2</sup> There is no evidence that homes near cell towers have increased property values. To the

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<sup>1</sup> This is due to FCC rules combined with Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012. <https://ehtrust.org/cell-phone-towers-lower-property-values-documentation-research/>. See also a good summary here: <https://www.nh.gov/osi/planning/resources/wireless/deploying.htm> The New Hampshire state government provides a succinct explanation that under federal rules, local governments must allow collocation (after a tower has been approved), and collocation can entail adding 10% or 20 feet, whichever is greater, to the top of an existing tower.

<sup>2</sup> [http://depts.washington.edu/hhwb/Thm\\_Economics.html](http://depts.washington.edu/hhwb/Thm_Economics.html) Language from that article: "Homes that are adjacent to naturalistic parks and open spaces are valued at 8-20% higher than comparable properties, with the positive price effect declining to near zero about ½ mile away." There are four footnotes for this citation, quoting articles written between 1988 and 2001. The most recent article was written by John Crompton, whom I met and heard

contrary, homes near cell towers sometimes decline in value by 20%.<sup>3</sup> Some homeowners could potentially experience up to a 40% loss in value (the 8 -20% surplus for proximity to the park and an additional 20% for their now-ugly views.) To prove that there will be no decline in value, because this is a residential neighborhood adjacent to two lovely parks with the utility hidden from view, the applicant would need to do a lot more than say that because there is already a utility here no one will be negatively affected.

### **23C.17.100 Findings Required for Approval**

According to B3 of this provision, **“In order to approve any Use Permit or Administrative Use Permit under this chapter, the Zoning Adjustments Board or the Zoning Officer must make the following findings... “that the facility is necessary to prevent or fill a significant gap in coverage or capacity shortfall in the applicant’s service area, and is the least intrusive means of doing so.”** The applicant has used an RF computer simulation model without any real data to demonstrate a gap. Additionally, Verizon’s claims of need have not been verified by an independent third-party consultant. Please see Attachment 1. This is a screenshot from RootMetrics website of Verizon’s coverage performance, using real data.<sup>4</sup> RootMetrics’ data demonstrates that Verizon has no gap in coverage in this area. There are some places where no data has been collected, and so we do not know if there is a gap there. But for all of the places where Verizon has data, they have excellent coverage. RootMetrics data is consistent with Verizon’s own website, which indicates that there is already excellent coverage and “call performance” at the proposed location.

The “peer review” in the application did not require real data nor perform any type of analysis of real data to support the applicant’s finding that this tower is necessary to prevent or fill a gap in coverage or capacity in the applicant’ service area. The peer review didn’t address the issue of need or coverage gap at all. They simply regurgitated a bunch of rhetoric about emissions standards. That doesn’t properly evaluate the claim that this tower is necessary and the least intrusive means.

Attachment 2 contains a list of map of installations nearby, and proximity to the proposed tower is excellent. The applicant should have to prove why Verizon can’t meet their objectives by co-locating on

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speak about 5 years ago. He is still writing and publishing on these topics and economists in the park space still use these numbers.

<sup>3</sup> National Institute of Science, Law, and Public Policy found: 79% of people surveyed would not buy a property within several blocks of a cell tower; 94% of people would pay less or be less interested in a property near a cell tower; Market analysis of home sales showed properties reduced by 21% near cellular base stations. <https://www.emfanalysis.com/wp-content/uploads/2016/04/Impact-of-Cell-Towers-on-House-Prices.pdf>. More research findings and professional opinions on this subject are available here: <https://sites.google.com/site/nocelltowerinourneighborhood/home/decreased-real-estate-value>

<sup>4</sup> RootMetrics is an independent mobile analytics firm that offers scientific insights into how users experience networks under real-world conditions. They provide nation to neighborhood reporting with a dedicated analytics department to verify results. They are often cited by industry, press and consumers.

these existing towers before they can justify a new one. They should also be required to demonstrate that they are already using 4G hardware on all of their installations. It appears that at least one installation may be using only 2G or 3G hardware. If they would like to provide better service to the area, they should upgrade that hardware.

According to 23C.17.040 Minimum Application Requirements, **the applicant must provide “A statement of the telecommunications objectives sought for the proposed location,... whether it is the least intrusive means of doing so, and whether there are any alternative site that would have fewer aesthetic impacts while providing comparable service.”** The applicant did not meet this requirement. Its entire analysis was that because this is on a “utility” (EBMUD reservoir), then it is aesthetically consistent. This is what Verizon says: “The proposed location is most appropriate as it will allow Verizon to achieve its coverage objectives, while causing the least impact on the neighborhood. This EBMUD parcel is already used for utility purposes. Adding a Verizon tower to this location will allow Verizon to cover the neighborhood without changing its character.” The issue is that because of the topography and a lot of work to hide the utility, it doesn’t currently look like a utility. Adding a tower there will actually change the aesthetic because it will not be hidden by the topography.

2. Verizon’s proposal is not consistent with the General Plan.

**Policy LU-7 of the General Plan is: “Neighborhood Quality of Life, Action A: Require that new development be consistent with zoning standards and compatible with the scale, historic character, and surrounding uses in the area.”**

The section above explains how Verizon’s proposal is inconsistent with zoning standards. Additionally, it is inconsistent with the other elements, as follows:

- Scale: (though explicitly exempted) it will exceed the height limits that everyone else in this residential neighborhood has complied with. And once it is approved, they can add 20 feet to it without any further review/oversight.<sup>5</sup> It will stand out like a sore thumb in this clearing created for the reservoir.
- Surrounding uses: there is a carefully concealed reservoir tank (not visible from any of the public streets or parks), two beautiful and historic parks, and residences. Even the telephone pole utilities along Euclid have been undergrounded. So this will be the only visible utility along Euclid.
- Historic character: the Rose Garden, across the street from the cell tower, reflects Berkeley’s historic arts and crafts style.

In sum, it is a residential neighborhood and the surrounding uses are two beautiful public parks and many single-family homes. The historic character is Berkeley’s arts and craft architectural style. The homes along Codornices Road are some of the most charming in all of Berkeley. There is also historic Maybeck home ½ block from the proposed tower. Painting the cell tower green will not make it consistent with the neighborhood or the parks. There are no industrial or commercial uses in this neighborhood for which a 50-70 foot cell tower would be compatible. There is a discreet water tank

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<sup>5</sup> See footnote 1.

hidden within a drinking water reservoir that EBMUD has surrounded with expensive natural landscaping (albeit still young since the reservoir was dramatically remodeled not long ago.) From the roads, the sidewalks, and the parks, there are no views of commercial or industrial uses. This would be the first. The application includes a viewshed analysis that understates the aesthetic damage that will be done by this project.

Not long ago, residents and EBMUD spent a lot of time and resources to make sure that the water tank was carefully concealed from residents and park visitors, and that the land around the reservoir is consistent with the residential neighborhood and Arts and Crafts feel of the Berkeley Rose Garden, a critical landmark for the City of Berkeley. I disagree with the staff report that painting the pole of the cell phone green will make it blend in with the neighborhood. It is terribly out of scale with the neighborhood. And I'm not the only one who feels that way. In just a few hours over a few days, Lucinda Reinold (my neighbor) and I found 70 other people who agreed with us. Many of them were visitors from other parts of California, and visitors from other parts of the country. See attached petition (paper version for those I encountered in the park or on nearby streets).

3. It's reckless to allow EBMUD to lease a portion of the reservoir's storage capacity for a cell tower.

EBMUD and the applicant are proposing to put the tower in the basin itself. This is ridiculous. This land is intended for use as a drinking water reservoir. I spoke briefly with the Public Relations specialist for EBMUD (Charlotte?) and she reassured me that the current tank (enclosed within the basin) is more than adequate to meet current and projected need, which is estimated through 2040. But EBMUD shouldn't be compromising drinking water storage capacity for our future population, which is exactly what they are doing with this project. I worry that we will be locked into a financial situation with Verizon and be unable to utilize the capacity of this reservoir when it is needed, which is just a matter of time. Also, to keep the cell tower project from blocking one of the only two access points to this un-staffed reservoir, they're proposing to put it on a very steep slope of the basin itself, about 5-7 feet from the access path. In an earthquake or a fire it could fall into the reservoir basin or across the path, making it impossible for EBMUD personnel or other emergency personnel to service or operate the distribution of water from the reservoir when it is most needed. This is the sole source of drinking water for residents beneath the reservoir (it must get into this reservoir before it is then piped downstream to users).

4. There is an error in the peer review RF report, as it grossly mischaracterizes the controlled zone for radiation. Once the cell tower is fully built out, people visiting Codornices Park and close-in neighbors may be exposed to radiation exceeding FCC's limits.

Please see Attachment 3 for an exact copy of page 10 of the peer review RF report. The RF peer review report, authored by Telecom Law Firm (TLF), calculates that the radiation will project out about 100 feet

in three directions (at about 40 feet off the ground). Verizon calls this the “controlled access zone” because it is where radiation emissions are strongest.<sup>6</sup>

TLF says that the length of each arrow is roughly 100 feet. If that were true, the controlled zone for the “Sector C” arrow would not extend beyond the row of trees lining Codornices Park. This is a major miscalculation. If the Sector C arrow was 100 feet long, that would mean that the asphalt path is approximately 25 feet wide. The width of the asphalt path (including the curb) at that point on the map is exactly 11 feet. The diagram dramatically under-estimates the distance of the controlled zone. It actually extends about 70 -75 feet into the park, well into the grassy field used frequently for youth and adults for sports as well as dog walkers.

The report says this: “While the site as currently proposed is categorically excluded under the FCC Guidelines, TLF [Telecom Law Firm] notes that another round of independent RF analysis will be needed to determine whether a future carrier’s antennas will comply under the FCC’s Rules [referring to radio frequency limits] since the future carrier’s antennas will be installed lower than 10 meters AGL. For this reason, we recommend that the City direct Verizon to strike all ‘future’ elements from the Plans and the Application so that any future changes to this site only occur upon a subsequent planning application and then-current RF emissions analysis of the then-existing Verizon emissions and the proposed emissions of the future carrier(s).”<sup>7</sup> That’s a nice gesture, but the reality is whether they strike future plans from this application or not, Verizon will have the ability (because of FCC’s rules – see Footnote 1 above) to allow other carriers to colocate without any further input/restrictions from the City of Berkeley. According to the FCC, colocation can occur above the current pole or beneath the antenna planned for this pole. The only restriction is that if they go up, then they’re limited to 10% of the height of the pole or 20 feet whichever is greater. So, when Verizon decides to welcome co-location, we all lose – either they co-locate down the pole and people on the grassy field in Codornices Park may receive radiation exceeding FCC’s limits, or they go up, and the aesthetics are even worse and the uphill neighbors may get exposed to radiation exceeding FCC’s limits.

##### 5. Failed Notice Requirements

As a procedural matter, I believe that notice to the community did not meet the City’s requirements. Though residents within the legally defined zone may have received notice two weeks before the meeting that an application submitted, they were not able to view the full application at that time. I spoke with the staff contact for this project, Loyal Nawful, mid-afternoon on Tuesday, the 18<sup>th</sup>, and she confirmed that the City had not yet posted all of the application documents on the City’s self-service website. Indeed, I could not find them there even on the evening of 6/26. There were still only two

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<sup>6</sup> From RF peer review memo p. 9: “Based on the transmitted frequencies and power levels disclosed in the H&E RF Report, Verizon’s emissions will create a worst case “controlled access zone” that extends to a maximum of approximately 100 feet horizontally from the face of the antennas at approximately the same height as the antennas emissions center.”

<sup>7</sup> Page 11 of Telecom Law Firm PC’s memo “Wireless Radio Frequency Planning Memorandum” dated 5/24/19 in the application file, here: [https://www.cityofberkeley.info/uploadedFiles/Planning\\_and\\_Development/Level\\_3\\_-\\_ZAB/2019-05-24\\_RF%20Peer%20Review%20Memo\\_0%20Euclid.pdf](https://www.cityofberkeley.info/uploadedFiles/Planning_and_Development/Level_3_-_ZAB/2019-05-24_RF%20Peer%20Review%20Memo_0%20Euclid.pdf)



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documents posted – the initial application and a welcome letter. However, I received full notice, on 6/21/19, when Layal emailed me a specific link to a place on the city’s website where all of the applicant’s file was located. There were 9 other documents that were part of the application. In sum, there was inadequate notice because for the 14-day notice period, only 2 of the 11 documents comprising the application were available to the public on its self-service website established for exactly this type of communication.

Sincerely,

Kelley Hart

Attachment 1: RootMetrics real data (slide 1) and Comparison of Verizon's computer "simulation" to real data (slide 2)

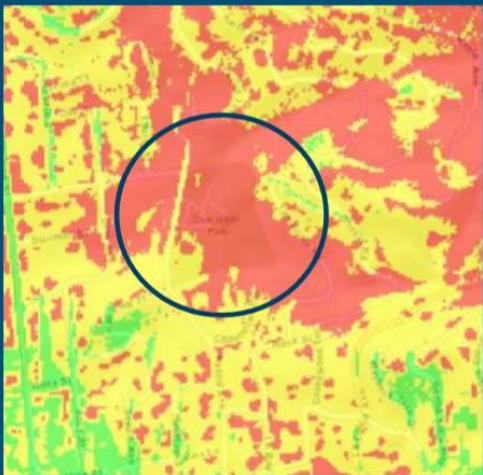
## RootMetrics coverage map shows **good** coverage




- Coverage is **Good** all around
- White is **Untested**
- **No Bad or poor areas** at all anywhere on the map
- Only a few fair areas anywhere close by
- Scientifically **tested** mobile performance

## Direct coverage compare - **doesn't** compute

— Coverage in the **Red**



— Coverage in the **Green**



Attachment 2:

**18 existing cell locations within 1.5 miles**

<b>Verizon</b>	<b>AT&amp;T</b>	<b>T-Mobile</b>
1. 1540 Shattuck; .547 miles	1. 1625 Shattuck; .61 miles	1. 2095 Rose; .47 miles
2. 1804 Euclid Ave; .58 mile (recently approved)	2. 1632 University; 1.34 mile	2. 2054 University; .96 mile
3. 2015 Shattuck; .91 mile (pending approv)	3. Hearst & Arch; .69 mile	3. 1725 University; 1.22 mile
4. 2002 Acton; 1.58 mile	4. 2116 Bancroft; 1.19 mile	4. 1810 Euclid; .58 mile
		5. 1330 Cedar; 1.47 mile
		6. 2116 Bancroft; 1.19 mile

<b>Sprint</b>	<b>MetroPCS</b>
1. 1600 Shattuck; .599 miles	1. 1936 University; 1.06 miles
	2. 2150 Shattuck; 1.05 mile
	3. Hearst & Arch; .69 mile
	4. 2116 Bancroft; 1.19 mile

**More than enough towers**

Attachment 3: Duplication of page 11 of RF Peer Review Report

Rincon Consultants, Inc.

May 24, 2019

Page 10

See Figure 8 for the approximate azimuths and extents of the controlled zone.



**Figure 8:** Approximate (i) location of monopine, and (ii) azimuth orientations for all three sectors (Source: Google Maps; Annotated by Dr. Kramer).

The length of the red arrows in Figure 8 is about 100', which is the limit of the controlled zone, which is at least 41 feet above ground level at the location of the monopine.

[Balance of Page Intentionally Left Blank]



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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Permit # ZP2018-0236: Euclid Cell Phone Tower

**From:** Dawn Hawk [mailto:dawnhawk1@yahoo.com]  
**Sent:** Thursday, June 27, 2019 7:13 AM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>; Nawfal, Loyal <LNawfal@cityofberkeley.info>; City Clerk <clerk@cityofberkeley.info>  
**Cc:** Jesse Arreguin <jarreguin@gmail.com>; Kate Harrison <kateha76@gmail.com>; Sophie Hahn <sophie@sophiehahn.com>; Wengraf, Susan <SWengraf@cityofberkeley.info>  
**Subject:** Permit # ZP2018-0236: Euclid Cell Phone Tower

Dear Members of the ZAB,

I am writing in strong opposition to Verizon's application to construct a 50' cell tower with 7 antennas and adjacent structures on/in the Berryman Reservoir. There are many detailed letters of opposition already in the record. I wish to add my concerns:

Money for nothing – I am confused about whether it is the City of Berkeley that will benefit in receiving Verizon \$\$, or EBMUD which is the lessor of the property from the City. Whether our City or our public utility receives payments, this is money for nothing. This tower will just be the beginning – the camel's nose under the tent. The commercial and competitive race to provide faster, more connected cell phones is on. Already our power poles are drooping from all the newly hung fiber wiring. Let's not sell out our historical treasures and neighborhoods for a corporation's profit. From the staff report: "ENVIRONMENTAL REVIEW STATUS: Categorically exempt pursuant to Sections 15301 and 15303 of the CEQA Guidelines ("Existing Facilities and New Construction or Conversion of Small Structures")." This is specious to argue that as there is already a water reservoir on the property, therefore one can add a cell phone tower. But it is clear that the City will not deny any future conversion of the 50' tower into whatever Verizon wants to do next.

Fire risk – this 50-foot cell tower requires a generator filled with 132 gallons of fuel - on the Hayward fault. After a massive effort to educate Berkeley homeowners about fire safety and creating defensible space around their homes, why would the City turn around and allow this potential fire hazard to be installed in a high-risk fire and earthquake zone?

Noise – This cell tower will transform Codornices from a tranquil park into a commercial switching station. The noise from the generator and air conditioner will surely be amplified by being adjacent to the reservoir's steel tank, in the bowl of the reservoir and the Codornices watershed.

Safety/Radiation – there are health risks to nearby neighbors as well as health impacts to 1,000s of children and families and summer camp youth from around the Bay who use this park space year round.

Aesthetics – there will be a permanent adverse impact on the character and beauty of Codornices Park, the Rose Garden, the adjacent historic Rose Walk and the recently renovated Berryman Reservoir. These parks are Berkeley's treasures and some of the big draws for visitors to the City as well as its residents. These public spaces should not be destroyed by this hideous eyesore.

Across the country health experts, fire personnel, and entire communities are fighting back against this onslaught of cell towers within residential neighborhoods. As the letters in opposition show, Berkeley residents are also fighting back. Please consider these concerns carefully, stand up for Berkeley's core values, and deny this application.

Thank you,

Dawn Hawk  
180 Tamalpais Road

SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE  
ZAB 06-27-19  
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**From:** Zoning Adjustments Board (ZAB)  
**To:** Michael Burt  
**Subject:** RE: Corrected Supplement to my June 24, 2019 Opposition to Permit # ZP2018-0236

**From:** Michael Burt [mailto:mb@michaelburtlaw.com]  
**Sent:** Thursday, June 27, 2019 12:31 AM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** RE: Corrected Supplement to my June 24, 2019 Opposition to Permit # ZP2018-0236

I just sent a supplement to my June 24, 2019 letter in opposition. Please consider the attached instead as the prior letter contained a typo.

Michael Burt  
Law Office of Michael Burt  
1000 Brannan Street, Suite 400  
San Francisco, California 94103-4888  
415-522-1508 phone  
415-522-1506 fax  
415-250-4541 cell  
[mb@michaelburtlaw.com](mailto:mb@michaelburtlaw.com)

**Law Office of Michael Burt**  
 1000 Brannan Street, Suite 400  
 San Francisco, California 94103  
 415-522-1508 phone; 415-522-1506 fax  
 mb@michaelburtlaw.com

June 24, 2019

Berkeley Zoning Adjustment Board  
 1231 Addison Street  
 Berkeley, CA 94708  
 Sent via email to: zab@cityofberkeley.info

*Re: Supplement to June 24, 2019 Opposition to Permit # ZP2018-0236 (Berryman Reservoir/Codornices Park cell tower)*

Dear Board Members:

This letter is a supplement to my June 24, 2019 letter opposing the above-referenced application by Verizon for a permit to build a 50 foot fake pine tree cell tower at the Berryman Reservoir. My further research into this issue has revealed additional evidence in support of the arguments I have already made, as well as two additional reasons why this project should not be allowed to go forth.

First, Verizon's application to build the Berryman cell tower stands in stark contrast to other applications Verizon has made in California to build these fake cell towers. As just one example, I attach an application filed by Verizon in El Dorado County. The differences between the two applications are striking and illustrate that Verizon apparently believes that the citizens of Berkeley are entitled to less protection than the citizens of El Dorado County:

Verizon El Dorado Permit Application	Verizon Berryman Permit Application
<p><b>Allegation of necessity:</b> "This tower will help alleviate an <i>area</i> of poor coverage and inadequate capacity within this service area"</p>	<p><b>Allegation of necessity:</b> "Verizon's objective is to <i>improve</i> coverage in the Berkeley Hills area, especially along Euclid Avenue north of EBMUD's Berryman Reservoir....Verizon's coverage objectives for this project are to <i>improve</i> service in the area described above, and to <i>offload traffic from other nearby sites</i> that are often at or exceeding capacity....Verizon coverage <i>in the immediate vicinity</i> of the proposed facility is poor."</p>



<p><b>Consideration of alternatives:</b>                  “ALTERNATIVE LOCATIONS REVIEWED BUT NOT SELECTED:                  1310 Large Oak Drive                  Landlord not interested in pursuing a lease with Verizon                  4590 Stoney Ridge Rd.                  Rejected by Verizon, inadequate coverage capability.                  4540 Stoney Ridge Rd.                  Rejected by Verizon, in adequate coverage capability.                  4541 Burnt Oak Dr.                  Rejected by Verizon, in adequate coverage capability.                  1310 Large Oak Dr                  Landlord not interested in pursuing a lease with Verizon.                  4101 Birds Eye Court                  Landlord not interested in pursuing a lease with Verizon.”</p>	<p><b>Consideration of alternatives:</b> None.  <i>See, Vertex Dev., LLC v. Manatee Cty.</i>, 761 F. Supp. 2d 1348, 1362 (M.D. Fla. 2011)(attached to June 24, 2019 letter)(“Aside from aesthetics and property values, the [permit board]also took issue with the lack of evidence to demonstrate why other sites, which are already developed as nonresidential, were not considered. Finding of Fact No. 6 states ‘The public hearing record does not sufficiently document the analysis by the applicant to demonstrate why other sites which are already developed as nonresidential, commercial and industrial uses and which are currently visually impacted by tall structures could not be utilized for the telecommunication tower siting in this instance...”)</p>
<p><b>Location:</b> “The proposed site is well screened from public view by several large mature trees and has been selected due to its location on a hill top, adequately positioned to provide coverage in the intended service area.”</p>	<p><b>Location:</b> “This EBMUD parcel is shaped like a bowl, with the lowest elevations surrounded by an earthen berm. Because <i>ground equipment</i> would be installed at the bottom of this bowl, it would not be visible from the street.” There is no allegation that the tower itself will be “well screened from public view” or that the chosen site is “on a hill top, adequately positioned to provide coverage in the intended service area.”</p>

<p><b>Sharing with other carriers:</b> “This tower has been designed to accommodate future collocation by other carriers....The proposed site has been designed to allow for future co-location opportunities with other carriers. The land lease provides sufficient space for additional service providers and the tower and its foundation are designed for future equipment. This tower will eliminate the need for multiple towers within the same general vicinity as it has been designed to accommodate carriers should they come forward. Additional ground space would need to be leased from the landlord.”</p>	<p><b>Sharing with other carriers:</b> None.</p>
<p><b>Assurance of compliance with county standards:</b> “This project has been carefully designed to comply with all applicable standards.”</p>	<p><b>Assurance of compliance with county standards:</b> None</p>
<p><b>Assurance of compliance with FCC standards:</b> “This project will not interfere with any TV, radio, telephone, satellite, or any other signals. Any interference would be against the Federal Law and would be a violation Verizon Wireless' FCC License. In addition, this project will conform to all FCC standards.”</p>	<p><b>Assurance of compliance with FCC standards:</b> None</p>
<p><b>Assurance of limited use of diesel equipment:</b> “The standby generator will be operated for approximately 15 minutes per week for maintenance purposes, and during power outages and disasters.”</p>	<p><b>Assurance of limited use of diesel equipment:</b> None</p>
<p><b>Hazardous Materials Business Plan:</b> “A Hazardous Material Business Plan will also be submitted upon project completion, and stored on site after construction.”</p>	<p><b>Hazardous Materials Business Plan:</b> None</p>

<p><b>Services provided:</b> “This unmanned facility will provide service to area travelers, residents and businesses 24 hours a day, 7 days a week. This site will also serve as a back up to the existing landline service in the area and will provide improved mobile communications.”</p>	<p><b>Services provided:</b> “Verizon is proposing to provide LTE service from this facility. Please note that LTE is a ]data only’ service, for which the term ‘minutes of use’ has no meaning....While voice telephone service will ultimately be provided from the proposed site, that service is just any other service that uses data, like e-mail or web browsing, or video.”</p>
<p><b>Construction schedule:</b> “The construction of the facility will be in compliance with all local rules and regulations. The typical duration is two months. The crew size will range from two to ten individuals.”</p>	<p><b>Construction schedule:</b> None</p>
<p><b>Assurance of Maintenance:</b> “A technician will visit the site approximately twice a month to check the facility and perform any necessary maintenance.”</p>	<p><b>Assurance of Maintenance:</b> None</p>

Again, the differences in these two permit applications are dramatic and underscore the fatal flaws in Verizon’s Berryman application.

I also call to your attention the important fact that The Tax Relief and Job Creation Act of 2012 would allow Verizon to increase the size of the tower. No one (not even the county) will be able to stop them from further degrading our neighborhood if this ugly and intrusive tower is approved. See, Federal Communications Commission, *Wireless Telecommunications Bureau Offers Guidance on Interpretation of Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012* (attached).

For all of the reasons stated above and in my June 24, 2019 letter I again urge you deny Verizon’s application.

Sincerely,

/s/ Michael N. Burt  
Michael N. Burt  
Attorney at Law

**Law Office of Michael Burt**  
 1000 Brannan Street, Suite 400  
 San Francisco, California 94103  
 415-522-1508 phone; 415-522-1506 fax  
 mb@michaelburtlaw.com

June 24, 2019

Berkeley Zoning Adjustment Board  
 1231 Addison Street  
 Berkeley, CA 94708  
 Sent via email to: zab@cityofberkeley.info

*Re: Supplement to June 24, 2019 Opposition to Permit # ZP2018-0236 (Berryman Reservoir/Codornices Park cell tower)*

Dear Board Members:

This letter is a supplement to my June 24, 2019 letter opposing the above-referenced application by Verizon for a permit to build a 50 foot fake pine tree cell tower at the Berryman Reservoir. My further research into this issue has revealed additional evidence in support of the arguments I have already made, as well as two additional reasons why this project should not be allowed to go forth.

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<p><b>Consideration of alternatives:</b>          “ALTERNATIVE LOCATIONS REVIEWED BUT NOT SELECTED:          1310 Large Oak Drive          Landlord not interested in pursuing a lease with Verizon          4590 Stoney Ridge Rd.          Rejected by Verizon, inadequate coverage capability.          4540 Stoney Ridge Rd.          Rejected by Verizon, in adequate coverage capability.          4541 Burnt Oak Dr.          Rejected by Verizon, in adequate coverage capability.          1310 Large Oak Dr          Landlord not interested in pursuing a lease with Verizon.          4101 Birds Eye Court          Landlord not interested in pursuing a lease with Verizon.”</p>	<p><b>Consideration of alternatives:</b> None.  <i>See, Vertex Dev., LLC v. Manatee Cty.</i>, 761 F. Supp. 2d 1348, 1362 (M.D. Fla. 2011)(attached to June 24, 2019 letter)(“Aside from aesthetics and property values, the [permit board]also took issue with the lack of evidence to demonstrate why other sites, which are already developed as nonresidential, were not considered. Finding of Fact No. 6 states ‘The public hearing record does not sufficiently document the analysis by the applicant to demonstrate why other sites which are already developed as nonresidential, commercial and industrial uses and which are currently visually impacted by tall structures could not be utilized for the telecommunication tower siting in this instance...”)</p>
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<p><b>Assurance of limited use of diesel equipment:</b> “The standby generator will be operated for approximately 15 minutes per week for maintenance purposes, and during power outages and disasters.”</p>	<p><b>Assurance of limited use of diesel equipment:</b> None</p>
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For all of the reasons stated above and in my June 24, 2019 letter I again urge you deny Verizon’s application.

Sincerely,

/s/ Michael N. Burt  
Michael N. Burt  
Attorney at Law

FILE # 515-0004

**EL DORADO COUNTY PLANNING DEPARTMENT**

**APPLICATION FOR Special Use Permit**

ASSESSOR'S PARCEL NO.(s) 105-140-06-10

PROJECT NAME/REQUEST: (Describe proposed use) Arrowbee Lake Verizon Wireless Cellular Tower Project

IF SUBDIVISION/PARCEL MAP: Create \_\_\_\_\_ lots, ranging in size from \_\_\_\_\_ to \_\_\_\_\_ acre(s) / SF

IF ZONE CHANGE: From \_\_\_\_\_ to \_\_\_\_\_ IF GENERAL PLAN AMENDMENT: From \_\_\_\_\_ to \_\_\_\_\_

IF TIME EXTENSION, REVISION, CORRECTION: Original approval date \_\_\_\_\_ Expiration date \_\_\_\_\_

APPLICANT/AGENT Verizon Wireless c/o Epic Wireless c/o Mark Lobaugh

Mailing Address 8700 Auburn Folsom Road

Phone ( 916 ) 203 - 4067 FAX ( 916 ) 781 - 5927

PROPERTY OWNER Eric and Elizabeth Johanson

Mailing Address 4131 Birdseye View Ln, Placerville, CA 95667

Phone ( 530 ) 626-6874 FAX ( \_\_\_\_\_ )

LIST ADDITIONAL PROPERTY OWNERS ON SEPARATE SHEET IF APPLICABLE

ENGINEER/ARCHITECT Borges Architectural Group, INC

Mailing Address 1478 Stone Point Dr, Roseville, CA 95661

Phone ( 916 ) 782-7200 FAX ( \_\_\_\_\_ )

LOCATION: The property is located on the North side of Birdseye View Ln street or road

2.18 feet/miles North West of the intersection with Arrowbee Dr and Lotus Rd major street or road

in the Placerville area. PROPERTY SIZE 5.02 acres

X Eric W. Johanson signature of property owner or authorized agent Date 2-11-15

**FOR OFFICE USE ONLY**

Date 2/12/15 Fee \$ 4,900.00 Receipt # 29238 Rec'd by MOJANT Census \_\_\_\_\_

Zoning ME-10 GPD LDN Supervisor Dist 4 Sec/Twn/Rng 231 11N/9E

- PLANNING COMMISSION
- ZONING ADMINISTRATOR
- PLANNING DIRECTOR

**ACTION BY BOARD OF SUPERVISORS**

Hearing Date \_\_\_\_\_

Hearing Date \_\_\_\_\_

Approved  Denied (findings and/or conditions attached)

Approved  Denied (findings and/or conditions attached)

APPEAL:  Approved  Denied

Executive Secretary \_\_\_\_\_

Executive Secretary \_\_\_\_\_

Revised 07/02

**S 15-0004**

RECEIVED  
PLANNING DEPARTMENT  
FEB 12 PM 4:45



**PROJECT SUPPORT STATEMENT**

**DEVELOPMENT APPLICATION FOR VERIZON SITE "ARROWBEE LAKE"**

15 FEB 12 PM 4:4

**APN 105-140-06-10**

RECEIVED  
PLANNING DEPARTMENT

**4131 Birdseye View Ln, PLACERVILLE, CA. 95667**

**INTRODUCTION**

Verizon Wireless is seeking to improve communications service in the El Dorado County area near Lotus Road. Verizon would like to increase coverage and capacity in the area by constructing a new telecommunications facility in to improve service for both current and potential customers. Additionally, this network development will increase public safety within these areas and bring wireless service to areas that currently have poor capacity service.

This tower will help alleviate an area of poor coverage and inadequate capacity within this service area, which causes reoccurring lost calls and ineffective service. This site will relieve inadequate capacity in the area due to high cell phone and broadband usage in the greater Arrowbee Lake area. The proposed location of the tower is set within an unutilized portion of this parcel will be designed to comply with all County of El Dorado's wireless design guidelines. The proposed Verizon Communications facility will be located within a 33'x20' fenced compound including: (1) proposed 16' x 11'6" equipment shelter, a 30kw Diesel generator and a 90' stealth monopine, and is designed to blend in with the existing trees nearby. This tower will accommodate (3) sectors with (2) antennas per sector, (3) remote radio units (RRU's) per sector. This tower has been designed to accommodate future collocation by other carriers. This site is constructed atop a raised steel platform in order to minimize the amount of earth work needed to achieve a flat site. As such, very little soil will need to be graded for this site. This site lies in an area that is well screened from public views by se Rejected by Verizon, in adequate coverage capability. The proposed site is well screened from public view by several large mature trees and has been selected due to its location on a hill top, adequately positioned to provide coverage in the intended service area.

The parcel selected for this communication is owned by Eric and Elizabeth Johanson and totals 5.02 acres. The location for this project is situated approximately 1.77miles from Lotus Road.

This unmanned facility will provide service to area travelers, residents and businesses 24 hours a day, 7 days a week. This site will also serve as a back up to the existing landline service in the area and will provide improved mobile communications, essential to modern day commerce and recreation.

**ALTERNATIVE LOCATIONS REVIEWED BUT NOT SELECTED**

- 1310 Large Oak Drive      Landlord not interested in pursuing a lease with Verizon
- 4590 Stoney Ridge Rd.    Rejected by Verizon, in adequate coverage capability.
- 4540 Stoney Ridge Rd.    Rejected by Verizon, in adequate coverage capability.
- 4541 Burnt Oak Dr.        Rejected by Verizon, in adequate coverage capability.
- 1310 Large Oak Dr.        Landlord not interested in pursuing a lease with Verizon
- 4101 Birds Eye Court      Landlord not interested in pursuing a lease with Verizon

**SAFETY BENEFITS OF IMPROVED WIRELESS SERVICE**

Mobile phone use has become an extremely important system for public safety. Along roads and highways without public call boxes, mobile phones are often the only means for emergency roadside communication. Motorists with disabled vehicles (or worse) can use their phone to call in and request appropriate assistance. With good cellular coverage along important roadways, emergency response is

just a phone call away. Furthermore, as a back up system to traditional landline phone service, mobile phones have proven to be extremely important during natural disasters and other catastrophes.

Verizon has taken the responsibility for back-up service very seriously. As such, Verizon has incurred increased expense to install a standby diesel generator at this facility to insure quality communication for the surrounding community regardless of any disaster or catastrophe.

#### **CONVENIENCE BENEFITS OF IMPROVED WIRELESS SERVICE**

Modern day life has become increasingly dependent on instant communications. Whether it is a parent calling their child, spouse calling a spouse, or general contractor ordering materials to the jobsite, wireless phone service is no longer just a convenience. It has become a way of life and a way of business.

#### **COMPLIANCE WITH COUNTY DEVELOPMENT STANDARDS**

This project has been carefully designed to comply with all applicable standards.

#### **COMPLIANCE WITH FCC STANDARDS**

This project will not interfere with any TV, radio, telephone, satellite, or any other signals. Any interference would be against the Federal Law and would be a violation Verizon Wireless' FCC License. In addition, this project will conform to all FCC standards.

#### **TECHNOLOGY AND CONSUMER SERVICES THE CARRIER WILL PROVIDE ITS CUSTOMERS**

Verizon offers its customers multiple services such as, voice calls, text messaging, mobile email, picture/video messaging, mobile web, navigation, broadband access. Wireless service enhances public safety and emergency communications in the community. In rural areas such as the subject location, cellular phone service can cover much larger geographic areas than traditional landline phone service.

#### **FUTURE COLLOCATION OPPORTUNITIES**

The proposed site has been designed to allow for future co-location opportunities with other carriers. The land lease provides sufficient space for additional service providers and the tower and its foundation are designed for future equipment. This tower will eliminate the need for multiple towers within the same general vicinity as it has been designed to accommodate carriers should they come forward. Additional ground space would need to be leased from the landlord.

#### **LIGHTING**

Unless tower lighting is required by the FAA the only lighting on the facility will be a shielded motion sensor light by the door on the equipment shelter for servicing the equipment.

#### **NOISE**

The standby generator will be operated for approximately 15 minutes per week for maintenance purposes, and during power outages and disasters.

#### **HAZARDOUS MATERIAL**

A Hazardous Material Business Plan will also be submitted upon project completion, and stored on site after construction

#### **ENVIRONMENTAL SETTING**

The site is set within a parcel that is zoned LI and is consistent with application design standards in the area and environment.

#### **MAINTENANCE AND STANDY GENERATOR TESTING**

Verizon installs a standby diesel generator and batteries at many of its cell sites. The generator and batteries serve a vital role in Verizon emergency and disaster preparedness plan. In the event of a power outage, Verizon communications equipment will first transition over to the back-up batteries. The batteries can run the site for a few hours depending upon the demand placed upon the equipment. Should the power outage extend beyond the capacity of the batteries, the back-up generator will automatically start and continue to run the site. This two state back-up plan is an extremely important component of Verizon communications sites. Back-up batteries and generators allow Verizon communications sites to continue providing valuable communications services in the event of a power outage, natural disaster or other emergency.

A standby generator will be installed at the site to ensure quality and consistent coverage in the event of a power outage or disaster. This generator will be run for approximately 15 minutes per week for maintenance purposes, and during power outages and disasters.

A technician will visit the site approximately twice a month to check the facility and perform any necessary maintenance.

#### **CONSTRUCTION SCHEDULE**

The construction of the facility will be in compliance with all local rules and regulations. The typical duration is two months. The crew size will range from two to ten individuals.

Order No.  
Escrow No. 89829JT  
Loan No.

043916

15 FEB 12 PM 4:47

EL DORADO COUNTY CALIF.  
RECORD REQUESTED BY:

RECEIVED  
PLANNING DEPARTMENT

WHEN RECORDED MAIL TO:

First American Title Co.  
Aug 9 9 17 AM '88

ERIC W. JOHANSON  
ELIZABETH A. JOHANSON  
2151 Old Oakland Road, Space 527  
San Jose, CA 95131

JOHN W. CARR  
COUNTY RECORDER

SPACE ABOVE THIS LINE FOR RECORDER'S USE

MAIL TAX STATEMENTS TO:

PCS  
FREE

SAME AS ABOVE

DOCUMENTARY TRANSFER TAX \$ 45.65  
X. Computed on the consideration or value of property conveyed; OR  
Y. Computed on the consideration or value less fees or encumbrances  
remaining at time of sale.  
First American Title Insurance Co.  
Signature of Notary or Agent determining tax - Form Number

AFN: 105-140-06

GRANT DEED

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,  
BURYL L. CALAHAN and DONNA G. CALAHAN, husband and wife

herby GRANT(S) to  
ERIC W. JOHANSON and ELIZABETH A. JOHANSON, husband and wife as Joint Tenants

the real property in the City of unincorporated area  
County of El Dorado State of California, described as

A portion of the Northwest quarter of Section 23, Township 11 North, Range  
09 East, N.D.B.M., more particularly described as follows:

Parcel 2, as shown on that certain Parcel Map, filed in the office of the  
County Recorder, County of El Dorado, State of California, on May 27, 1980,  
in Book 26 of Parcel Maps, at page 135.

Dated August 3, 1988

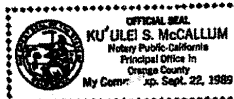
*Donna G. Calahan*  
DONNA G. CALAHAN

STATE OF CALIFORNIA  
COUNTY OF El Dorado  
On August 5, 1988

Before me, the undersigned, a Notary Public in and for said State, personally appeared *Buryl L. Calahan*  
and *Donna G. Calahan*

personally known to me or proved to me on the basis of satisfactory  
evidence) to be the persons whose names are subscribed to the  
within instrument and acknowledged to me that he/she/they executed  
the same.

WITNESS my hand and official seal.  
*Ku'ulei S. McCallum*



(This area for official stamp)  
BOOK 2893 PAGE 17

END DOCUMENT  
MAIL TAX STATEMENTS AS DIRECTED ABOVE

S 15-0004

FILE # \_\_\_\_\_  
DATE FILED \_\_\_\_\_

**EL DORADO COUNTY PLANNING DEPARTMENT  
ENVIRONMENTAL QUESTIONNAIRE**

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RECEIVED  
PLANNING DEPARTMENT

Project Title Arrowbee Lake Verizon Wireless New Build  
Lead Agency El Dorado County Planning Department  
Name of Owner Eric and Elizabeth Johanson Telephone ( 530 ) 626-6874  
Address 4131 Birdseye View Ln, Placerville, CA 95667  
Name of Applicant Verizon Wireless c/o Epic Wireless c/o Mark Lobaugh Telephone ( 916 ) 203 - 4067  
Address 8700 Auburn Folsom Road Suite 400, Granite Bay, CA 95746  
Project Location 4131 Birdseye View Ln, Placerville, CA 95667  
Assessor's Parcel Number(s) 105-140-06-10  
Acreage 5.02 Zoning LI

**Please answer all of the following questions as completely as possible. Subdivisions and other major projects will require a Technical Supplement to be filed together with this form.**

1. Type of project and description: Verizon Wireless proposes to construct a 90' tall Stealth monopine tower which will include three sectors, with two antennas per sector and 3 RRU's per sector. There will also be an Equipment Shelter and 30kVa diesel generator.
2. What is the number of units/parcels proposed? 1

**GEOLOGY AND SOILS**

3. Identify the percentage of land in the following slope categories:  
xx 0 to 10%           11 to 15%           16 to 20%           21 to 29%           over 30%
4. Have you observed any building or soil settlement, landslides, rock falls or avalanches on this property or in the nearby surrounding area? No
5. Could the project affect any existing agriculture uses or result in the loss of agricultural land?  
No

**DRAINAGE AND HYDROLOGY**

6. Is the project located within the flood plain of any stream or river? No  
If so, which one? \_\_\_\_\_
7. What is the distance to the nearest body of water, river, stream or year-round drainage channel?  
0.13 miles    Name of the water body? Arrowbee Lake
8. Will the project result in the direct or indirect discharge of silt or any other particles in noticeable amount into any lakes, rivers or streams? No

**S 15-0004**

Environmental Questionnaire  
Page 2

9. Will the project result in the physical alteration of a natural body of water or drainage way?  
If so, in what way? none

10. Does the project area contain any wet meadows, marshes or other perennially wet areas?  
No

**VEGETATION AND WILDLIFE**

11. What is the predominant vegetative cover on the site (trees, brush, grass, etc.)? Estimate percentage of each: Grass

12. How many trees of 6-inch diameter will be removed when this project is implemented?  
0

**FIRE PROTECTION**

13. In what structural fire protection district (if any) is the project located? Pilot Hill

14. What is the nearest emergency source of water for fire protection purposes (hydrant, pond, etc.)? 0.13 miles

15. What is the distance to the nearest fire station? 4.28 miles

16. Will the project create any dead-end roads greater than 500 feet in length? No

17. Will the project involve the burning of any material including brush, trees and construction materials? No

**NOISE QUALITY**

18. Is the project near an industrial area, freeway, major highway or airport? No  
If so, how far? \_\_\_\_\_

19. What types of noise would be created by the establishment of this land use, both during and after construction? Generator operates once every month for 15 mins at 36 dB at 23 ft (equivalent to normal conversation at 3 ft.

**AIR QUALITY**

20. Would any noticeable amounts of air pollution, such as smoke, dust or odors, be produced by this project? Minimal, AQMD form to be filed. Equipment is exempt due to low HP engine.

**WATER QUALITY**

21. Is the proposed water source  public or  private,  treated or  untreated?  
Name the system: N/A

22. What is the water use (residential, agricultural, industrial or commercial)? No water use.

**AESTHETICS**

23. Will the project obstruct scenic views from existing residential areas, public lands, public bodies of water or roads? No

**ARCHAEOLOGY/HISTORY**

24. Do you know of any archaeological or historical areas within the boundaries or adjacent to the project? (e.g., Indian burial grounds, gold mines, etc.) None known

**SEWAGE**

25. What is the proposed method of sewage disposal?  septic system  sanitation district  
Name of district: NA

26. Would the project require a change in sewage disposal methods from those currently used in the vicinity? NA

**TRANSPORTATION**

27. Will the project create any traffic problems or change any existing roads, highways or existing traffic patterns? No

28. Will the project reduce or restrict access to public lands, parks or any public facilities?  
No

**GROWTH-INDUCING IMPACTS**

29. Will the project result in the introduction of activities not currently found within the community?  
No

30. Would the project serve to encourage development of presently undeveloped areas, or increases in development intensity of already developed areas (include the introduction of new or expanded public utilities, new industry, commercial facilities or recreation activities)?  
No

31. Will the project require the extension of existing public utility lines? No  
If so, identify and give distances: \_\_\_\_\_

Environmental Questionnaire  
Page 4

**GENERAL**

- 32. Does the project involve lands currently protected under the Williamson Act or an Open Space Agreement? No
- 33. Will the project involve the application, use or disposal of potentially hazardous materials, including pesticides, herbicides, other toxic substances or radioactive material? Diesel fuel for generator.
- 34. Will the proposed project result in the removal of a natural resource for commercial purposes (including rock, sand, gravel, trees, minerals or top soil)? No
- 35. Could the project create new, or aggravate existing health problems (including, but not limited to, flies, mosquitos, rodents and other disease vectors)? No
- 36. Will the project displace any community residents? No

**DISCUSS ANY YES ANSWERS TO THE PREVIOUS QUESTIONS** (attached additional sheets if necessary)

Diesel generator included, see drawings for specifications.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**MITIGATION MEASURES** (attached additional sheets if necessary)

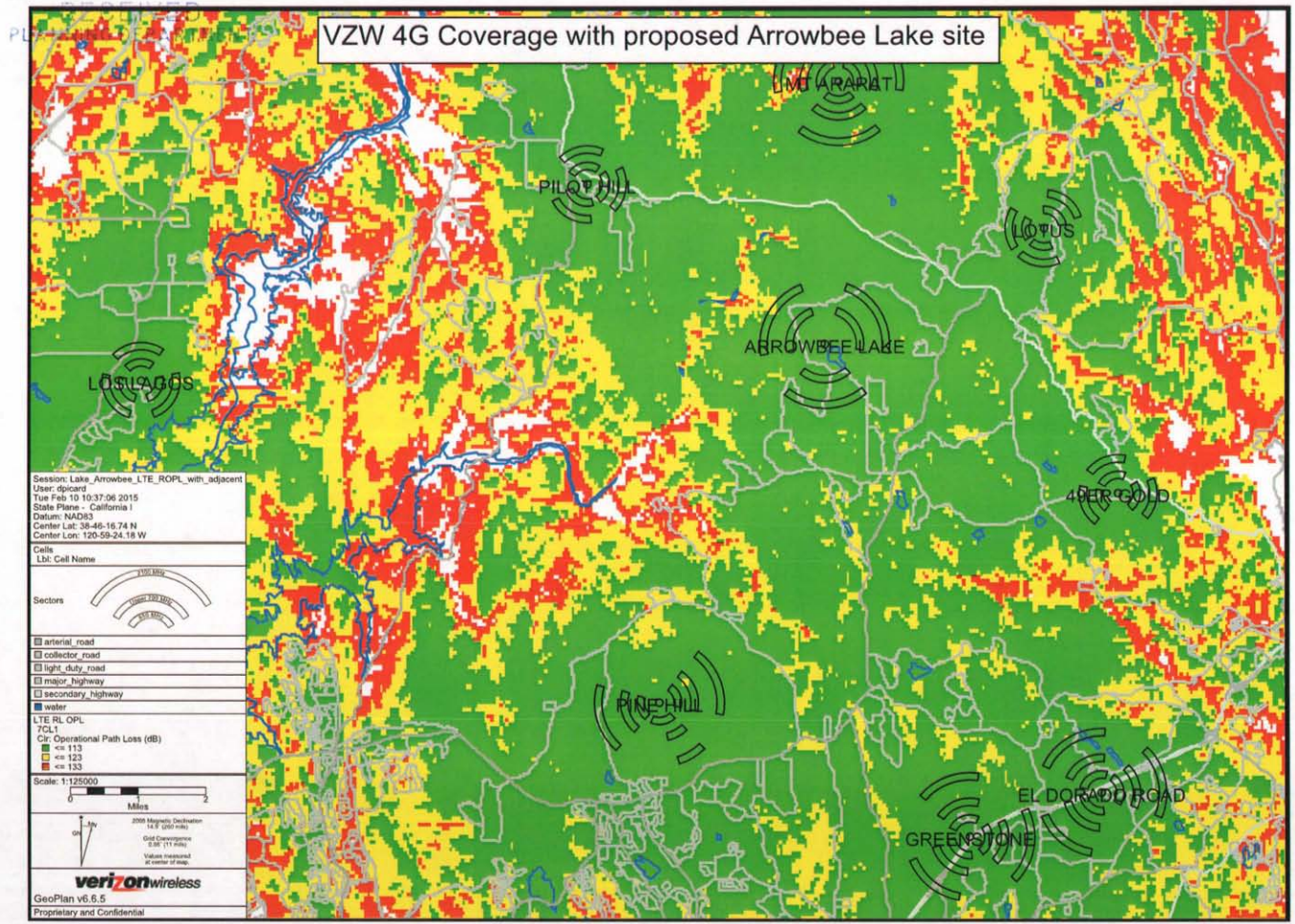
Proposed mitigation measures for any of the above questions where there will be an adverse impact:

\_\_\_\_\_  
\_\_\_\_\_  
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\_\_\_\_\_

Form completed by: \_\_\_\_\_ Date: \_\_\_\_\_



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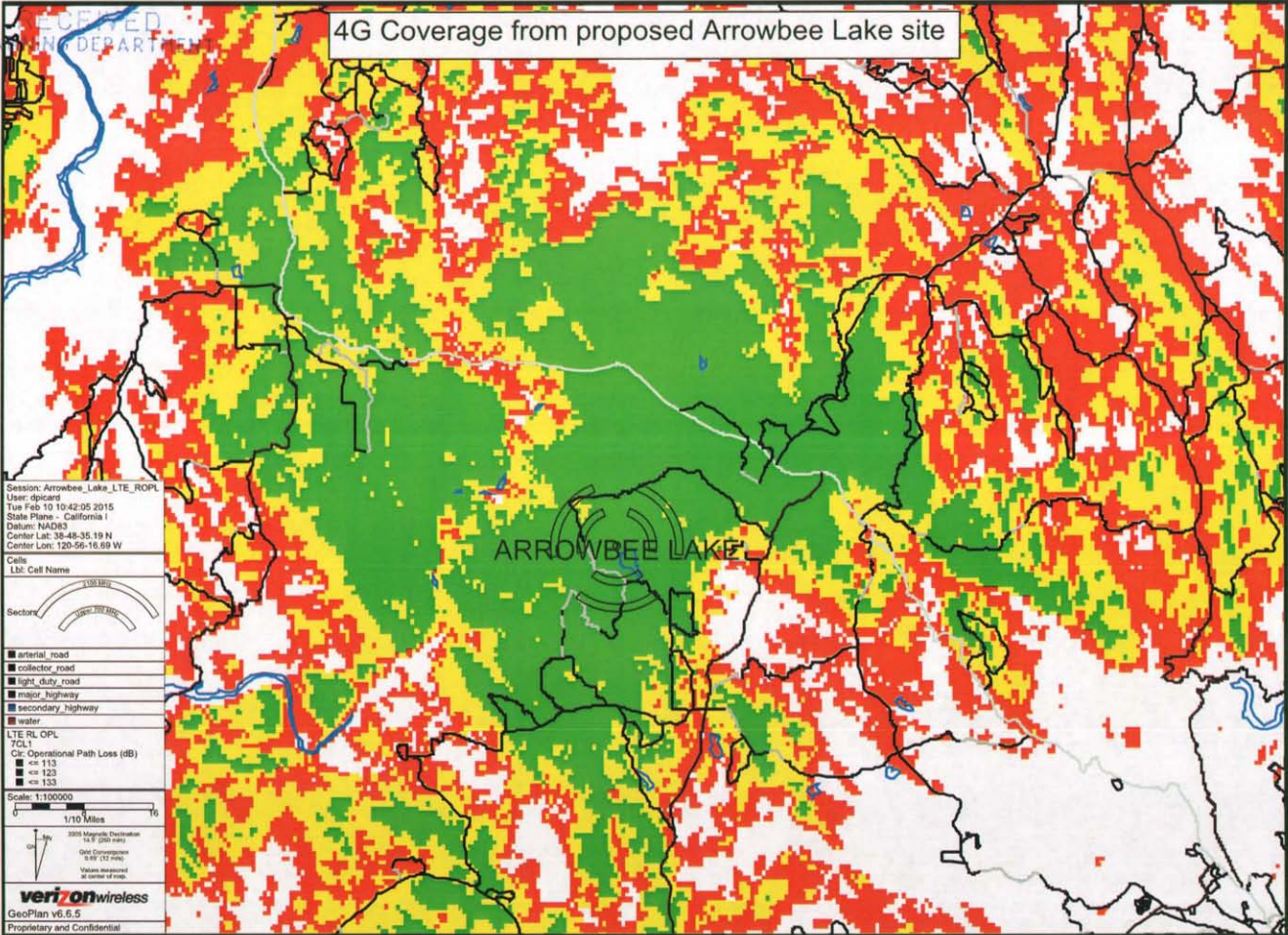


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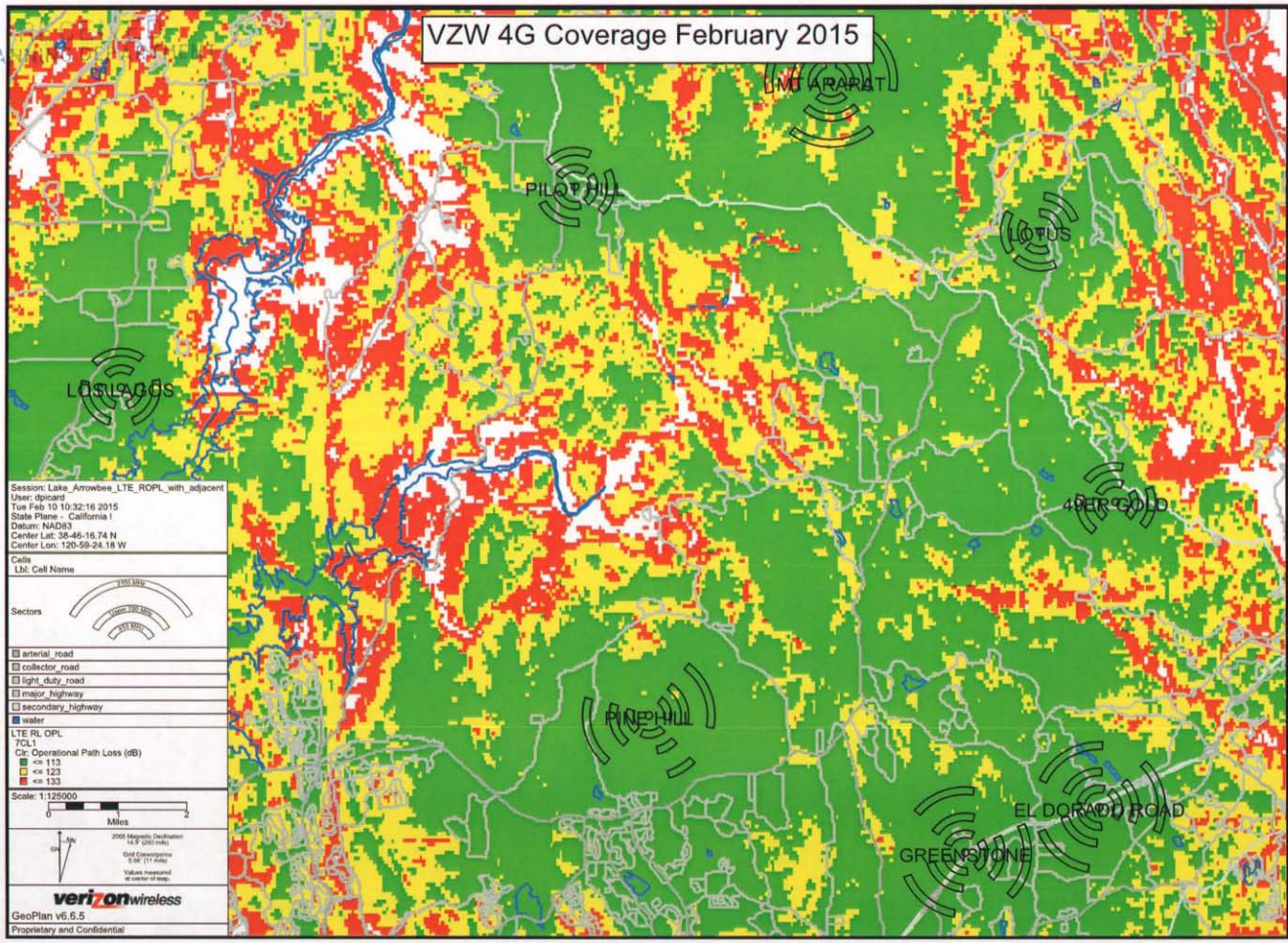
4G Coverage from proposed Arrowbee Lake site



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PLA

VZW 4G Coverage February 2015



Version Date: October 01, 2014

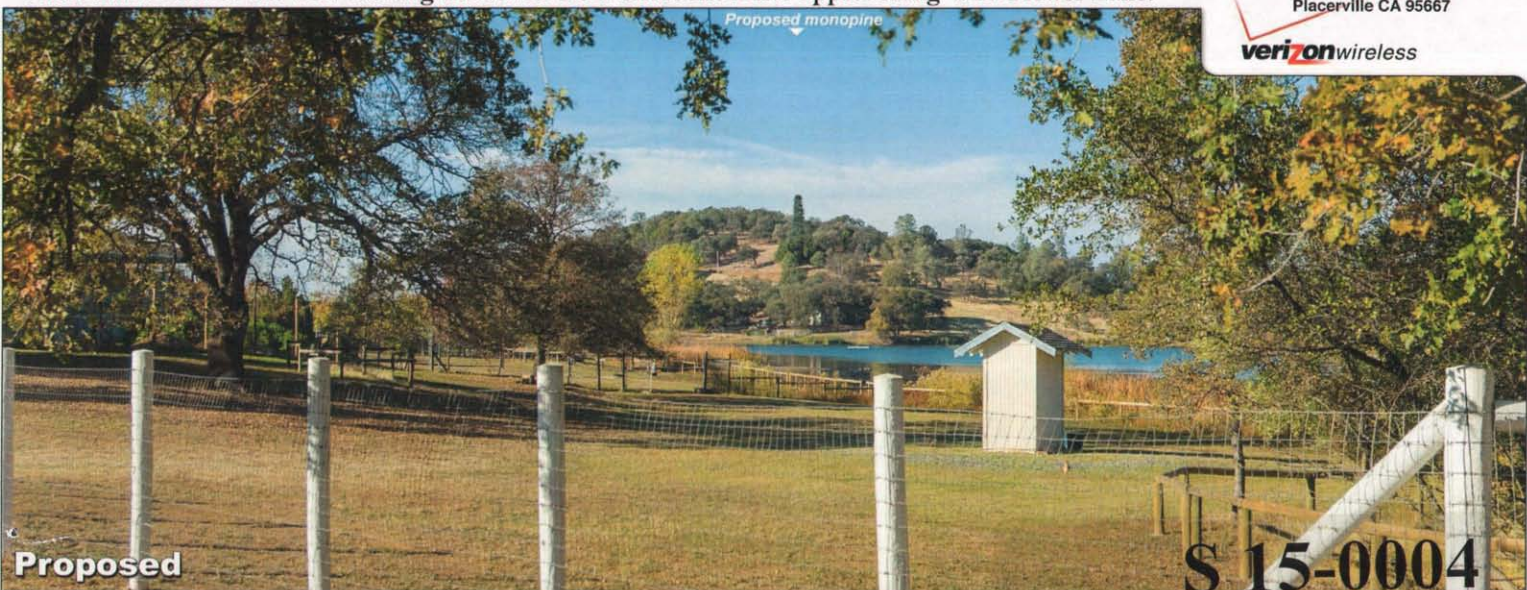


**Existing**

Photosimulation of the view looking northwest from Shoreline Drive approaching Wild Flower Lane.

**Arrowbee Lake**

4131 Birdseye View Lane  
Placerville CA 95667

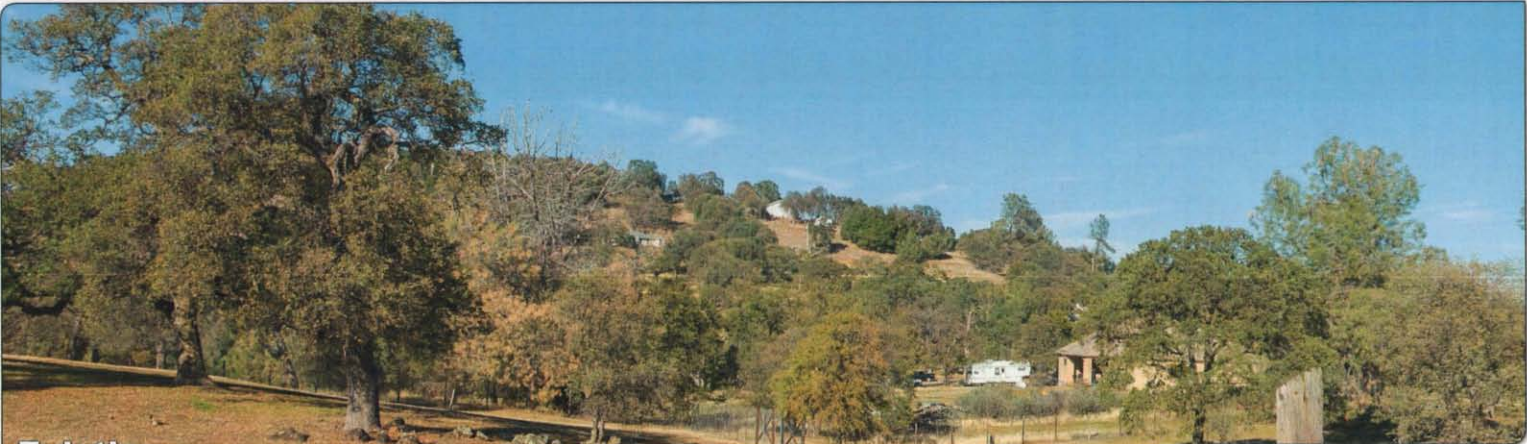


**Proposed**

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**Existing**

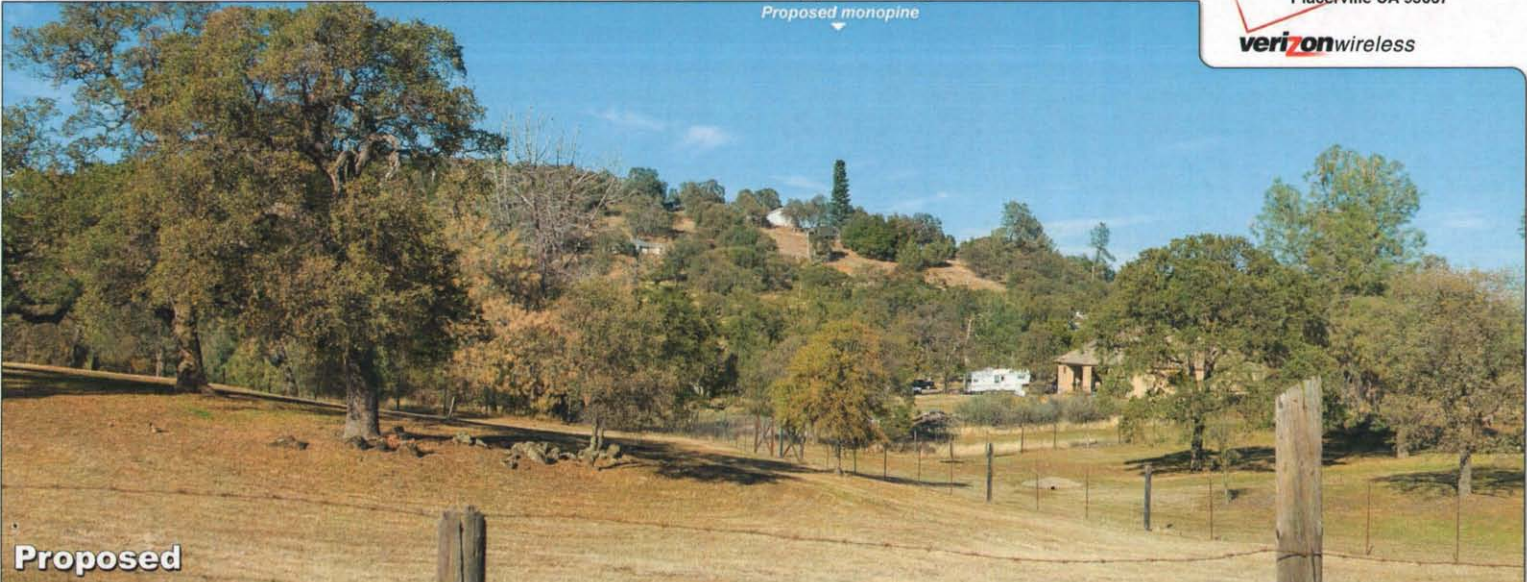
Photosimulation of the view looking north from Trail's End Road approaching Trails End Court.

**Arrowbee Lake**

4131 Birdseye View Lane  
Placerville CA 95667



Proposed monopine



**Proposed**

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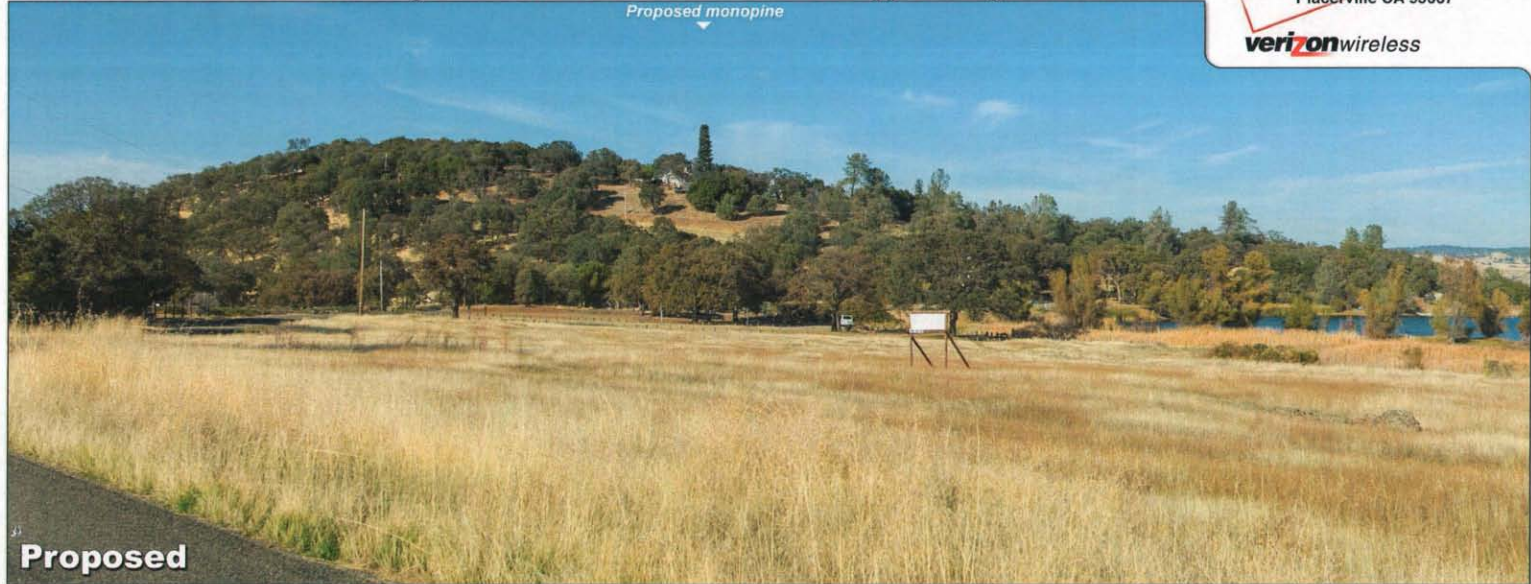
**Existing**

Photosimulation of the view looking north-northwest from Shoreline Drive approaching Trails End Drive.

**Arrowbee Lake**  
 4131 Birdseye View Lane  
 Placerville CA 95667



*Proposed monopine*




**Proposed**

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Page 36 of 123

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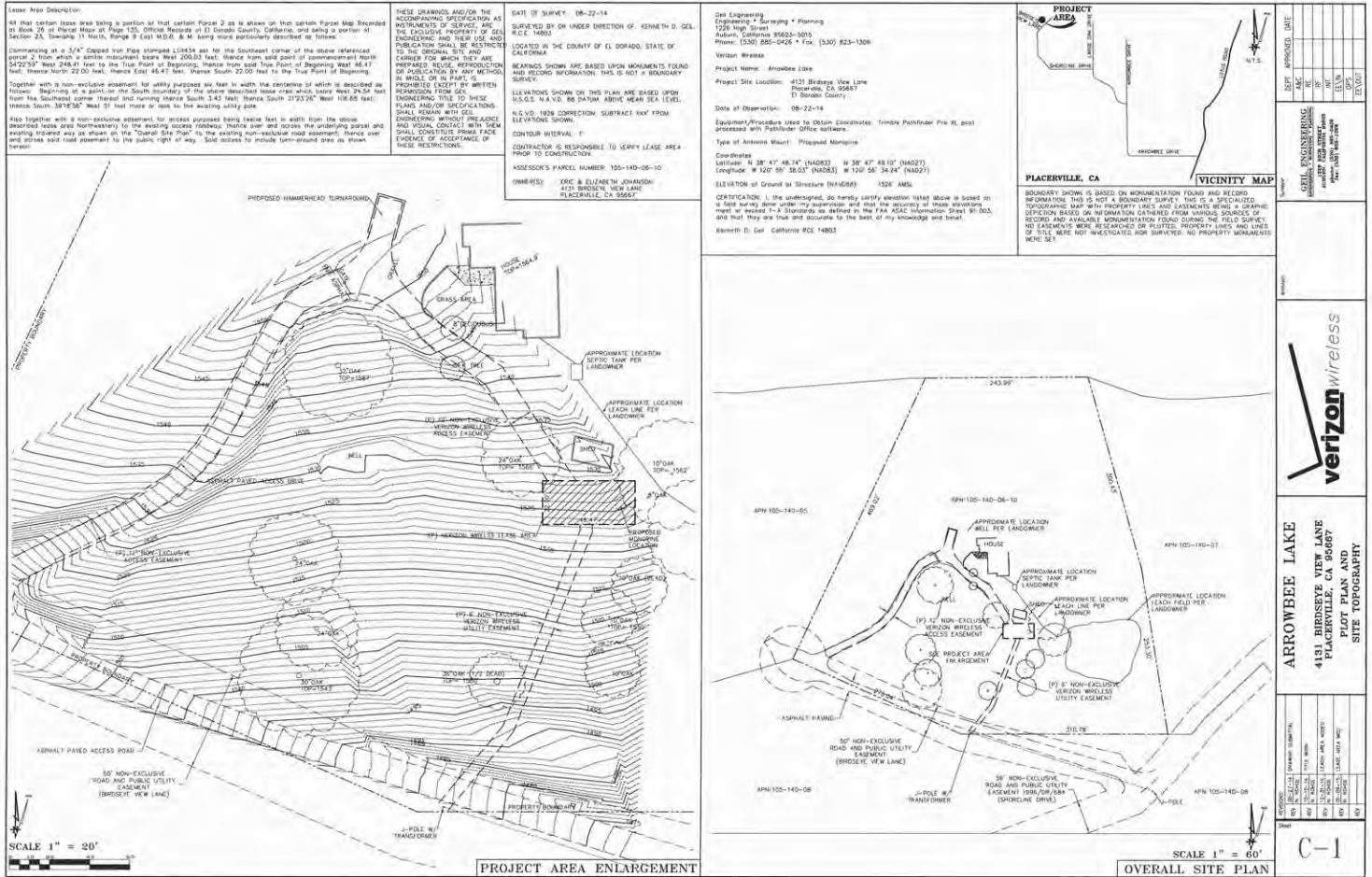
**PROJECT : Arrowbee Lake - New Build**  
**4131 BIRDSEYE VIEW LANE**  
**PLACERVILLE, CA 95667**

**PROJECT NO : 20130913306**  
**LOCATION NO: 269257**  
**AREA: West**  
**REGION: Northern California / Nevada**  
**MARKET: Sacramento / Reno (NV)**  
**JURISDICTION: El Dorado County**

PROJECT DESCRIPTION	PROJECT INFORMATION	PROJECT TEAM	SHEET INDEX	REV																											
<p>1. THE SITE HAS BEEN DETERMINED TO BE COMMERCIAL (C-1) ZONING.</p> <p>2. THE SITE IS NOT PREVIOUSLY ZONED FOR COMMERCIAL (C-1) ZONING.</p> <p>3. THE SITE IS NOT PREVIOUSLY ZONED FOR COMMERCIAL (C-1) ZONING.</p> <p>4. THE SITE IS NOT PREVIOUSLY ZONED FOR COMMERCIAL (C-1) ZONING.</p> <p>5. THE SITE IS NOT PREVIOUSLY ZONED FOR COMMERCIAL (C-1) ZONING.</p> <p>6. THE SITE IS NOT PREVIOUSLY ZONED FOR COMMERCIAL (C-1) ZONING.</p> <p>7. THE SITE IS NOT PREVIOUSLY ZONED FOR COMMERCIAL (C-1) ZONING.</p> <p>8. THE SITE IS NOT PREVIOUSLY ZONED FOR COMMERCIAL (C-1) ZONING.</p> <p>9. THE SITE IS NOT PREVIOUSLY ZONED FOR COMMERCIAL (C-1) ZONING.</p> <p>10. THE SITE IS NOT PREVIOUSLY ZONED FOR COMMERCIAL (C-1) ZONING.</p>	<p><b>Property Information:</b>          Site Name: ARROWBEE LAKE          Site Number: 20130913306          Street Name: ARROWBEE LAKE          Site Address: 4131 BIRDSEYE VIEW LANE          PLACERVILLE, CA 95667          A.P.N. Number: 05-140-06-10          Current Use: U          Zoning: U          Jurisdiction: EL DORADO COUNTY          Ground Elevation: 1,537' AAGL          School District: Placerville Union School District          New District: Placerville Production District</p> <p><b>Property Owner:</b>          ERIC A. JUNGHEIM JOHNSON          4131 BIRDSEYE VIEW LANE          PLACERVILLE, CA 95667</p> <p><b>Power Agency:</b>          PG&amp;E          11000 Street, Sacramento          CA 95828</p> <p><b>Telephone Agency:</b>          AT&amp;T Customer Support          525 MARKET STREET          SAN FRANCISCO, CA 94102          SF, (415) 310-2333</p>	<p><b>Construction Mgr.:</b>          ERIC WIRELESS GROUP, INC.          8300 AVENUE FOLSOM ROAD, SUITE 400          GRANITE BAY, CA 95746          contact: PETER MORGAN          email: peter.morgan@ericwireless.net          cell: (916) 938-8887</p> <p><b>Architect / Engineer:</b>          BORISZ ARCHITECTURAL GROUP, INC.          1475 BONE FORD DRIVE, SUITE 202          RIDGEVILLE, CA 95641          contact: BRIAN F. WINGLOM          email: brian@boriszarch.com          cell: (916) 382-7200</p> <p><b>Applicant / Licensee:</b>          VERIZON WIRELESS          200 PARKSHORE DRIVE          FOLSOM, CA 95630</p> <p><b>Structural Engineer:</b>          NORMAN SCHULZ STRUCTURAL ENGINEER          8022 SERRA BLVD.          FAIR OAKS, CA 95628          contact: NORMAN SCHULZ          email: norman@nsc.com          cell: (916) 330-1565</p> <p><b>Survey:</b>          D&amp;J Engineering          1226 High Street          Auburn, CA 95603-8819          contact: Paul Korman          email: paul@dkj-engineer.com          cell: (530) 885-0324</p> <p><b>RF Engineer:</b>          VERIZON WIRELESS          830 PARKSHORE DRIVE          FOLSOM, CA 95630          contact: MICHELLE MALANDA          email: michelle.malanda@verizonwireless.com          cell: (916) 382-7262</p> <p><b>Agent for applicant and Planning:</b>          CNS Zoning Mgr.          ERIC WIRELESS GROUP, INC.          8300 AVENUE FOLSOM ROAD, SUITE 400          GRANITE BAY, CA 95746          contact: BRIAN WINGLOM          email: brian@boriszarch.com          cell: (916) 382-6627</p>	<p>A-0 TITLE SHEET</p> <p>C-1 PLOT PLAN AND SITE TOPOGRAPHY</p> <p>A-1 OVERALL SITE PLAN</p> <p>A-2 ENLARGED SITE PLAN</p> <p>A-3 EQUIPMENT &amp; ANTENNA LAYOUTS</p> <p>A-4 ELEVATIONS</p> <p>A-4.1 ELEVATIONS</p> <p>A-5.1 GENERATOR SPECIFICATION</p> <p>A-5.2 HVAC UNIT SPECIFICATION</p> <p>SH-1 SHELTER PLANS</p>	<p>C</p> <p>C</p> <p>C</p> <p>C</p> <p>C</p> <p>C</p> <p>C</p> <p>C</p> <p>C</p> <p>C</p>																											
<p><b>CODE COMPLIANCE</b></p> <p>ALL WORK SHALL BE IN ACCORDANCE WITH THE CALIFORNIA BUILDING CODE (CBC) AND THE CALIFORNIA ELECTRICAL CODE (CEC) AS ADOPTED BY EL DORADO COUNTY. APPROVED BY THE BOARD OF SUPERVISORS OF EL DORADO COUNTY (WWW.EDC.CA.GOV).</p> <p>1. THE CALIFORNIA ADMINISTRATION CODE (CALIFORNIA) SHALL BE IN CODE OR RECALIBRATED.</p> <p>2. THE CALIFORNIA ADMINISTRATION CODE (CALIFORNIA) SHALL BE IN CODE OR RECALIBRATED.</p> <p>3. THE CALIFORNIA ADMINISTRATION CODE (CALIFORNIA) SHALL BE IN CODE OR RECALIBRATED.</p> <p>4. THE CALIFORNIA ADMINISTRATION CODE (CALIFORNIA) SHALL BE IN CODE OR RECALIBRATED.</p> <p>5. THE CALIFORNIA ADMINISTRATION CODE (CALIFORNIA) SHALL BE IN CODE OR RECALIBRATED.</p> <p>6. THE CALIFORNIA ADMINISTRATION CODE (CALIFORNIA) SHALL BE IN CODE OR RECALIBRATED.</p> <p>7. THE CALIFORNIA ADMINISTRATION CODE (CALIFORNIA) SHALL BE IN CODE OR RECALIBRATED.</p> <p>8. THE CALIFORNIA ADMINISTRATION CODE (CALIFORNIA) SHALL BE IN CODE OR RECALIBRATED.</p> <p>9. THE CALIFORNIA ADMINISTRATION CODE (CALIFORNIA) SHALL BE IN CODE OR RECALIBRATED.</p> <p>10. THE CALIFORNIA ADMINISTRATION CODE (CALIFORNIA) SHALL BE IN CODE OR RECALIBRATED.</p>	<p><b>VICINITY MAP</b></p> 	<p><b>DIRECTIONS FROM VERIZON WIRELESS</b></p> <p>DIRECTIONS FROM VERIZON WIRELESS OFFICE AT 200 PARKSHORE DRIVE, FOLSOM, CA</p> <ol style="list-style-type: none"> <li>From Folsom Road (SR 99) heading North (N) to Highway 99 (SR 99) heading East (E).</li> <li>From Highway 99 (SR 99) heading East (E) to Highway 99 (SR 99) heading North (N).</li> <li>From Highway 99 (SR 99) heading North (N) to Highway 99 (SR 99) heading East (E).</li> <li>From Highway 99 (SR 99) heading East (E) to Highway 99 (SR 99) heading North (N).</li> <li>From Highway 99 (SR 99) heading North (N) to Highway 99 (SR 99) heading East (E).</li> <li>From Highway 99 (SR 99) heading East (E) to Highway 99 (SR 99) heading North (N).</li> <li>From Highway 99 (SR 99) heading North (N) to Highway 99 (SR 99) heading East (E).</li> <li>From Highway 99 (SR 99) heading East (E) to Highway 99 (SR 99) heading North (N).</li> <li>From Highway 99 (SR 99) heading North (N) to Highway 99 (SR 99) heading East (E).</li> <li>From Highway 99 (SR 99) heading East (E) to Highway 99 (SR 99) heading North (N).</li> </ol>	<p style="text-align: center;"><b>VERIZON SIGNATURE BLOCK</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">DISCIPLINE:</td> <td style="width: 30%;">SIGNATURE:</td> <td style="width: 20%;">DATE:</td> </tr> <tr> <td>SITE ACQUISITION:</td> <td></td> <td></td> </tr> <tr> <td>CONSTRUCTION:</td> <td></td> <td></td> </tr> <tr> <td>RF:</td> <td></td> <td></td> </tr> <tr> <td>MICROWAVE:</td> <td></td> <td></td> </tr> <tr> <td>TELECOM:</td> <td></td> <td></td> </tr> <tr> <td>EQUIPMENT:</td> <td></td> <td></td> </tr> <tr> <td>PROJECT ADMINISTRATOR:</td> <td></td> <td></td> </tr> <tr> <td>WD ADMINISTRATOR:</td> <td></td> <td></td> </tr> </table>	DISCIPLINE:	SIGNATURE:	DATE:	SITE ACQUISITION:			CONSTRUCTION:			RF:			MICROWAVE:			TELECOM:			EQUIPMENT:			PROJECT ADMINISTRATOR:			WD ADMINISTRATOR:			<p>PREPARED FOR:</p>  <p>288 Piedmont Drive Folsom, California 95630</p> <p>CONTRACTOR:</p>  <p>288 Piedmont Drive Folsom, California 95630</p> <p>CONSULTANT:</p> <p>ARCHITECT/ENGINEER:</p>  <p>288 Piedmont Drive Folsom, California 95630</p> <p>PROJECT NO: 20130913306          LOCATION NO: 269257          DRAWN BY: J.V.M.          CHECKED BY: B.F.W.</p> <p>DATE: 01/05/15          100% ZD Submittal</p> <p>SHEET TITLE:          TITLE SHEET</p> <p>SHEET NUMBER:          A-0</p>
DISCIPLINE:	SIGNATURE:	DATE:																													
SITE ACQUISITION:																															
CONSTRUCTION:																															
RF:																															
MICROWAVE:																															
TELECOM:																															
EQUIPMENT:																															
PROJECT ADMINISTRATOR:																															
WD ADMINISTRATOR:																															
<p><b>OCCUPANCY AND CONSTRUCTION TYPE</b></p> <p>1. OCCUPANCY: COMMERCIAL</p> <p>2. CONSTRUCTION: COMMERCIAL</p> <p>3. OCCUPANCY: COMMERCIAL</p> <p>4. CONSTRUCTION: COMMERCIAL</p> <p>5. OCCUPANCY: COMMERCIAL</p> <p>6. CONSTRUCTION: COMMERCIAL</p> <p>7. OCCUPANCY: COMMERCIAL</p> <p>8. CONSTRUCTION: COMMERCIAL</p> <p>9. OCCUPANCY: COMMERCIAL</p> <p>10. CONSTRUCTION: COMMERCIAL</p>	<p><b>SPECIAL INSPECTIONS</b></p> <p>POST-CASTED CONCRETE AND/OR ANCHORS</p>	<p><b>GENERAL CONTRACTOR NOTES</b></p> <p>DO NOT SCALE DRAWINGS</p> <p>THIS DRAWING AND SPECIFICATIONS TO BE USED AS THE ONLY CONTRACT DOCUMENTS FOR THE PROJECT AND SHALL INCLUDE THE CONTRACTOR'S OBLIGATION TO VERIFY THE ACCURACY OF ALL INFORMATION PROVIDED BY THE OWNER AND TO BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF THE PROJECT AND SHALL INCLUDE THE CONTRACTOR'S OBLIGATION TO VERIFY THE ACCURACY OF ALL INFORMATION PROVIDED BY THE OWNER AND TO BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF THE PROJECT.</p>  <p>800-227-2600          THE DIGI ALERT SERVICE IS A SERVICE OF THE CALIFORNIA STATE FIRE MARSHAL'S OFFICE.</p>																													

S 15-0004

SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE  
ZAB 06-27-19  
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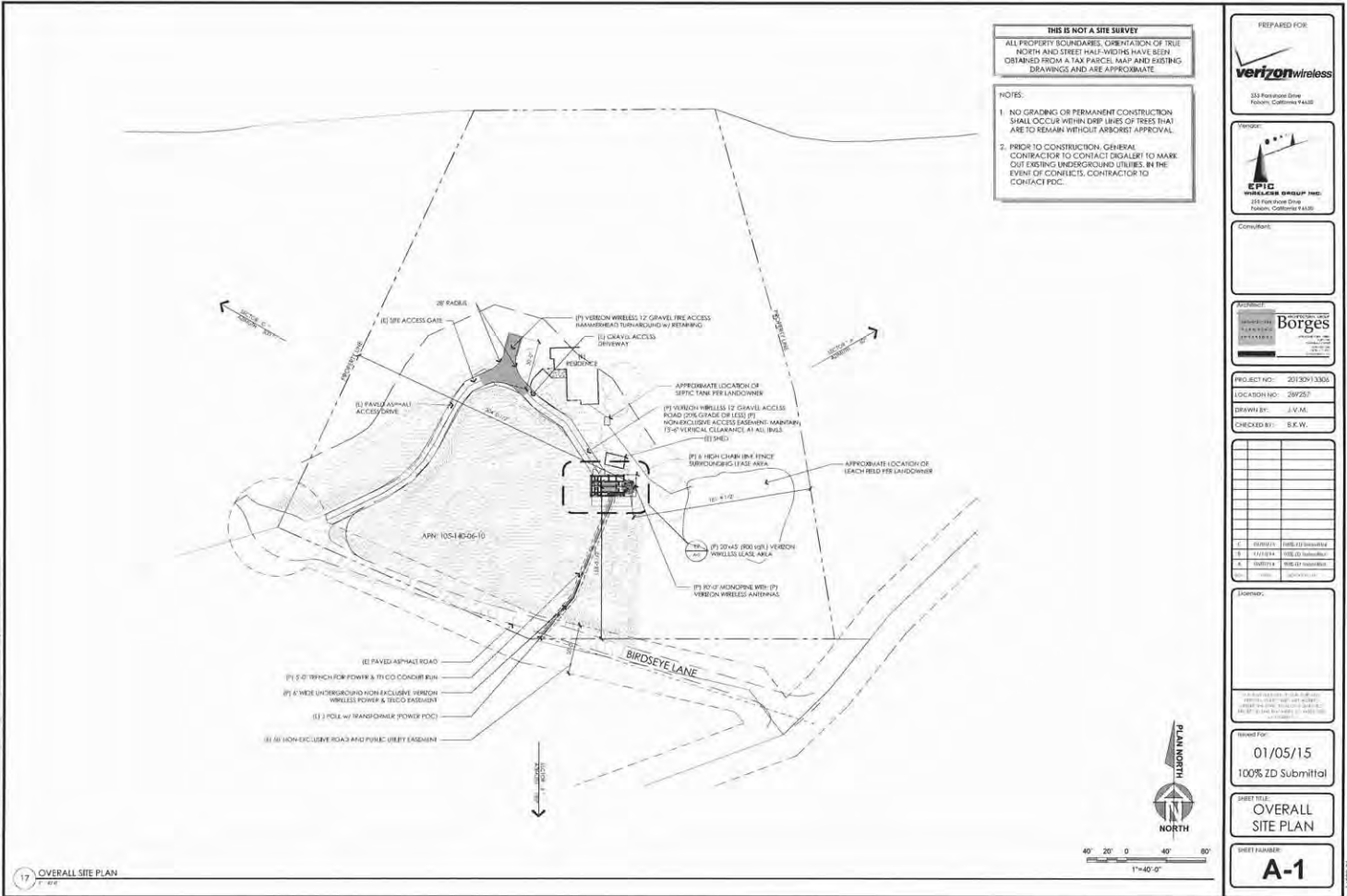




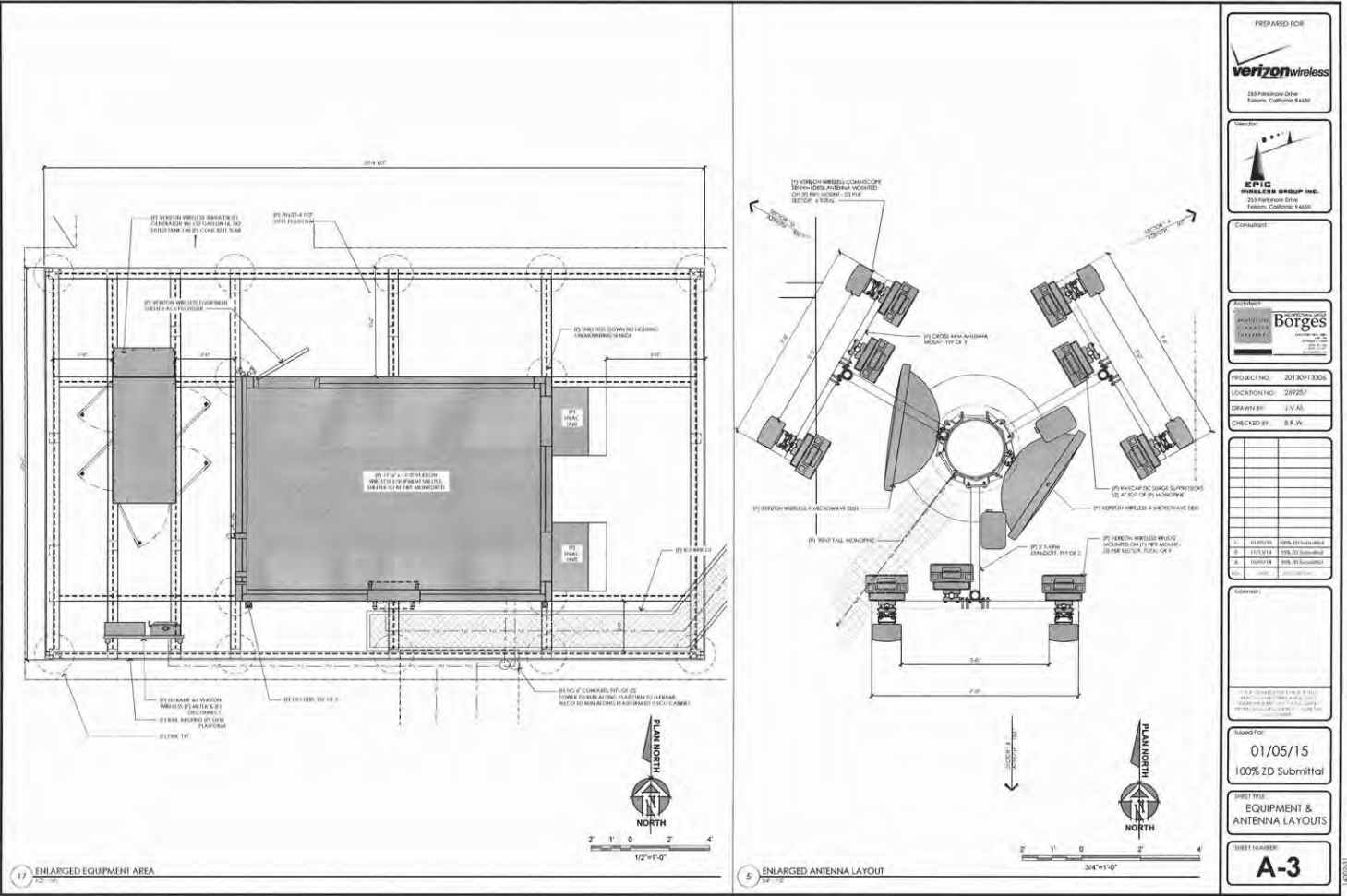
SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

ZAB 06-27-19

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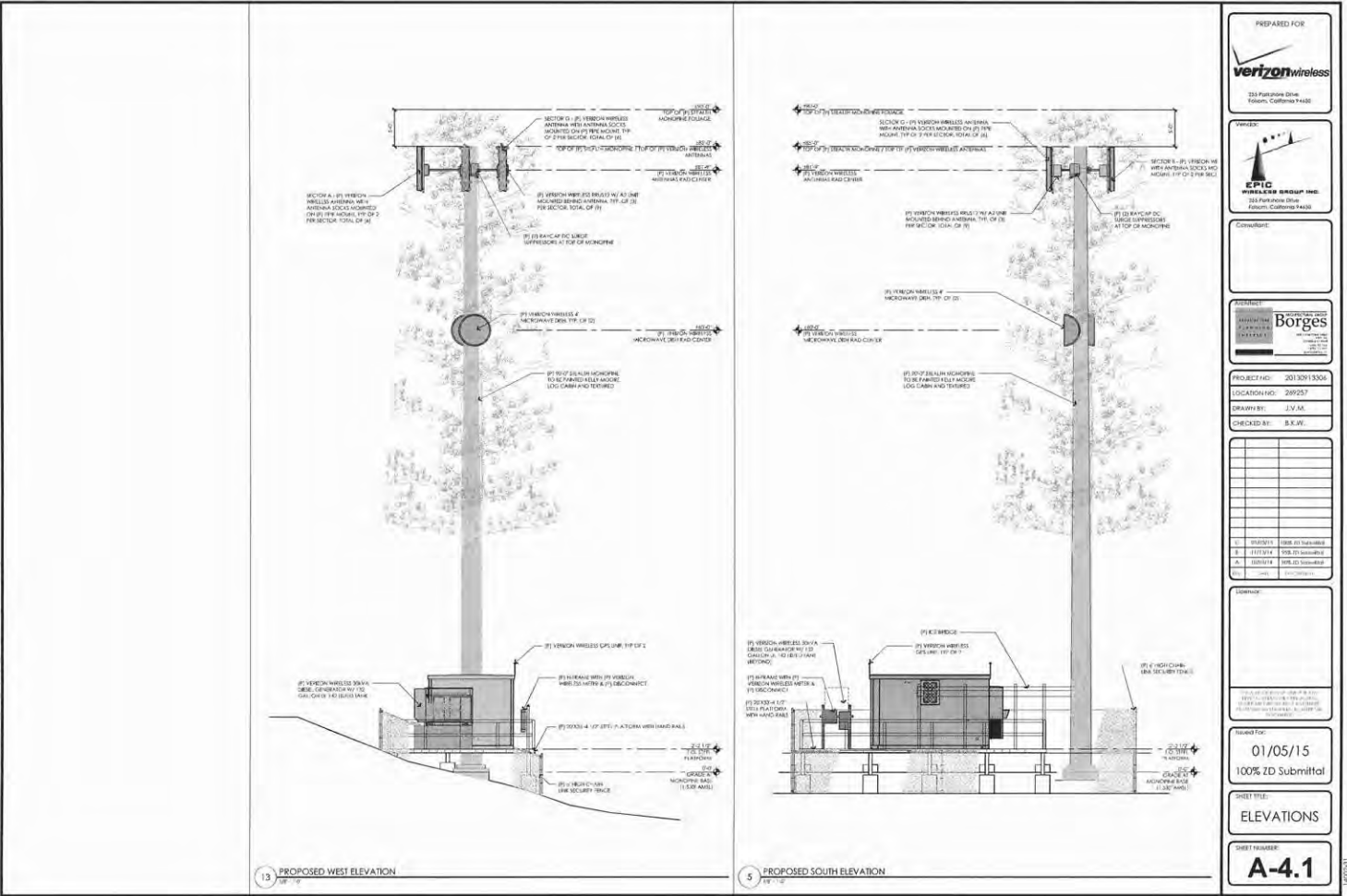




SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

ZAB 06-27-19

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PREPARED FOR

**verizon wireless**  
233 Parkshore Drive  
Folsom, California 94601

PROJECT

**EPIC WIRELESS GROUP INC.**  
233 Parkshore Drive  
Folsom, California 94601

CONTRACT

ADDRESS

**Borges**  
233 Parkshore Drive  
Folsom, California 94601

PROJECT NO: 2018013006  
LOCATION NO: 299257  
DRAWN BY: J.V.M.  
CHECKED BY: B.K.W.

1	ISSUED FOR	2018013006
2	ISSUED FOR	2018013006
3	ISSUED FOR	2018013006
4	ISSUED FOR	2018013006
5	ISSUED FOR	2018013006

DATE: 01/05/15  
100% 2D Submittal

SHEET TITLE:  
**ELEVATIONS**

SHEET NUMBER:  
**A-4.1**



SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE
ZAB 06-27-19
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SD030 Industrial Diesel Generator Set
Industrial Diesel Generator Set
30 kW Diesel
Steadily Power Ratings
37 SVA 30kW 60 Hz
Prime Power Rating
30VA 24kW 60 Hz

SD030 application and engineering data
GENERAL INDUSTRIAL
30 kW Diesel
GENERAL INDUSTRIAL
application and engineering data
GENERAL INDUSTRIAL
30 kW Diesel

SD030 operating data (dB)
GENERAL INDUSTRIAL
30 kW Diesel
GENERAL INDUSTRIAL
operating data (dB)
GENERAL INDUSTRIAL
30 kW Diesel

VERIZON WIRELESS
EPIC WIRELESS GROUP INC.
Borges
PROJECT NO: 2013071336
LOCATION: 2827
DRAWN BY: JVA
CHECKED BY: B.E.W.

SD030 standard features and options
GENERAL INDUSTRIAL
30 kW Diesel
GENERAL INDUSTRIAL
standard features and options
GENERAL INDUSTRIAL
30 kW Diesel

SD030 dimensions, weights and sound levels
GENERAL INDUSTRIAL
30 kW Diesel
GENERAL INDUSTRIAL
dimensions, weights and sound levels
GENERAL INDUSTRIAL
30 kW Diesel

SD030 2.4 Liter Level 2A
GENERAL INDUSTRIAL
30 kW Diesel
GENERAL INDUSTRIAL
2.4 Liter Level 2A
GENERAL INDUSTRIAL
30 kW Diesel

01/05/15
100% 2D Submittal
GENERATOR SPECIFICATION
A-5.1

**Bard**

**THE WALL-MOUNT™ STEP CAPACITY AIR CONDITIONERS**  
Integrated Part Load Valve (PLV) Efficiency Up To 1.3 BTU/WATT

**WAZ3 - WAZ5 Right Side Control Panel**  
18.25" x 28.50" x 16.50" (558 x 726 x 508 mm)  
2 to 5 Ton (35.43kW to 36.50kW Btu/h)

**GREEN REFRIGERANT R-410A**

The Bard WAZ™ Series is the world's most energy efficient air conditioner...  
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The Bard WAZ™ Series is the world's most energy efficient air conditioner...

**Environmental Features:**  
• **Energy Efficient:** The Bard WAZ™ Series is the world's most energy efficient air conditioner...  
• **Green Refrigerant:** The Bard WAZ™ Series uses R-410A green refrigerant...  
• **Quiet Operation:** The Bard WAZ™ Series is designed to operate quietly...  
• **Energy Efficient:** The Bard WAZ™ Series is the world's most energy efficient air conditioner...  
• **Green Refrigerant:** The Bard WAZ™ Series uses R-410A green refrigerant...  
• **Quiet Operation:** The Bard WAZ™ Series is designed to operate quietly...

**Model Selection Table:**

Model	Capacity (Tons)	Capacity (kW)	Capacity (Btu/h)
WAZ3	2.0	7.1	24,000
WAZ4	2.5	8.8	30,000
WAZ5	3.0	10.5	36,000
WAZ6	3.5	12.3	42,000
WAZ7	4.0	14.0	48,000
WAZ8	4.5	15.8	54,000
WAZ9	5.0	17.6	60,000

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WAZ8	4.5	15.8	54,000
WAZ9	5.0	17.6	60,000

**Dimensions of Outdoor Units - WAZ3-WAZ9**

**Model Selection Table:**

Model	Capacity (Tons)	Capacity (kW)	Capacity (Btu/h)
WAZ3	2.0	7.1	24,000
WAZ4	2.5	8.8	30,000
WAZ5	3.0	10.5	36,000
WAZ6	3.5	12.3	42,000
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WAZ5	3.0	10.5	36,000
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**Dimensions of Outdoor Units - WAZ3-WAZ9**

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WAZ7	4.0	14.0	48,000
WAZ8	4.5	15.8	54,000
WAZ9	5.0	17.6	60,000

**PREPARED FOR:**  
verizonwireless

**PROJECT NO.:** 2010013206  
**LOCATION NO.:** 369227  
**DRAWN BY:** J.Y.M.  
**CHECKED BY:** B.J.W.

**DATE:** 01/05/15  
**100% ZD Submittal**

**SHEET TITLE:** HVAC UNIT SPECIFICATION

**SHEET NUMBER:** A-5.2

**Typical Sound Power Level (SWL) for Outdoor Units - WAZ3-WAZ9**

**WAZ3 Sound Data Matrix (SWL @ 10 feet)**

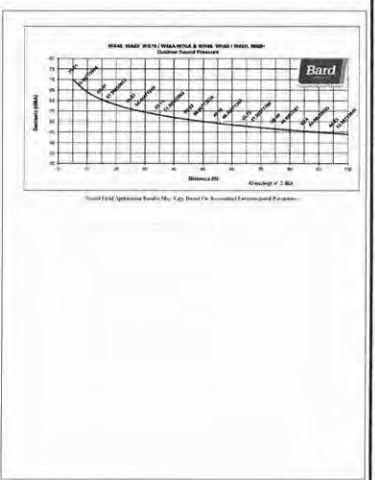
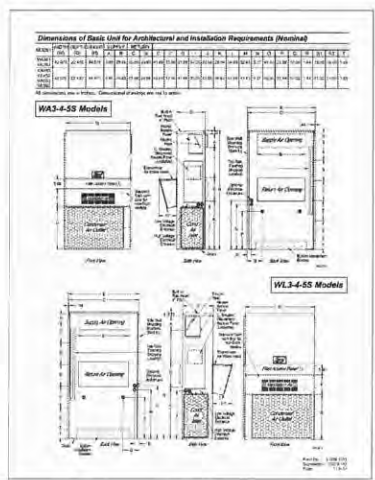
Frequency (Hz)	SWL (dB)
63	80
125	75
250	70
500	65
1000	60
2000	55
4000	50
8000	45
16000	40

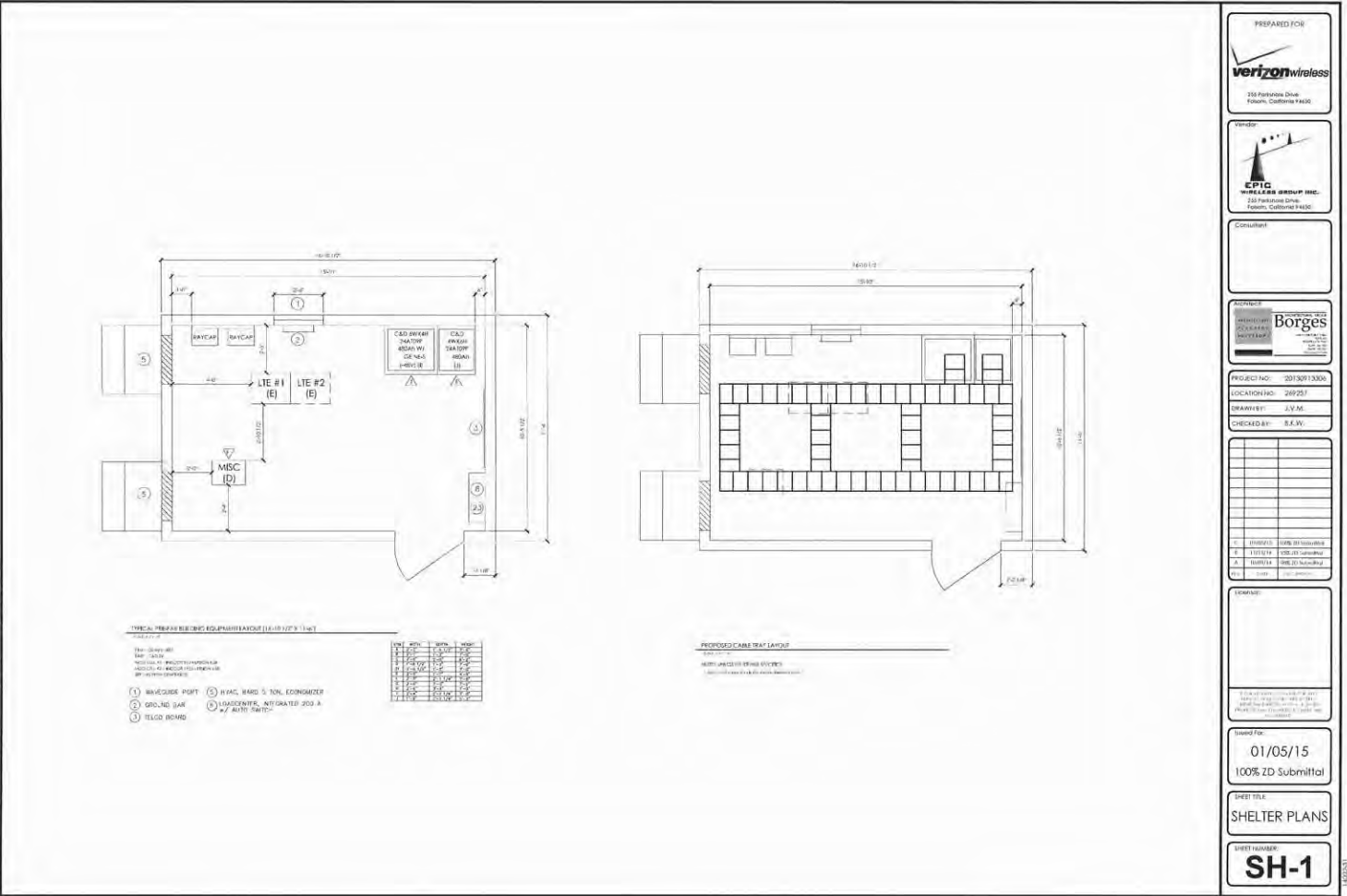
**WAZ4 Sound Data Matrix (SWL @ 10 feet)**

Frequency (Hz)	SWL (dB)
63	85
125	80
250	75
500	70
1000	65
2000	60
4000	55
8000	50
16000	45

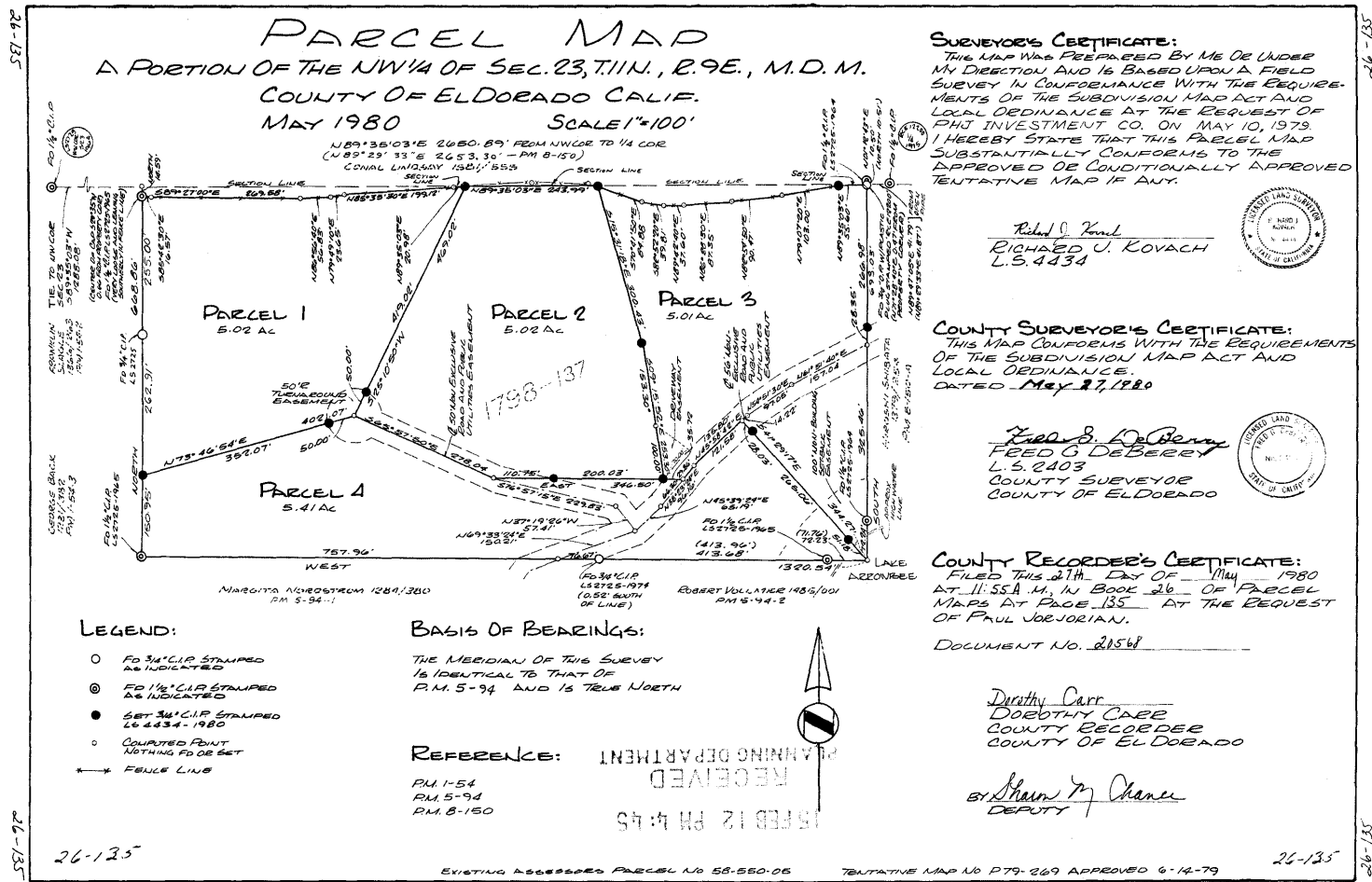
**WAZ5 Sound Data Matrix (SWL @ 10 feet)**

Frequency (Hz)	SWL (dB)
63	90
125	85
250	80
500	75
1000	70
2000	65
4000	60
8000	55
16000	50







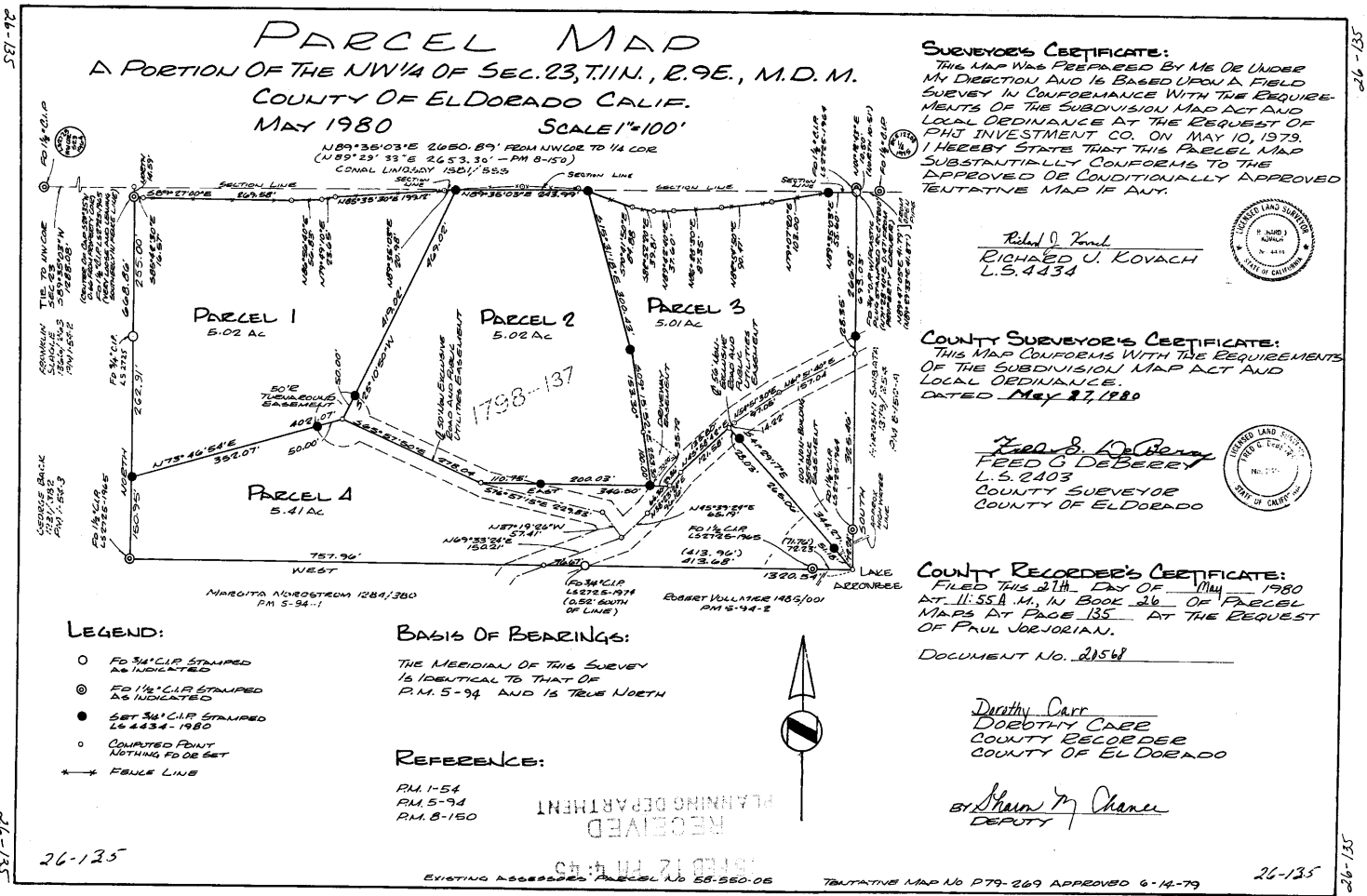


S 15-0004

SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

ZAB 06-27-19

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SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

ZAB 06-27-19

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POR. SEC. 23., T.11N, R.9E., M.D.M.

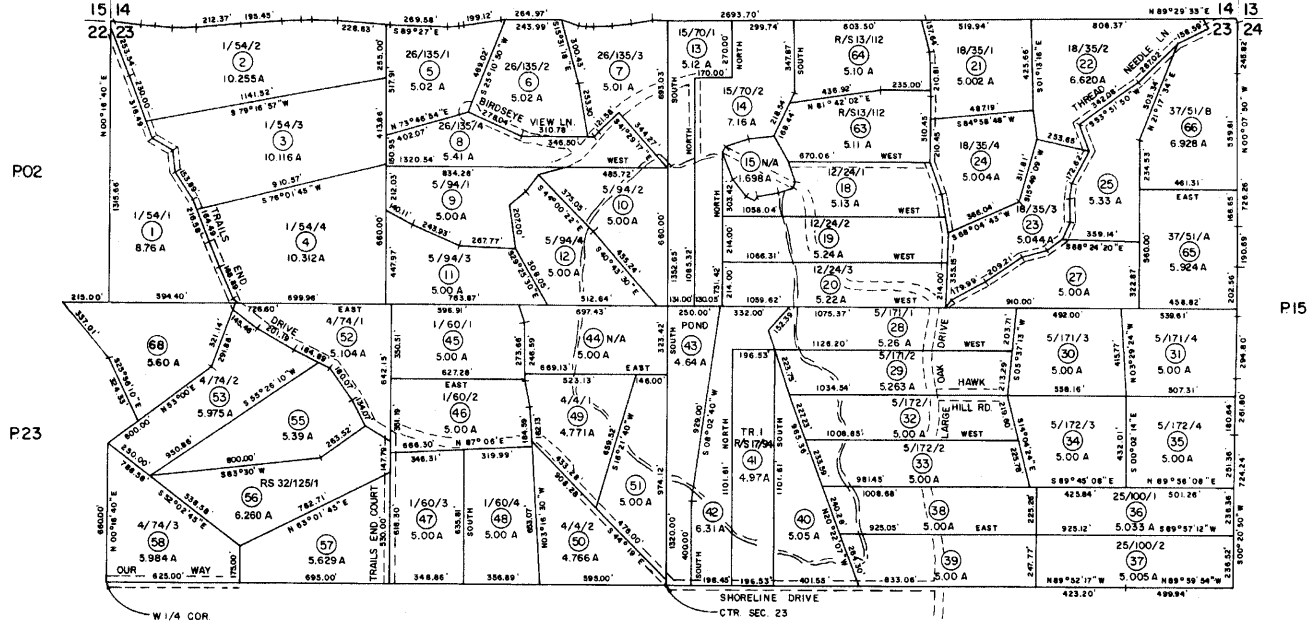
Tax Area Code

105:14

15 FEB 12 PM 4:45

RECEIVED  
PLANNING DEPARTMENT

P02



P02

P23

P16

P15

THIS MAP IS NOT A SURVEY, It is prepared by the El Dorado Co. Assessor's office for assessment purposes only.

NOTE - Assessor's Block Numbers Shown in Ellipses Assessor's Parcel Numbers Shown in Circles



# PUBLIC NOTICE

Federal Communications Commission  
445 12<sup>th</sup> St., S.W.  
Washington, D.C. 20554

News Media Information 202 / 418-0500  
Internet: <http://www.fcc.gov>  
TTY: 1-888-835-5322

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## WIRELESS TELECOMMUNICATIONS BUREAU OFFERS GUIDANCE ON INTERPRETATION OF SECTION 6409(a) OF THE MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012

DA 12-2047  
January 25, 2013

On February 22, 2012, the Middle Class Tax Relief and Job Creation Act of 2012 (Tax Act)<sup>1</sup> became law. Section 6409(a) of the Tax Act provides that a state or local government “may not deny, and shall approve” any request for collocation, removal, or replacement of transmission equipment on an existing wireless tower or base station, provided this action does not substantially change the physical dimensions of the tower or base station.<sup>2</sup> The full text of Section 6409(a) is reproduced in the Appendix to this Public Notice.

To date, the Commission has not received any formal petition to interpret or apply the provisions of Section 6409(a). We also are unaware of any judicial precedent interpreting or applying its terms. The Wireless Telecommunications Bureau has, however, received informal inquiries from service providers, facilities owners, and state and local governments seeking guidance as to how Section 6409(a) should be applied. In order to assist interested parties, this Public Notice summarizes the Bureau’s understanding of Section 6409(a) in response to several of the most frequently asked questions.<sup>3</sup>

### What does it mean to “substantially change the physical dimensions” of a tower or base station?

Section 6409(a) does not define what constitutes a “substantial[] change” in the dimensions of a tower or base station. In a similar context, under the *Nationwide Collocation Agreement* with the Advisory Council on Historic Preservation and the National Conference of State Historic Preservation Officers, the Commission has applied a four-prong test to determine whether a collocation will effect a “substantial increase in the size of [a] tower.”<sup>4</sup> A proposed collocation that does not involve a substantial increase in

---

<sup>1</sup> Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. 112-96, H.R. 3630, 126 Stat. 156 (enacted Feb. 22, 2012) (Tax Act).

<sup>2</sup> *Id.*, § 6409(a).

<sup>3</sup> Although we offer this interpretive guidance to assist parties in understanding their obligations under Section 6409(a), *see, e.g., Truckers United for Safety v. Federal Highway Administration*, 139 F.3d 934 (D.C.Cir. 1998), the Commission remains free to exercise its discretion to interpret Section 6409(a) either by exercising its rulemaking authority or through adjudication. With two exceptions not relevant here, the Tax Act expressly grants the Commission authority to “implement and enforce” this and other provisions of Title VI of that Act “as if this title is a part of the Communications Act of 1934 (47 U.S.C. 151 et seq.)” Tax Act § 6003.

<sup>4</sup> 47 C.F.R. Part 1, App. B, Nationwide Programmatic Agreement for the Collocation of Wireless Antennas, § I.C (*Nationwide Collocation Agreement*).

size is ordinarily excluded from the Commission's required historic preservation review under Section 106 of the National Historic Preservation Act (NHPA).<sup>5</sup> The Commission later adopted the same definition in the *2009 Declaratory Ruling* to determine whether an application will be treated as a collocation when applying Section 332(c)(7) of the Communications Act of 1934.<sup>6</sup> The Commission has also applied a similar definition to determine whether a modification of an existing registered tower requires public notice for purposes of environmental review.<sup>7</sup>

Under Section I.C of the *Nationwide Collocation Agreement*, a “substantial increase in the size of the tower” occurs if:

- 1) [t]he mounting of the proposed antenna on the tower would increase the existing height of the tower by more than 10%, or by the height of one additional antenna array with separation from the nearest existing antenna not to exceed twenty feet, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this paragraph if necessary to avoid interference with existing antennas; or
- 2) [t]he mounting of the proposed antenna would involve the installation of more than the standard number of new equipment cabinets for the technology involved, not to exceed four, or more than one new equipment shelter; or
- 3) [t]he mounting of the proposed antenna would involve adding an appurtenance to the body of the tower that would protrude from the edge of the tower more than twenty feet, or more than the width of the tower structure at the level of the appurtenance, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this paragraph if necessary to shelter the antenna from inclement weather or to connect the antenna to the tower via cable; or
- 4) [t]he mounting of the proposed antenna would involve excavation outside the current tower site, defined as the current boundaries of the leased or owned property surrounding the tower and any access or utility easements currently related to the site.

Although Congress did not adopt the Commission's terminology of “substantial increase in size” in Section 6409(a), we believe that the policy reasons for excluding from Section 6409(a) collocations that substantially change the physical dimensions of a structure are closely analogous to those that animated the Commission in the *Nationwide Collocation Agreement* and subsequent proceedings. In light of the Commission's prior findings, the Bureau believes it is appropriate to look to the existing definition of “substantial increase in size” to determine whether the collocation, removal, or replacement of equipment

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<sup>5</sup> See 16 U.S.C. § 470f, *see also* 47 C.F.R. § 1.1307(a)(4) (requiring applicants to determine whether proposed facilities may affect properties that are listed, or are eligible for listing, in the National Register of Historic Places).

<sup>6</sup> See Petition for Declaratory Ruling to Clarify Provisions of Section 332(c)(7)(B) to Ensure Timely Siting Review and to Preempt Under Section 253 State and Local Ordinances that Classify All Wireless Siting Proposals as Requiring a Variance, WT Docket No. 08-165, *Declaratory Ruling*, 24 FCC Rcd. 13994, 14012, para. 46 & n.146 (2009) (*2009 Declaratory Ruling*), *recon. denied*, 25 FCC Rcd. 11157 (2010), *pet. for review denied sub nom. City of Arlington, Texas v. FCC*, 668 F.3d 229 (5<sup>th</sup> Cir.), *cert. granted*, 113 S.Ct. 524 (2012); 47 U.S.C. § 332(c)(7).

<sup>7</sup> See 47 C.F.R. § 17.4(c)(1)(B); National Environmental Policy Act Compliance for Proposed Tower Registrations, WT Docket No. 08-61, *Order on Remand*, 26 FCC Rcd. 16700, 16720-21, para. 53 (2011).

on a wireless tower or base station substantially changes the physical dimensions of the underlying structure within the meaning of Section 6409(a).

### **What is a “wireless tower or base station”?**

A “tower” is defined in the *Nationwide Collocation Agreement* as “any structure built for the sole or primary purpose of supporting FCC-licensed antennas and their associated facilities.”<sup>8</sup> The Commission has described a “base station” as consisting of “radio transceivers, antennas, coaxial cable, a regular and backup power supply, and other associated electronics.”<sup>9</sup> Section 6409(a) applies to the collocation, removal, or replacement of equipment on a wireless tower or base station. In this context, we believe it is reasonable to interpret a “base station” to include a structure that currently supports or houses an antenna, transceiver, or other associated equipment that constitutes part of a base station.<sup>10</sup> Moreover, given the absence of any limiting statutory language, we believe a “base station” encompasses such equipment in any technological configuration, including distributed antenna systems and small cells.

Section 6409(a) by its terms applies to any “wireless” tower or base station. By contrast, the scope of Section 332(c)(7) extends only to facilities used for “personal wireless services” as defined in that section.<sup>11</sup> Given Congress’s decision not to use the pre-existing definition from another statutory provision relating to wireless siting, we believe the scope of a “wireless” tower or base station under Section 6409(a) is not intended to be limited to facilities that support “personal wireless services” under Section 332(c)(7).

### **May a state or local government require an application for an action covered under Section 6409(a)?**

Section 6409(a) states that a state or local government “may not deny, and shall approve, any eligible facilities request. . . .” It does not say that a state or local government may not require an application to be filed. The provision that a state or local government must approve and may not deny a request to take a covered action, in the Bureau’s view, implies that the relevant government entity may require the filing of an application for administrative approval.

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<sup>8</sup> See *Nationwide Collocation Agreement*, § I.B.

<sup>9</sup> See Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, WT Docket No. 10-133, *Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services, Fifteenth Report*, 26 FCC Rcd. 9664, 9481, para. 308 (2011).

<sup>10</sup> See also 47 C.F.R. Part 1, App. C, Nationwide Programmatic Agreement Regarding the Section 106 National Historic Preservation Act Review Process, § II.A.14 (defining “tower” to include “the on-site fencing, equipment, switches, wiring, cabling, power sources, shelters, or cabinets associated with that Tower but not installed as part of an Antenna as defined herein”).

<sup>11</sup> 47 U.S.C. § 332(c)(7)(A). “Personal wireless services” is in turn defined to mean “commercial mobile services, unlicensed wireless services, and common carrier wireless exchange access services.” *Id.* § 332(c)(7)(C)(1).

**Is there a time limit within which an application must be approved?**

Section 6409(a) does not specify any period of time for approving an application. However, the statute clearly contemplates an administrative process that invariably ends in approval of a covered application. We believe the time period for processing these applications should be commensurate with the nature of the review.

In the *2009 Declaratory Ruling*, the Commission found that 90 days is a presumptively reasonable period of time to process collocation applications.<sup>12</sup> In light of the requirement of Section 6409(a) that the reviewing authority “may not deny, and shall approve” a covered request, we believe that 90 days should be the maximum presumptively reasonable period of time for reviewing such applications, whether for “personal wireless services” or other wireless facilities.

Wireless Telecommunications Bureau contact: Maria Kirby at (202) 418-1476 or by email: [Maria.Kirby@fcc.gov](mailto:Maria.Kirby@fcc.gov).

-FCC-

For more news and information about the Federal Communications Commission please visit: [www.fcc.gov](http://www.fcc.gov)

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<sup>12</sup> See *2009 Declaratory Ruling*, 24 FCC Rcd. at 14012-13, paras. 46-47.

## APPENDIX

### SEC. 6409. WIRELESS FACILITIES DEPLOYMENT.

#### (a) FACILITY MODIFICATIONS.

(1) IN GENERAL. Notwithstanding section 704 of the Telecommunications Act of 1996 (Public Law 104–104) or any other provision of law, a State or local government may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.

(2) ELIGIBLE FACILITIES REQUEST. For purposes of this subsection, the term “eligible facilities request” means any request for modification of an existing wireless tower or base station that involves —

- (A) collocation of new transmission equipment;
- (B) removal of transmission equipment; or
- (C) replacement of transmission equipment.

(3) APPLICABILITY OF ENVIRONMENTAL LAWS. Nothing in paragraph (1) shall be construed to relieve the Commission from the requirements of the National Historic Preservation Act or the National Environmental Policy Act of 1969.



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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Supplement to my June 24, 2019 Opposition to Permit # ZP2018-0236  
**Attachments:** 2019.06.26 Zoning Board.pdf; s15-0004\_application\_packet El Dorado County.pdf; FCC Public Notice.pdf

**From:** Michael Burt [mailto:mb@michaelburtlaw.com]  
**Sent:** Thursday, June 27, 2019 12:10 AM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** Supplement to my June 24, 2019 Opposition to Permit # ZP2018-0236

Dear Board Members

Please consider the attached supplement to my letter in opposition sent to you on June 24, 2019.

Michael Burt  
Law Office of Michael Burt  
1000 Brannan Street, Suite 400  
San Francisco, California 94103-4888  
415-522-1508 phone  
415-522-1506 fax  
415-250-4541 cell  
[mb@michaelburtlaw.com](mailto:mb@michaelburtlaw.com)

**Law Office of Michael Burt**

1000 Brannan Street, Suite 400  
 San Francisco, California 94103  
 415-522-1508 phone; 415-522-1506 fax  
 mb@michaelburtlaw.com

June 24, 2019

Berkeley Zoning Adjustment Board  
 1231 Addison Street  
 Berkeley, CA 94708  
 Sent via email to: zab@cityofberkeley.info

*Re: Supplement to June 24, 2019 Opposition to Permit # ZP2018-0236 (Berryman Reservoir/Codornices Park cell tower)*

Dear Board Members:

This letter is a supplement to my June 24, 2019 letter opposing the above-referenced application by Verizon for a permit to build a 50 foot fake pine tree cell tower at the Berryman Reservoir. My further research into this issue has revealed additional evidence in support of the arguments I have already made, as well as two additional reasons why this project should not be allowed to go forth.

First, Verizon's application to build the Berryman cell tower stands in stark contrast to other applications Verizon has made in California to build these fake cell towers. As just one example, I attach an application filed by Verizon in El Dorado County. The differences between the two applications are striking and illustrate that Verizon apparently believes that the citizens of Berkeley are entitled to less protection than the citizens of El Dorado County:

Verizon El Dorado Permit Application	Verizon Berryman Permit Application
<p><b>Allegation of necessity:</b> "This tower will help alleviate an <i>area</i> of poor coverage and inadequate capacity within this service area"</p>	<p><b>Allegation of necessity:</b> "Verizon's objective is to <i>improve</i> coverage in the Berkeley Hills area, especially along Euclid Avenue north of EBMUD's Berryman Reservoir.... Verizon's coverage objectives for this project are to <i>improve</i> service in the area described above, and to <i>offload traffic from other nearby sites</i> that are often at or exceeding capacity.... Verizon coverage <i>in the immediate vicinity</i> of the proposed facility is poor."</p>

<p><b>Consideration of alternatives:</b>          “ALTERNATIVE LOCATIONS REVIEWED BUT NOT SELECTED:          1310 Large Oak Drive          Landlord not interested in pursuing a lease with Verizon          4590 Stoney Ridge Rd.          Rejected by Verizon, inadequate coverage capability.          4540 Stoney Ridge Rd.          Rejected by Verizon, in adequate coverage capability.          4541 Burnt Oak Dr.          Rejected by Verizon, in adequate coverage capability.          1310 Large Oak Dr          Landlord not interested in pursuing a lease with Verizon.          4101 Birds Eye Court          Landlord not interested in pursuing a lease with Verizon.”</p>	<p><b>Consideration of alternatives:</b> None</p>
<p><b>Location:</b> “The proposed site is well screened from public view by several large mature trees and has been selected due to its location on a hill top, adequately positioned to provide coverage in the intended service area.”</p>	<p><b>Location:</b> “This EBMUD parcel is shaped like a bowl, with the lowest elevations surrounded by an earthen berm. Because <i>ground equipment</i> would be installed at the bottom of this bowl, it would not be visible from the street.” There is no allegation that the tower itself will be “well screened from public view” or that the chosen site is “on a hill top, adequately positioned to provide coverage in the intended service area.”</p>

<p><b>Sharing with other carriers:</b> “This tower has been designed to accommodate future collocation by other carriers....The proposed site has been designed to allow for future co-location opportunities with other carriers. The land lease provides sufficient space for additional service providers and the tower and its foundation are designed for future equipment. This tower will eliminate the need for multiple towers within the same general vicinity as it has been designed to accommodate carriers should they come forward. Additional ground space would need to be leased from the landlord.”</p>	<p><b>Sharing with other carriers:</b> None. See, <i>Vertex Dev., LLC v. Manatee Cty.</i>, 761 F. Supp. 2d 1348, 1362 (M.D. Fla. 2011)(attached to June 24, 2019 letter)(“Aside from aesthetics and property values, the [permit board]also took issue with the lack of evidence to demonstrate why other sites, which are already developed as nonresidential, were not considered. Finding of Fact No. 6 states ‘The public hearing record does not sufficiently document the analysis by the applicant to demonstrate why other sites which are already developed as nonresidential, commercial and industrial uses and which are currently visually impacted by tall structures could not be utilized for the telecommunication tower siting in this instance...’”)</p>
<p><b>Assurance of compliance with county standards:</b> “This project has been carefully designed to comply with all applicable standards.”</p>	<p><b>Assurance of compliance with county standards:</b> None</p>
<p><b>Assurance of compliance with FCC standards:</b> “This project will not interfere with any TV, radio, telephone, satellite, or any other signals. Any interference would be against the Federal Law and would be a violation Verizon Wireless' FCC License. In addition, this project will conform to all FCC standards.”</p>	<p><b>Assurance of compliance with FCC standards:</b> None</p>
<p><b>Assurance of limited use of diesel equipment:</b> “The standby generator will be operated for approximately 15 minutes per week for maintenance purposes, and during power outages and disasters.”</p>	<p><b>Assurance of limited use of diesel equipment:</b> None</p>
<p><b>Hazardous Materials Business Plan:</b> “A Hazardous Material Business Plan will also be submitted upon project completion, and stored on site after construction.”</p>	<p><b>Hazardous Materials Business Plan:</b> None</p>

<p><b>Services provided:</b> “This unmanned facility will provide service to area travelers, residents and businesses 24 hours a day, 7 days a week. This site will also serve as a back up to the existing landline service in the area and will provide improved mobile communications.”</p>	<p><b>Services provided:</b> “Verizon is proposing to provide LTE service from this facility. Please note that LTE is a ]data only’ service, for which the term ‘minutes of use’ has no meaning....While voice telephone service will ultimately be provided from the proposed site, that service is just any other service that uses data, like e-mail or web browsing, or video.”</p>
<p><b>Construction schedule:</b> “The construction of the facility will be in compliance with all local rules and regulations. The typical duration is two months. The crew size will range from two to ten individuals.”</p>	<p><b>Construction schedule:</b> None</p>
<p><b>Assurance of Maintenance:</b> “A technician will visit the site approximately twice a month to check the facility and perform any necessary maintenance.”</p>	<p><b>Assurance of Maintenance:</b> None</p>

Again, the differences in these two permit applications are dramatic and underscore the fatal flaws in Verizon’s Berryman application.

I also call to your attention the important fact that The Tax Relief and Job Creation Act of 2012 would allow Verizon to increase the size of the tower. No one (not even the county) will be able to stop them from further degrading our neighborhood if this ugly and intrusive tower is approved. See, Federal Communications Commission, *Wireless Telecommunications Bureau Offers Guidance on Interpretation of Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012* (attached).

For all of the reasons stated above and in my June 24, 2019 letter I again urge you deny Verizon’s application.

Sincerely,

/s/ Michael N. Burt  
Michael N. Burt  
Attorney at Law

FILE # 515-0004

**EL DORADO COUNTY PLANNING DEPARTMENT**

**APPLICATION FOR Special Use Permit**

ASSESSOR'S PARCEL NO.(s) 105-140-06-10

PROJECT NAME/REQUEST: (Describe proposed use) Arrowbee Lake Verizon Wireless Cellular Tower Project

IF SUBDIVISION/PARCEL MAP: Create \_\_\_\_\_ lots, ranging in size from \_\_\_\_\_ to \_\_\_\_\_ acre(s) / SF

IF ZONE CHANGE: From \_\_\_\_\_ to \_\_\_\_\_ IF GENERAL PLAN AMENDMENT: From \_\_\_\_\_ to \_\_\_\_\_

IF TIME EXTENSION, REVISION, CORRECTION: Original approval date \_\_\_\_\_ Expiration date \_\_\_\_\_

APPLICANT/AGENT Verizon Wireless c/o Epic Wireless c/o Mark Lobaugh

Mailing Address 8700 Auburn Folsom Road

Phone ( 916 ) 203 - 4067 FAX ( 916 ) 781 - 5927

PROPERTY OWNER Eric and Elizabeth Johanson

Mailing Address 4131 Birdseye View Ln, Placerville, CA 95667

Phone ( 530 ) 626-6874 FAX ( )

LIST ADDITIONAL PROPERTY OWNERS ON SEPARATE SHEET IF APPLICABLE

ENGINEER/ARCHITECT Borges Architectural Group, INC

Mailing Address 1478 Stone Point Dr, Roseville, CA 95661

Phone ( 916 ) 782-7200 FAX ( )

LOCATION: The property is located on the North side of Birdseye View Ln

N/E/W/S

street or road

2.18 feet/miles North West of the intersection with Arrowbee Dr and Lotus Rd

N/E/W/S

major street or road

in the Placerville area. PROPERTY SIZE 5.02 acres

acreage / square footage

X Eric W. Johanson signature of property owner or authorized agent Date 2-11-15

**FOR OFFICE USE ONLY**

Date 2/12/15 Fee \$ 4,900.00 Receipt # 29238 Rec'd by MOVAT Census \_\_\_\_\_

Zoning RF-10 GPD LDN Supervisor Dist 4 Sec/Twn/Rng 231 11N / 9E

- PLANNING COMMISSION
- ZONING ADMINISTRATOR
- PLANNING DIRECTOR

**ACTION BY BOARD OF SUPERVISORS**

Hearing Date \_\_\_\_\_

Approved  Denied (findings and/or conditions attached)

Hearing Date \_\_\_\_\_

Approved  Denied (findings and/or conditions attached)

APPEAL:  Approved  Denied

Executive Secretary \_\_\_\_\_

Executive Secretary \_\_\_\_\_

Revised 07/02  
**S 15-0004**

RECEIVED  
PLANNING DEPARTMENT  
FEB 12 PM 4:45

**PROJECT SUPPORT STATEMENT**

**DEVELOPMENT APPLICATION FOR VERIZON SITE "ARROWBEE LAKE"**

15 FEB 12 PM 4:4

**APN 105-140-06-10**

RECEIVED  
PLANNING DEPARTMENT

**4131 Birdseye View Ln, PLACERVILLE, CA. 95667**

**INTRODUCTION**

Verizon Wireless is seeking to improve communications service in the El Dorado County area near Lotus Road. Verizon would like to increase coverage and capacity in the area by constructing a new telecommunications facility in to improve service for both current and potential customers. Additionally, this network development will increase public safety within these areas and bring wireless service to areas that currently have poor capacity service.

This tower will help alleviate an area of poor coverage and inadequate capacity within this service area, which causes reoccurring lost calls and ineffective service. This site will relieve inadequate capacity in the area due to high cell phone and broadband usage in the greater Arrowbee Lake area. The proposed location of the tower is set within an unutilized portion of this parcel will be designed to comply with all County of El Dorado's wireless design guidelines. The proposed Verizon Communications facility will be located within a 33'x20' fenced compound including: (1) proposed 16' x 11'6" equipment shelter, a 30kw Diesel generator and a 90' stealth monopine, and is designed to blend in with the existing trees nearby. This tower will accommodate (3) sectors with (2) antennas per sector, (3) remote radio units (RRU's) per sector. This tower has been designed to accommodate future collocation by other carriers. This site is constructed atop a raised steel platform in order to minimize the amount of earth work needed to achieve a flat site. As such, very little soil will need to be graded for this site. This site lies in an area that is well screened from public views by se Rejected by Verizon, in adequate coverage capability. The proposed site is well screened from public view by several large mature trees and has been selected due to its location on a hill top, adequately positioned to provide coverage in the intended service area.

The parcel selected for this communication is owned by Eric and Elizabeth Johanson and totals 5.02 acres. The location for this project is situated approximately 1.77miles from Lotus Road.

This unmanned facility will provide service to area travelers, residents and businesses 24 hours a day, 7 days a week. This site will also serve as a back up to the existing landline service in the area and will provide improved mobile communications, essential to modern day commerce and recreation.

**ALTERNATIVE LOCATIONS REVIEWED BUT NOT SELECTED**

- 1310 Large Oak Drive      Landlord not interested in pursuing a lease with Verizon
- 4590 Stoney Ridge Rd.    Rejected by Verizon, in adequate coverage capability.
- 4540 Stoney Ridge Rd.    Rejected by Verizon, in adequate coverage capability.
- 4541 Burnt Oak Dr.        Rejected by Verizon, in adequate coverage capability.
- 1310 Large Oak Dr.        Landlord not interested in pursuing a lease with Verizon
- 4101 Birds Eye Court      Landlord not interested in pursuing a lease with Verizon

**SAFETY BENEFITS OF IMPROVED WIRELESS SERVICE**

Mobile phone use has become an extremely important system for public safety. Along roads and highways without public call boxes, mobile phones are often the only means for emergency roadside communication. Motorists with disabled vehicles (or worse) can use their phone to call in and request appropriate assistance. With good cellular coverage along important roadways, emergency response is

just a phone call away. Furthermore, as a back up system to traditional landline phone service, mobile phones have proven to be extremely important during natural disasters and other catastrophes.

Verizon has taken the responsibility for back-up service very seriously. As such, Verizon has incurred increased expense to install a standby diesel generator at this facility to insure quality communication for the surrounding community regardless of any disaster or catastrophe.

#### **CONVENIENCE BENEFITS OF IMPROVED WIRELESS SERVICE**

Modern day life has become increasingly dependent on instant communications. Whether it is a parent calling their child, spouse calling a spouse, or general contractor ordering materials to the jobsite, wireless phone service is no longer just a convenience. It has become a way of life and a way of business.

#### **COMPLIANCE WITH COUNTY DEVELOPMENT STANDARDS**

This project has been carefully designed to comply with all applicable standards.

#### **COMPLIANCE WITH FCC STANDARDS**

This project will not interfere with any TV, radio, telephone, satellite, or any other signals. Any interference would be against the Federal Law and would be a violation Verizon Wireless' FCC License. In addition, this project will conform to all FCC standards.

#### **TECHNOLOGY AND CONSUMER SERVICES THE CARRIER WILL PROVIDE ITS CUSTOMERS**

Verizon offers its customers multiple services such as, voice calls, text messaging, mobile email, picture/video messaging, mobile web, navigation, broadband access. Wireless service enhances public safety and emergency communications in the community. In rural areas such as the subject location, cellular phone service can cover much larger geographic areas than traditional landline phone service.

#### **FUTURE COLLOCATION OPPORTUNITIES**

The proposed site has been designed to allow for future co-location opportunities with other carriers. The land lease provides sufficient space for additional service providers and the tower and its foundation are designed for future equipment. This tower will eliminate the need for multiple towers within the same general vicinity as it has been designed to accommodate carriers should they come forward. Additional ground space would need to be leased from the landlord.

#### **LIGHTING**

Unless tower lighting is required by the FAA the only lighting on the facility will be a shielded motion sensor light by the door on the equipment shelter for servicing the equipment.

#### **NOISE**

The standby generator will be operated for approximately 15 minutes per week for maintenance purposes, and during power outages and disasters.

#### **HAZARDOUS MATERIAL**

A Hazardous Material Business Plan will also be submitted upon project completion, and stored on site after construction

#### **ENVIRONMENTAL SETTING**



The site is set within a parcel that is zoned LI and is consistent with application design standards in the area and environment.

#### **MAINTENANCE AND STANDY GENERATOR TESTING**

Verizon installs a standby diesel generator and batteries at many of its cell sites. The generator and batteries serve a vital role in Verizon emergency and disaster preparedness plan. In the event of a power outage, Verizon communications equipment will first transition over to the back-up batteries. The batteries can run the site for a few hours depending upon the demand placed upon the equipment. Should the power outage extend beyond the capacity of the batteries, the back-up generator will automatically start and continue to run the site. This two state back-up plan is an extremely important component of Verizon communications sites. Back-up batteries and generators allow Verizon communications sites to continue providing valuable communications services in the event of a power outage, natural disaster or other emergency.

A standby generator will be installed at the site to ensure quality and consistent coverage in the event of a power outage or disaster. This generator will be run for approximately 15 minutes per week for maintenance purposes, and during power outages and disasters.

A technician will visit the site approximately twice a month to check the facility and perform any necessary maintenance.

#### **CONSTRUCTION SCHEDULE**

The construction of the facility will be in compliance with all local rules and regulations. The typical duration is two months. The crew size will range from two to ten individuals.

Order No.  
Escrow No. 89829JT  
Loan No.

043916

15 FEB 12 PM 4:47

EL DORADO COUNTY CALIF.  
RECORD REQUESTED BY:

RECEIVED  
PLANNING DEPARTMENT

WHEN RECORDED MAIL TO:

First American Title Co.  
Aug 9 9 17 AM '88

ERIC W. JOHANSON  
ELIZABETH A. JOHANSON  
2151 Old Oakland Road, Space 527  
San Jose, CA 95131

JOHN W. CARR  
COUNTY RECORDER

SPACE ABOVE THIS LINE FOR RECORDER'S USE

MAIL TAX STATEMENTS TO:

PCS  
FREE

SAME AS ABOVE

DOCUMENTARY TRANSFER TAX \$ 45.65  
X. Computed on the consideration or value of property conveyed; OR  
Y. Computed on the consideration or value less fees or encumbrances  
remaining at time of sale.  
First American Title Insurance Co.  
Signature of Notary or Agent determining tax - Form Number

AFN: 105-140-06

GRANT DEED

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,  
BURYL L. CALAHAN and DONNA G. CALAHAN, husband and wife

herby GRANT(S) to  
ERIC W. JOHANSON and ELIZABETH A. JOHANSON, husband and wife as Joint Tenants

the real property in the City of unincorporated area  
County of El Dorado State of California, described as

A portion of the Northwest quarter of Section 23, Township 11 North, Range  
09 East, N.D.B.M., more particularly described as follows:

Parcel 2, as shown on that certain Parcel Map, filed in the office of the  
County Recorder, County of El Dorado, State of California, on May 27, 1980,  
in Book 26 of Parcel Maps, at page 135.

Dated August 3, 1988

*Donna G. Calahan*  
DONNA G. CALAHAN

STATE OF CALIFORNIA  
COUNTY OF El Dorado  
On August 5, 1988

*Buryl L. Calahan*  
Buryl L. Calahan

personally known to me and proved to me on the basis of satisfactory  
evidence) to be the persons whose names are subscribed to the  
within instrument and acknowledged to me that he/she/they executed  
the same.



WITNES my hand and official seal  
*Kuile S. McCallum*  
Signature

(This area for official stamp)  
BOOK 2893 PAGE 17

END DOCUMENT  
MAIL TAX STATEMENTS AS DIRECTED ABOVE

S 15-0004

FILE # \_\_\_\_\_  
DATE FILED \_\_\_\_\_

**EL DORADO COUNTY PLANNING DEPARTMENT  
ENVIRONMENTAL QUESTIONNAIRE**

15 FEB 12 PM 4:47

RECEIVED  
PLANNING DEPARTMENT

Project Title Arrowbee Lake Verizon Wireless New Build  
Lead Agency El Dorado County Planning Department  
Name of Owner Eric and Elizabeth Johanson Telephone ( 530 ) 626-6874  
Address 4131 Birdseye View Ln, Placerville, CA 95667  
Name of Applicant Verizon Wireless c/o Epic Wireless c/o Mark Lobaugh Telephone ( 916 ) 203 - 4067  
Address 8700 Auburn Folsom Road Suite 400, Granite Bay, CA 95746  
Project Location 4131 Birdseye View Ln, Placerville, CA 95667  
Assessor's Parcel Number(s) 105-140-06-10  
Acreage 5.02 Zoning LI

**Please answer all of the following questions as completely as possible. Subdivisions and other major projects will require a Technical Supplement to be filed together with this form.**

1. Type of project and description: Verizon Wireless proposes to construct a 90' tall Stealth monopine tower which will include three sectors, with two antennas per sector and 3 RRU's per sector. There will also be an Equipment Shelter and 30kVa diesel generator.
2. What is the number of units/parcels proposed? 1

**GEOLOGY AND SOILS**

3. Identify the percentage of land in the following slope categories:  
xx 0 to 10%           11 to 15%           16 to 20%           21 to 29%           over 30%
4. Have you observed any building or soil settlement, landslides, rock falls or avalanches on this property or in the nearby surrounding area? No
5. Could the project affect any existing agriculture uses or result in the loss of agricultural land?  
No

**DRAINAGE AND HYDROLOGY**

6. Is the project located within the flood plain of any stream or river? No  
If so, which one? \_\_\_\_\_
7. What is the distance to the nearest body of water, river, stream or year-round drainage channel?  
0.13 miles    Name of the water body? Arrowbee Lake
8. Will the project result in the direct or indirect discharge of silt or any other particles in noticeable amount into any lakes, rivers or streams? No

**S 15-0004**

Environmental Questionnaire  
Page 2

9. Will the project result in the physical alteration of a natural body of water or drainage way?  
If so, in what way? none
10. Does the project area contain any wet meadows, marshes or other perennially wet areas?  
No

**VEGETATION AND WILDLIFE**

11. What is the predominant vegetative cover on the site (trees, brush, grass, etc.)? Estimate percentage of each: Grass
12. How many trees of 6-inch diameter will be removed when this project is implemented?  
0

**FIRE PROTECTION**

13. In what structural fire protection district (if any) is the project located? Pilot Hill
14. What is the nearest emergency source of water for fire protection purposes (hydrant, pond, etc.)? 0.13 miles
15. What is the distance to the nearest fire station? 4.28 miles
16. Will the project create any dead-end roads greater than 500 feet in length? No
17. Will the project involve the burning of any material including brush, trees and construction materials? No

**NOISE QUALITY**

18. Is the project near an industrial area, freeway, major highway or airport? No  
If so, how far? \_\_\_\_\_
19. What types of noise would be created by the establishment of this land use, both during and after construction? Generator operates once every month for 15 mins at 36 dB at 23 ft (equivalent to normal conversation at 3 ft.

**AIR QUALITY**

20. Would any noticeable amounts of air pollution, such as smoke, dust or odors, be produced by this project? Minimal, AQMD form to be filed. Equipment is exempt due to low HP engine.

**WATER QUALITY**

21. Is the proposed water source  public or  private,  treated or  untreated?  
Name the system: N/A

22. What is the water use (residential, agricultural, industrial or commercial)? No water use.  
\_\_\_\_\_

**AESTHETICS**

23. Will the project obstruct scenic views from existing residential areas, public lands, public bodies of water or roads? No  
\_\_\_\_\_

**ARCHAEOLOGY/HISTORY**

24. Do you know of any archaeological or historical areas within the boundaries or adjacent to the project? (e.g., Indian burial grounds, gold mines, etc.) None known  
\_\_\_\_\_

**SEWAGE**

25. What is the proposed method of sewage disposal?  septic system  sanitation district  
Name of district: NA

26. Would the project require a change in sewage disposal methods from those currently used in the vicinity? NA  
\_\_\_\_\_

**TRANSPORTATION**

27. Will the project create any traffic problems or change any existing roads, highways or existing traffic patterns? No  
\_\_\_\_\_

28. Will the project reduce or restrict access to public lands, parks or any public facilities?  
No  
\_\_\_\_\_

**GROWTH-INDUCING IMPACTS**

29. Will the project result in the introduction of activities not currently found within the community?  
No  
\_\_\_\_\_

30. Would the project serve to encourage development of presently undeveloped areas, or increases in development intensity of already developed areas (include the introduction of new or expanded public utilities, new industry, commercial facilities or recreation activities)?  
No  
\_\_\_\_\_  
\_\_\_\_\_

31. Will the project require the extension of existing public utility lines? No  
If so, identify and give distances: \_\_\_\_\_

Environmental Questionnaire  
Page 4

**GENERAL**

- 32. Does the project involve lands currently protected under the Williamson Act or an Open Space Agreement? No
- 33. Will the project involve the application, use or disposal of potentially hazardous materials, including pesticides, herbicides, other toxic substances or radioactive material? Diesel fuel for generator.
- 34. Will the proposed project result in the removal of a natural resource for commercial purposes (including rock, sand, gravel, trees, minerals or top soil)? No
- 35. Could the project create new, or aggravate existing health problems (including, but not limited to, flies, mosquitos, rodents and other disease vectors)? No
- 36. Will the project displace any community residents? No

**DISCUSS ANY YES ANSWERS TO THE PREVIOUS QUESTIONS** (attached additional sheets if necessary)

Diesel generator included, see drawings for specifications.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

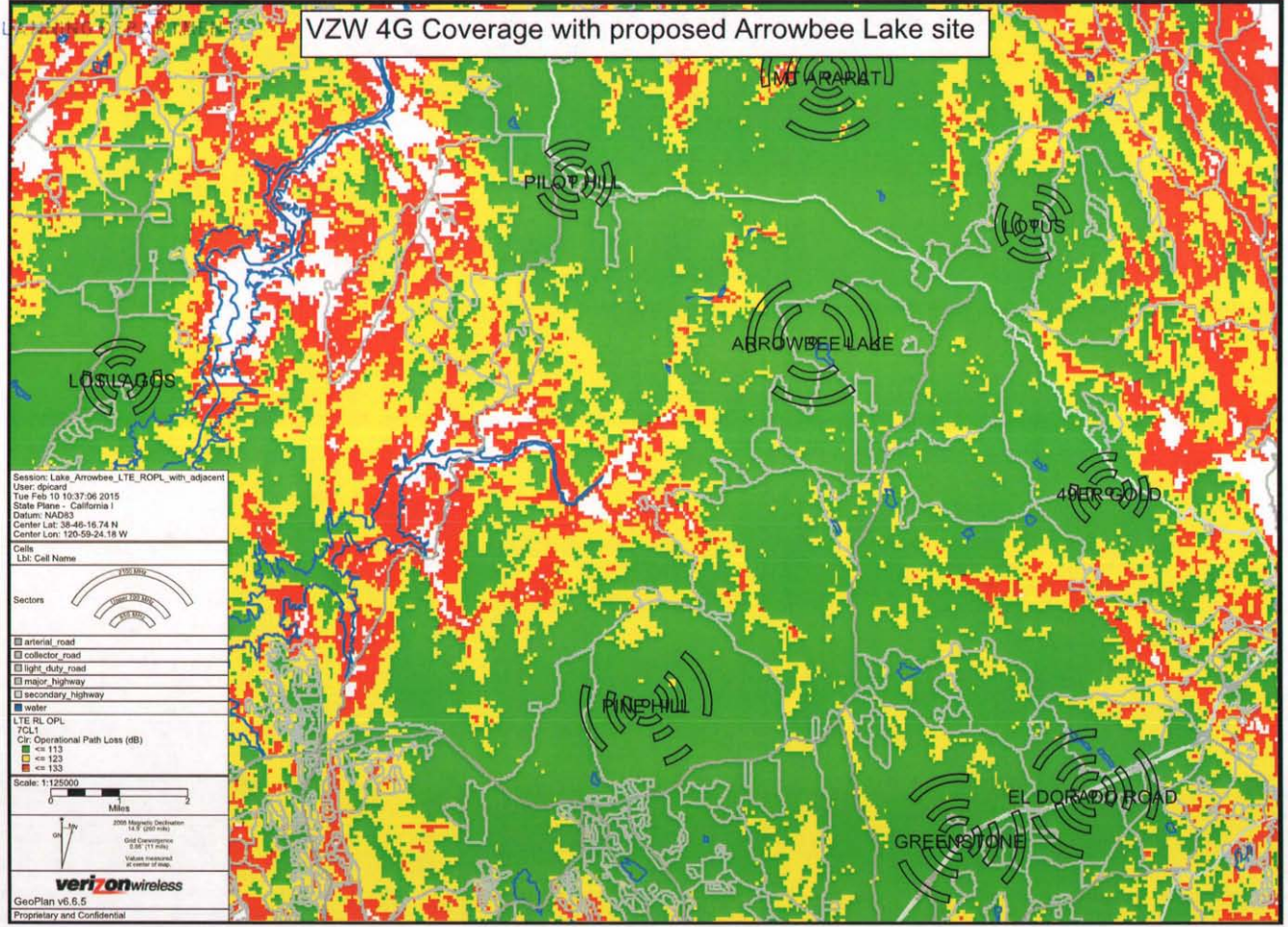
**MITIGATION MEASURES** (attached additional sheets if necessary)

Proposed mitigation measures for any of the above questions where there will be an adverse impact:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Form completed by: \_\_\_\_\_ Date: \_\_\_\_\_

15 FEB 12 PM 4:45

VZW 4G Coverage with proposed Arrowbee Lake site

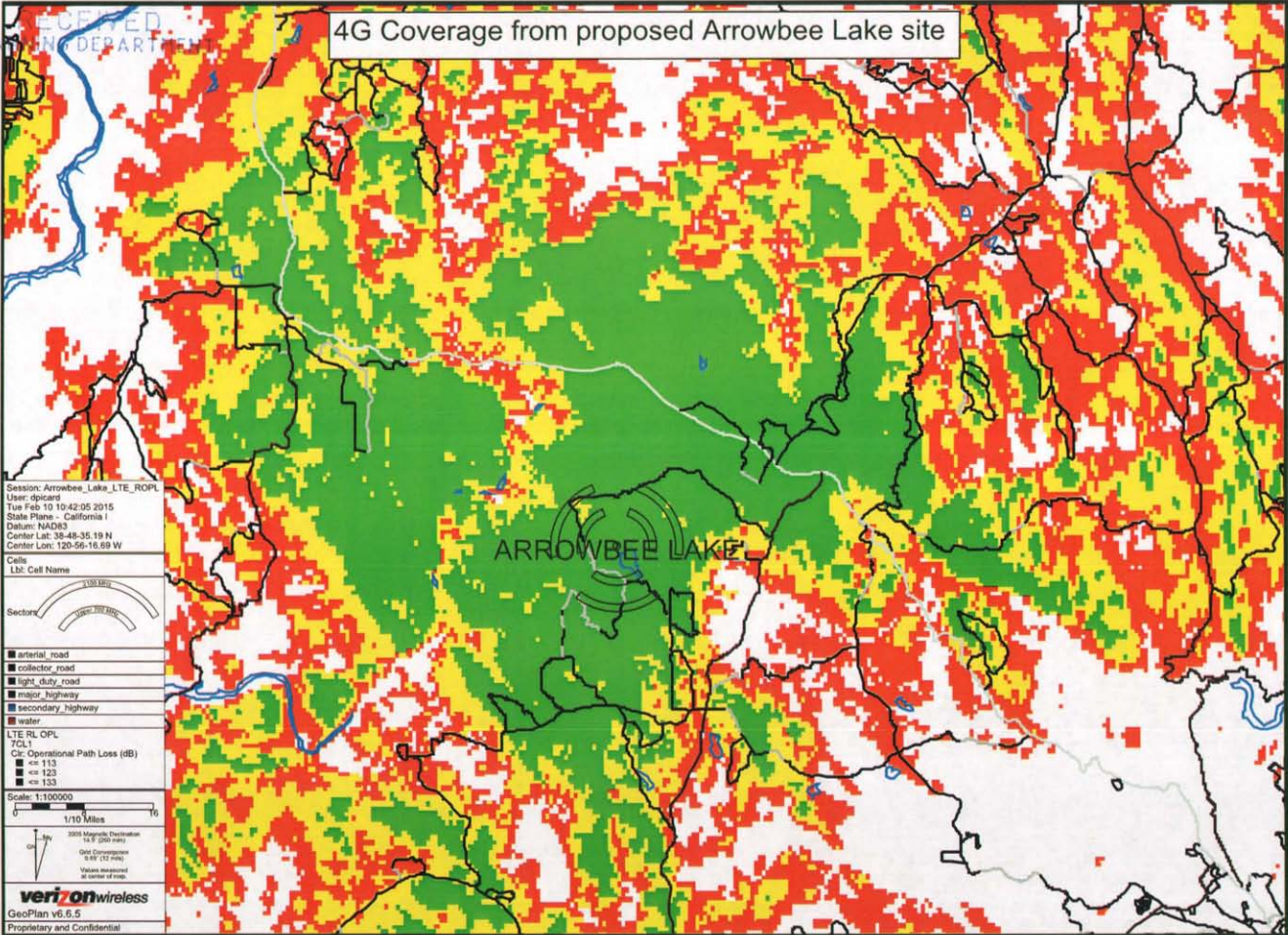


S 15-0004

15 FEB 12 PM 4:46

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PLANNING DEPARTMENT

4G Coverage from proposed Arrowbee Lake site

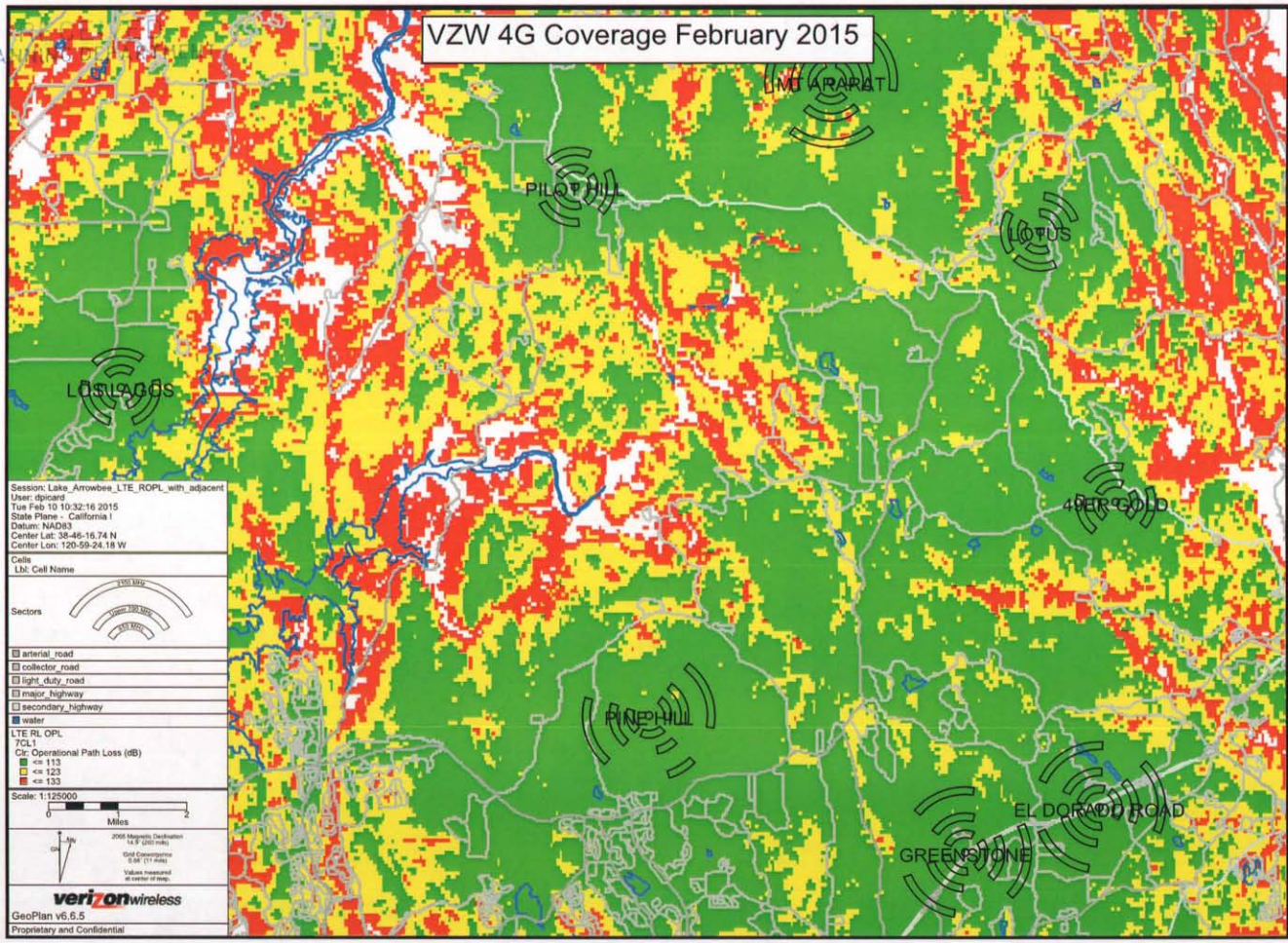




15 FEB 12 PH 4:46

PLA

### VZW 4G Coverage February 2015



Session: Lake\_Arrowbee\_LTE\_ROPL\_with\_adjacent  
 User: drcard  
 Tue Feb 10 10:32:16 2015  
 State Plane - California 1  
 Datum: NAD83  
 Center Lat: 38-46-16.74 N  
 Center Lon: 120-59-24.18 W

Cells  
 Lx: Cell Name

Sectors

arterial\_road  
 collector\_road  
 light\_duty\_road  
 major\_highway  
 secondary\_highway  
 water

LTE RL OPL  
 7CL1  
 CR: Operational Path Loss (dB)  
 <math>\le 113</math>  
 <math>\le 123</math>  
 <math>\le 133</math>

Scale: 1:125000

2008 Magenta Definition  
 14.4 (10/10/08)  
 Grid Coordinates  
 0.00 (11/10/08)  
 Values measured  
 at center of map.

**verizon**wireless  
 GeoPlan v6.5.5  
 Proprietary and Confidential

Version Date: October 01, 2014

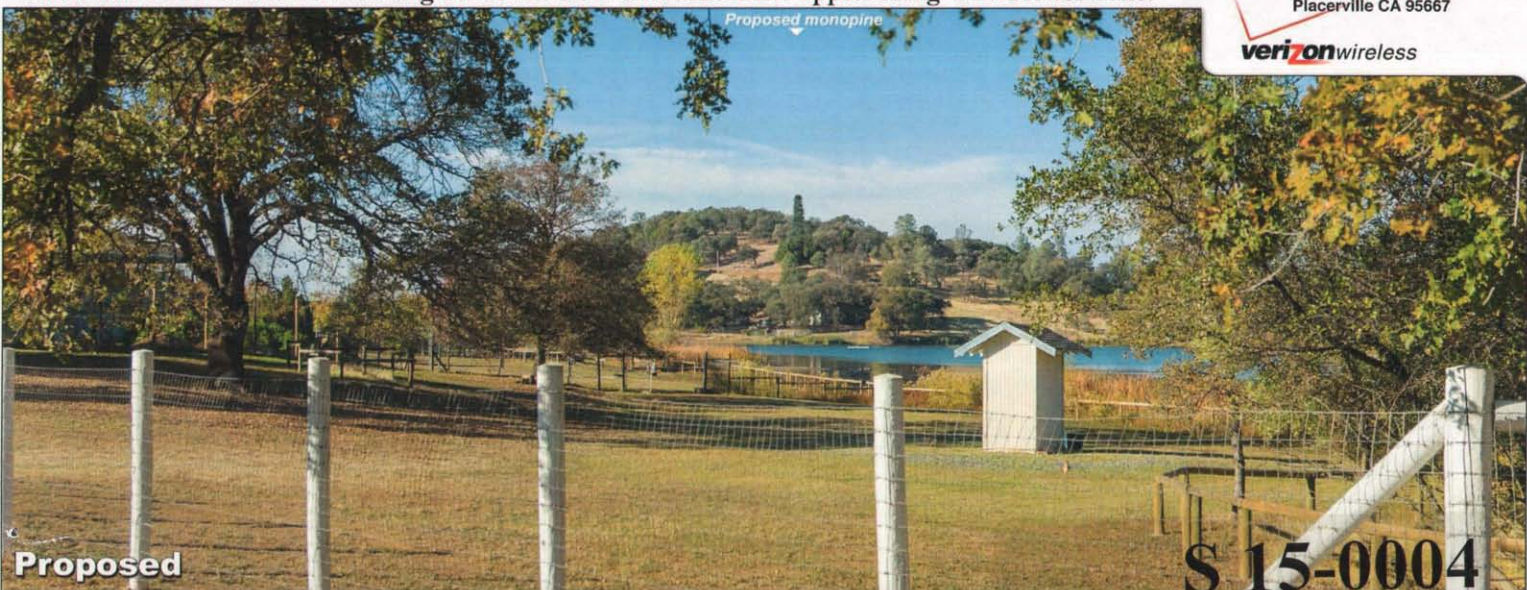


**Existing**

Photosimulation of the view looking northwest from Shoreline Drive approaching Wild Flower Lane.

**Arrowbee Lake**

4131 Birdseye View Lane  
Placerville CA 95667

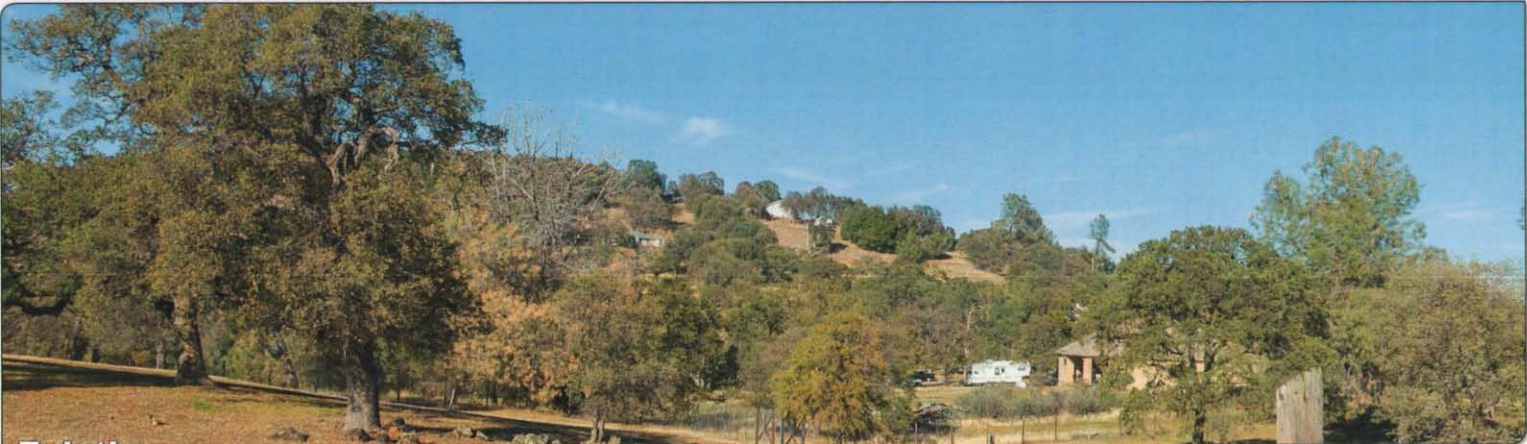


**Proposed**

**\$ 15-0004**

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Version Date: October 01, 2014



**Existing**

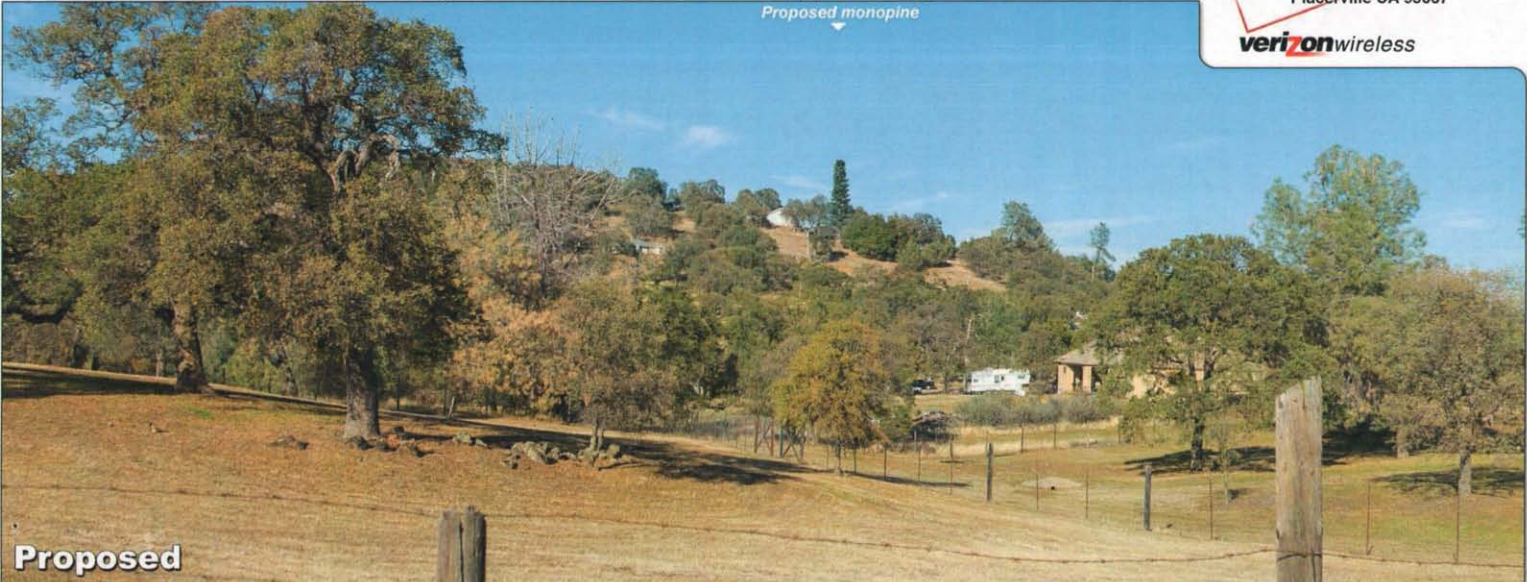
Photosimulation of the view looking north from Trail's End Road approaching Trails End Court.

**Arrowbee Lake**

4131 Birdseye View Lane  
Placerville CA 95667



Proposed monopine



**Proposed**

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Version Date: October 01, 2014

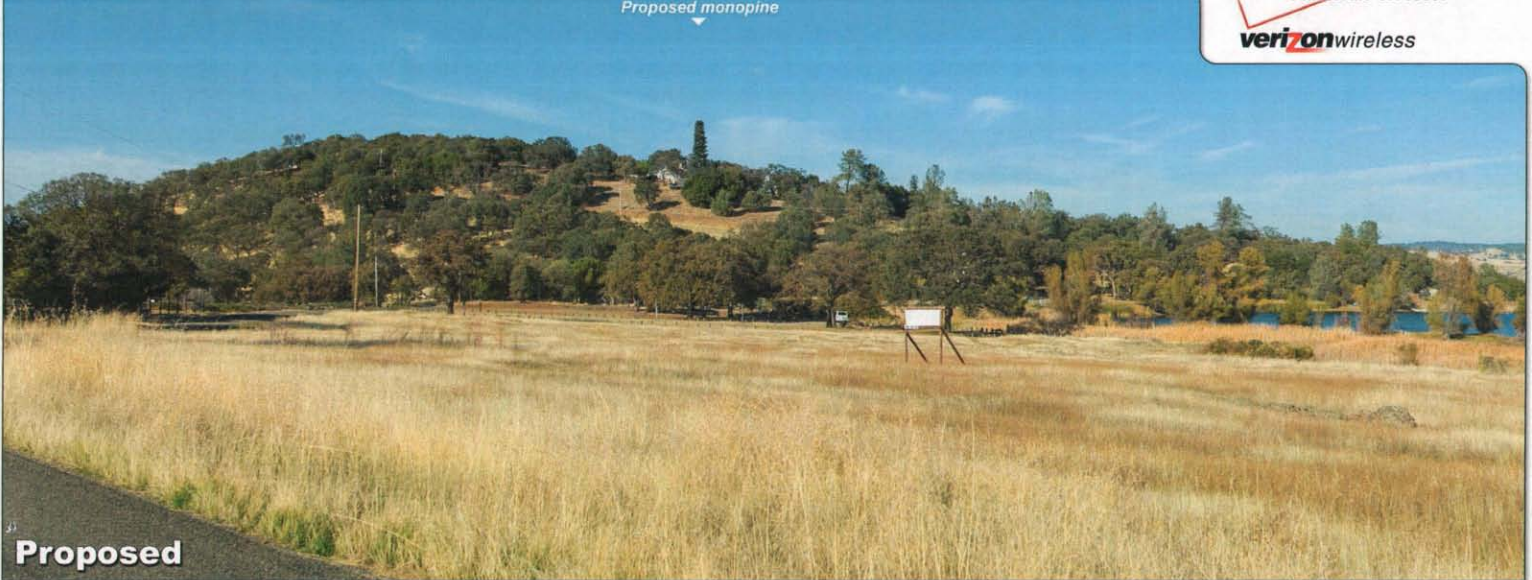


**Existing**

Photosimulation of the view looking north-northwest from Shoreline Drive approaching Trails End Drive.

**Arrowbee Lake**  
 4131 Birdseye View Lane  
 Placerville CA 95667

*Proposed monopine*

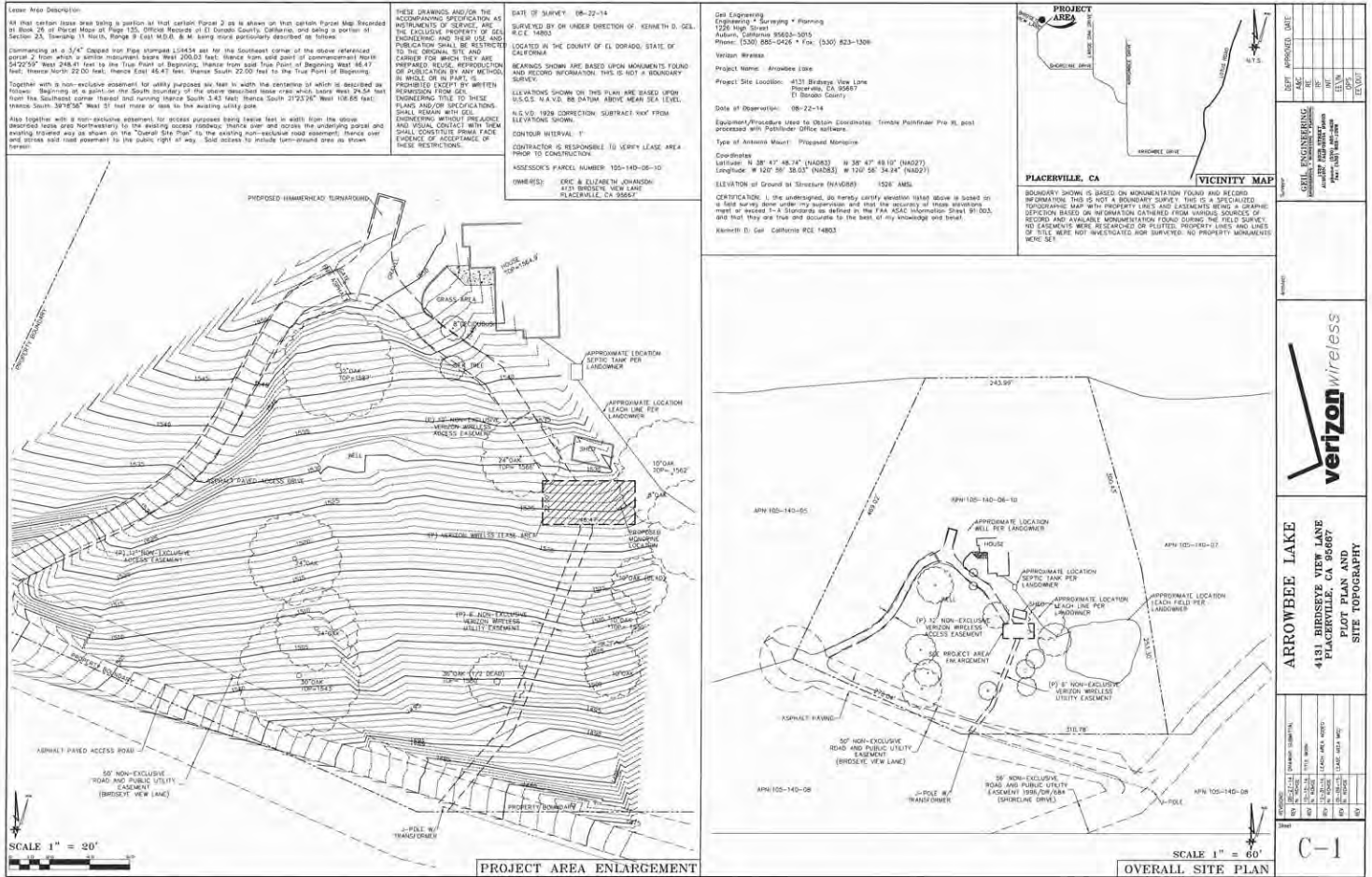


**Proposed**

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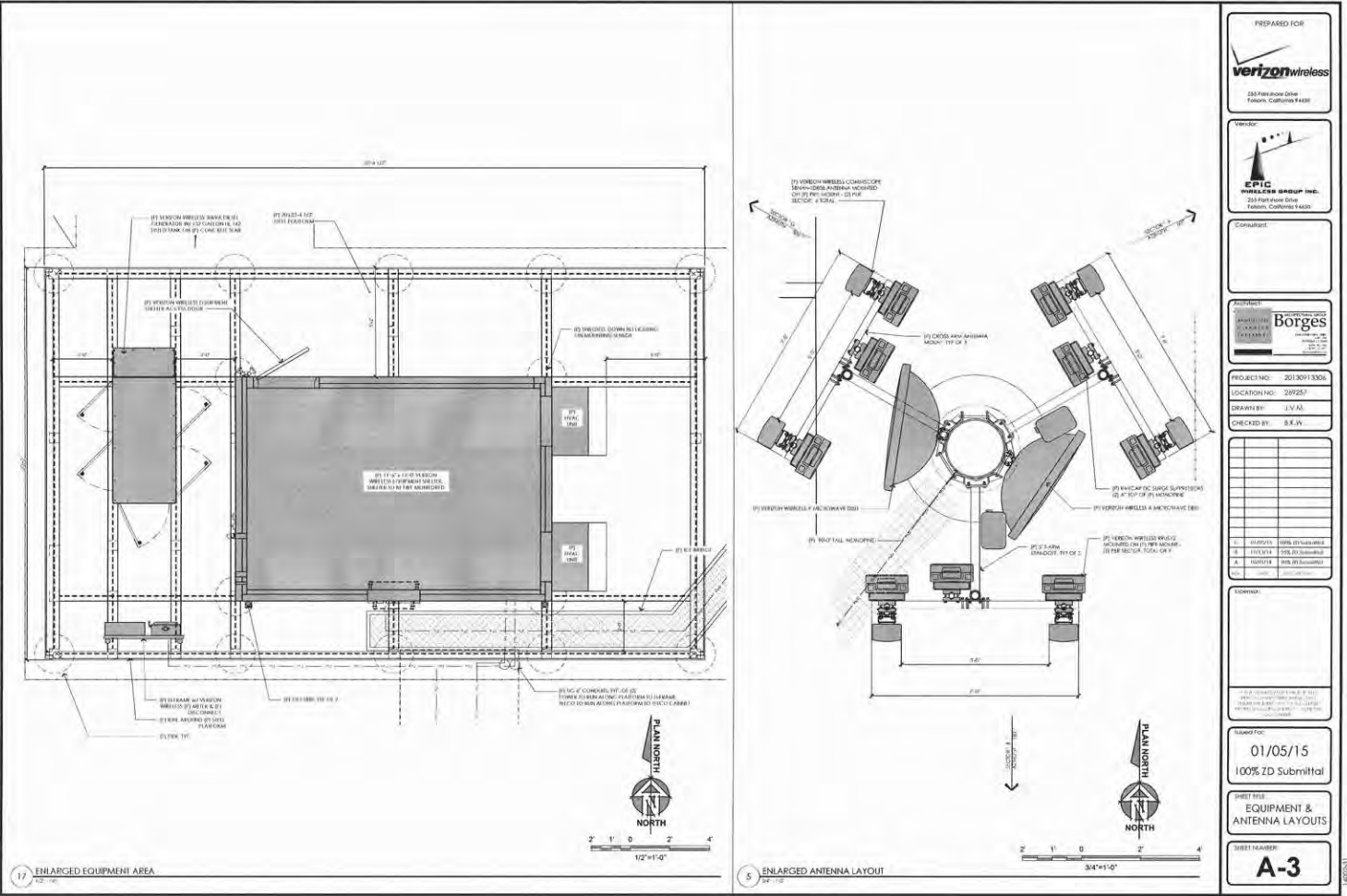
**SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE**  
**ZAB 06-27-19**  
**Page 75 of 123**



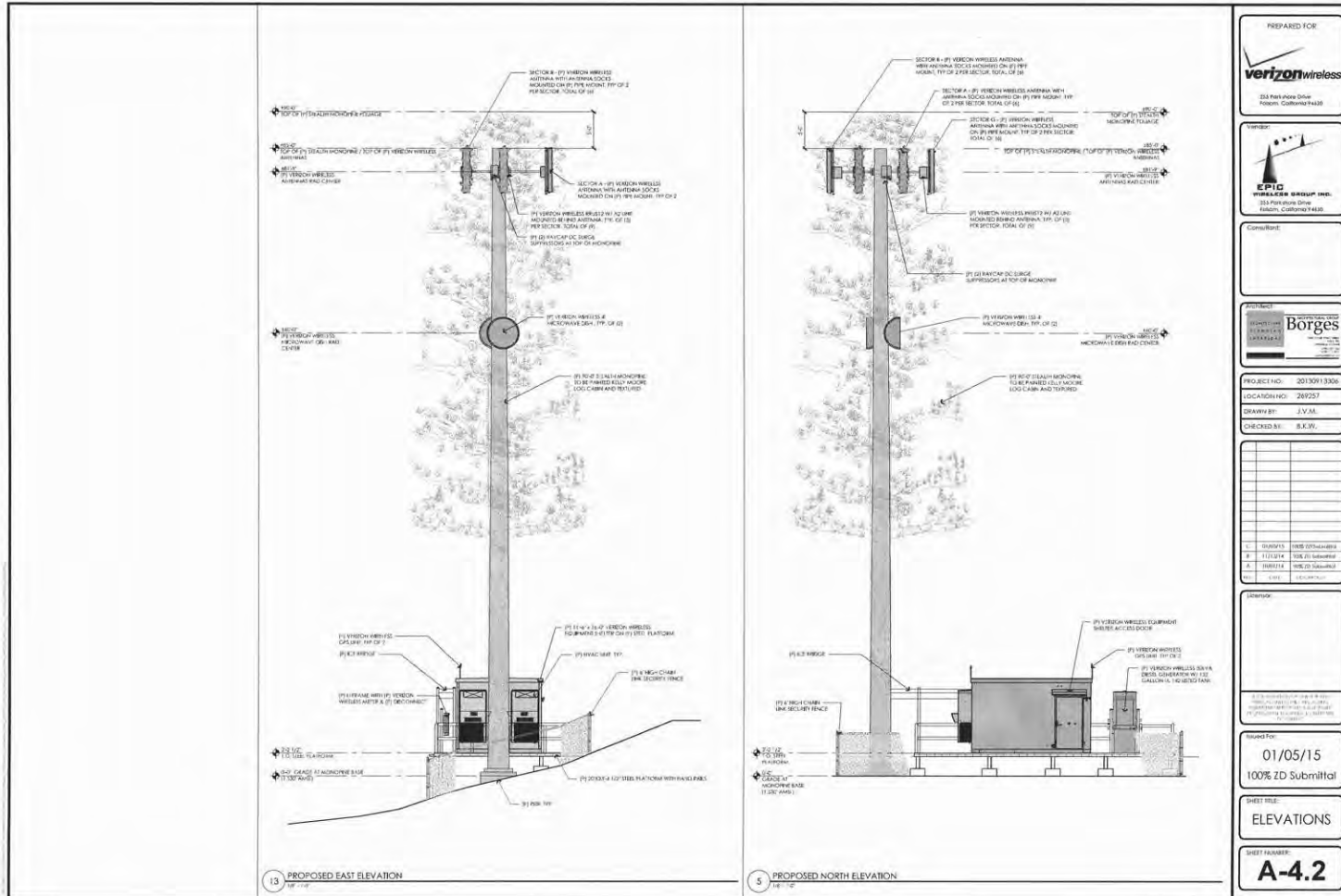












PREPARED FOR:

**verizon** wireless  
233 Park Plaza Drive  
Rossmore, Colorado 80468

DESIGNED BY:

**EPIC** WIRELESS GROUP INC.  
233 Park Plaza Drive  
Rossmore, Colorado 80468

CONTRACT:

PROJECT NO.:

LOCATION NO.:

PROJECT NO. 20130913006  
LOCATION NO. 269257  
DRAWN BY: J.V.M.  
CHECKED BY: B.K.W.

1	REVISION	DATE
2	REVISION	DATE
3	REVISION	DATE
4	REVISION	DATE
5	REVISION	DATE

REVISIONS:

DATE: 01/05/15

100% 2D Submittal

SHEET TITLE:

**ELEVATIONS**

SHEET NUMBER:

**A-4.2**

SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE  
ZAB 06-27-19  
Page 81 of 123

### SD030 Industrial Diesel Generator Set

30 kW Diesel

**Standard Power Ratings**  
37 SVA 30kW 60 Hz

**Prime Power Rating**  
30kVA 24kW 60 Hz

**Features**

- Complies with EPA Tier 4 Interim emissions regulations
- Low fuel consumption
- Low maintenance
- Quiet operation
- Long life
- Easy service

**Benefits**

- High efficiency
- Low operating costs
- Reliable performance
- Compact design
- Easy installation
- Low noise levels
- Wide operating range
- Easy maintenance

primary codes and standards

### SD030 application and engineering data

30 kW Diesel

**TECHNICAL SPECIFICATIONS**

Item	Value	Item	Value
Rated Power	30 kW	Rated Voltage	208 VAC
Prime Power	24 kW	Rated Frequency	60 Hz
Standby Power	37 SVA	Rated Current	85 A
Efficiency	85%	Rated Power Factor	0.8
Rated RPM	1800	Rated Power Factor	0.8
Rated Speed	1800	Rated Power Factor	0.8
Rated Torque	130 Nm	Rated Power Factor	0.8
Rated Torque	130 Nm	Rated Power Factor	0.8

**GENERAL INFORMATION**

Item	Value	Item	Value
Weight	1000 kg	Weight	1000 kg
Dimensions	1000 x 1000 x 1000 mm	Dimensions	1000 x 1000 x 1000 mm
Lead Time	4 weeks	Lead Time	4 weeks
Warranty	3 years	Warranty	3 years
Service	24 hours	Service	24 hours
Support	24 hours	Support	24 hours

**SD030 EXISTING OPERATING CONDITIONS**

Altitude: 0 to 2000 m  
Ambient Temperature: 0 to 40°C  
Relative Humidity: 0 to 100%  
Air Density: 1.2 kg/m³

### SD030 operating data (80Hz)

30 kW Diesel

**OPERATING DATA**

Item	Value	Item	Value
Rated Power	30 kW	Rated Voltage	208 VAC
Prime Power	24 kW	Rated Frequency	60 Hz
Standby Power	37 SVA	Rated Current	85 A
Efficiency	85%	Rated Power Factor	0.8
Rated RPM	1800	Rated Power Factor	0.8
Rated Speed	1800	Rated Power Factor	0.8
Rated Torque	130 Nm	Rated Power Factor	0.8
Rated Torque	130 Nm	Rated Power Factor	0.8

**TECHNICAL SPECIFICATIONS**

Item	Value	Item	Value
Weight	1000 kg	Weight	1000 kg
Dimensions	1000 x 1000 x 1000 mm	Dimensions	1000 x 1000 x 1000 mm
Lead Time	4 weeks	Lead Time	4 weeks
Warranty	3 years	Warranty	3 years
Service	24 hours	Service	24 hours
Support	24 hours	Support	24 hours

PREPARED FOR:

222 Park Avenue Drive  
Folsom, California 95630

VERISIC:

300 Redwood Drive  
Folsom, California 95630

CONSULTANT:

PROJECT NO: 2013071336  
LOCATION/NO: 28257  
DRAWN BY: JVA  
CHECKED BY: B.E.W.

### SD030 standard features and options

30 kW Diesel

**STANDARD FEATURES**

- Complies with EPA Tier 4 Interim emissions regulations
- Low fuel consumption
- Low maintenance
- Quiet operation
- Long life
- Easy service
- Wide operating range
- Easy installation
- Low noise levels
- Easy maintenance

**OPTIONS**

- Generator set with 208VAC, 3 phase, 4 wire, 60 Hz output
- Generator set with 240VAC, 3 phase, 4 wire, 60 Hz output
- Generator set with 480VAC, 3 phase, 3 wire, 60 Hz output
- Generator set with 480VAC, 3 phase, 4 wire, 60 Hz output
- Generator set with 600VAC, 3 phase, 3 wire, 60 Hz output
- Generator set with 600VAC, 3 phase, 4 wire, 60 Hz output
- Generator set with 800VAC, 3 phase, 3 wire, 60 Hz output
- Generator set with 800VAC, 3 phase, 4 wire, 60 Hz output
- Generator set with 1000VAC, 3 phase, 3 wire, 60 Hz output
- Generator set with 1000VAC, 3 phase, 4 wire, 60 Hz output

### SD030 dimensions, weights and sound levels

30 kW Diesel

**Dimensions**

Overall Length: 1000 mm  
Overall Width: 1000 mm  
Overall Height: 1000 mm

**Weights**

Generator Set: 1000 kg  
Generator Set with Enclosure: 1200 kg

**Sound Levels**

Sound Power Level (SWL): 100 dB(A)  
Sound Pressure Level (SPL): 85 dB(A)

### SD030 2.4 Liter Level 2A

30 kW Diesel

**Octave Band Sound Data SD030 2.4 Liter Diesel**

Frequency (Hz)	Sound Pressure Level (dB)
125	95
160	95
200	95
250	95
315	95
400	95
500	95
630	95
800	95
1000	95
1250	95
1600	95
2000	95
2500	95
3150	95
4000	95
5000	95
6300	95
8000	95
10000	95

**TECHNICAL SPECIFICATIONS**

Item	Value	Item	Value
Rated Power	30 kW	Rated Voltage	208 VAC
Prime Power	24 kW	Rated Frequency	60 Hz
Standby Power	37 SVA	Rated Current	85 A
Efficiency	85%	Rated Power Factor	0.8
Rated RPM	1800	Rated Power Factor	0.8
Rated Speed	1800	Rated Power Factor	0.8
Rated Torque	130 Nm	Rated Power Factor	0.8
Rated Torque	130 Nm	Rated Power Factor	0.8

**GENERATOR SPECIFICATION**

1. All generators are 230V (T) nominal from side frame of generator set.  
2. Full load current is 100 A at 208V, 3 phase, 4 wire, 60 Hz.  
3. Data subject to change without notice.

GENERATOR POWER SYSTEMS, INC. Rev. 0

01/05/15  
100% 2D Submittal

SHEET TITLE:  
GENERATOR SPECIFICATION

SHEET NUMBER:  
A-5.1

**Bard**

**THE WALL-MOUNT™ STEP CAPACITY AIR CONDITIONERS**  
Integrated Part Load Value (PLV) Efficiency Up To 1.3 BTU/WATT

**WAZ3 - WALL Right Side Control Panel**  
18.25 - 18.50 and 20.00 Capacity Panel  
2 to 3 Ton (25,400 to 36,500 Btu/h)

**GREEN REFRIGERANT R-410A**



The Bard WAZ™ Series is the world's most energy efficient air conditioner...  
The Bard WAZ™ Series is the world's most energy efficient air conditioner...  
The Bard WAZ™ Series is the world's most energy efficient air conditioner...

**Environmental Features:**  
- Green Refrigerant R-410A  
- Energy Star Qualified  
- Variable Frequency Drive (VFD) Compressor  
- Inverter Technology  
- Auto Restart  
- Auto Restart  
- Auto Restart

**Warranty:**  
- 5 Year Limited  
- 5 Year Limited  
- 5 Year Limited

**Capacity and Performance Data**

Model	Capacity (Btu/h)	PLV	SEER	SEER2	SEER3
WAZ3-18.25	25,400	1.25	13.0	13.5	14.0
WAZ3-18.50	28,000	1.25	13.0	13.5	14.0
WAZ3-20.00	36,500	1.25	13.0	13.5	14.0

**Performance Data Table:**

Model	Capacity (Btu/h)	PLV	SEER	SEER2	SEER3
WAZ3-18.25	25,400	1.25	13.0	13.5	14.0
WAZ3-18.50	28,000	1.25	13.0	13.5	14.0
WAZ3-20.00	36,500	1.25	13.0	13.5	14.0

**Dimensions and Weight Data**

Model	Capacity (Btu/h)	PLV	SEER	SEER2	SEER3
WAZ3-18.25	25,400	1.25	13.0	13.5	14.0
WAZ3-18.50	28,000	1.25	13.0	13.5	14.0
WAZ3-20.00	36,500	1.25	13.0	13.5	14.0

**Weight and Dimensions:**

Model	Capacity (Btu/h)	PLV	SEER	SEER2	SEER3
WAZ3-18.25	25,400	1.25	13.0	13.5	14.0
WAZ3-18.50	28,000	1.25	13.0	13.5	14.0
WAZ3-20.00	36,500	1.25	13.0	13.5	14.0

PREPARED FOR:

**verizonwireless**

250 West Asset Center  
Folsom, California 95630

**EPIC WIRELESS GROUP INC.**  
250 West Asset Center  
Folsom, California 95630

**Borges**

PROJECT NO.: 2013011326  
LOCATION NO.: 369227  
DRAWN BY: J.Y.M.  
CHECKED BY: B.J.W.

DATE: 01/05/15  
100% ZD Submittal

SHEET TITLE: HVAC UNIT SPECIFICATION

SHEET NUMBER: A-5.2

**WAZ3 Sound Data Matrix (dB @ 10 feet)**

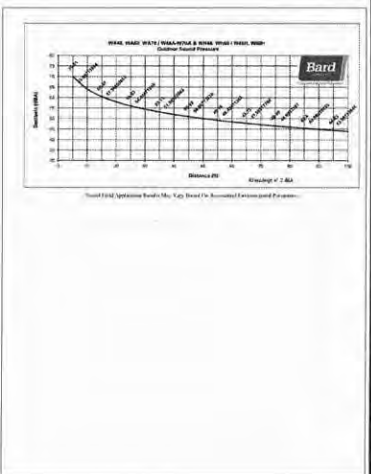
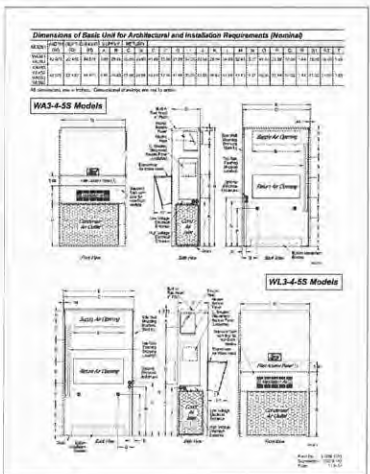
Model	Capacity (Btu/h)	PLV	SEER	SEER2	SEER3
WAZ3-18.25	25,400	1.25	13.0	13.5	14.0
WAZ3-18.50	28,000	1.25	13.0	13.5	14.0
WAZ3-20.00	36,500	1.25	13.0	13.5	14.0

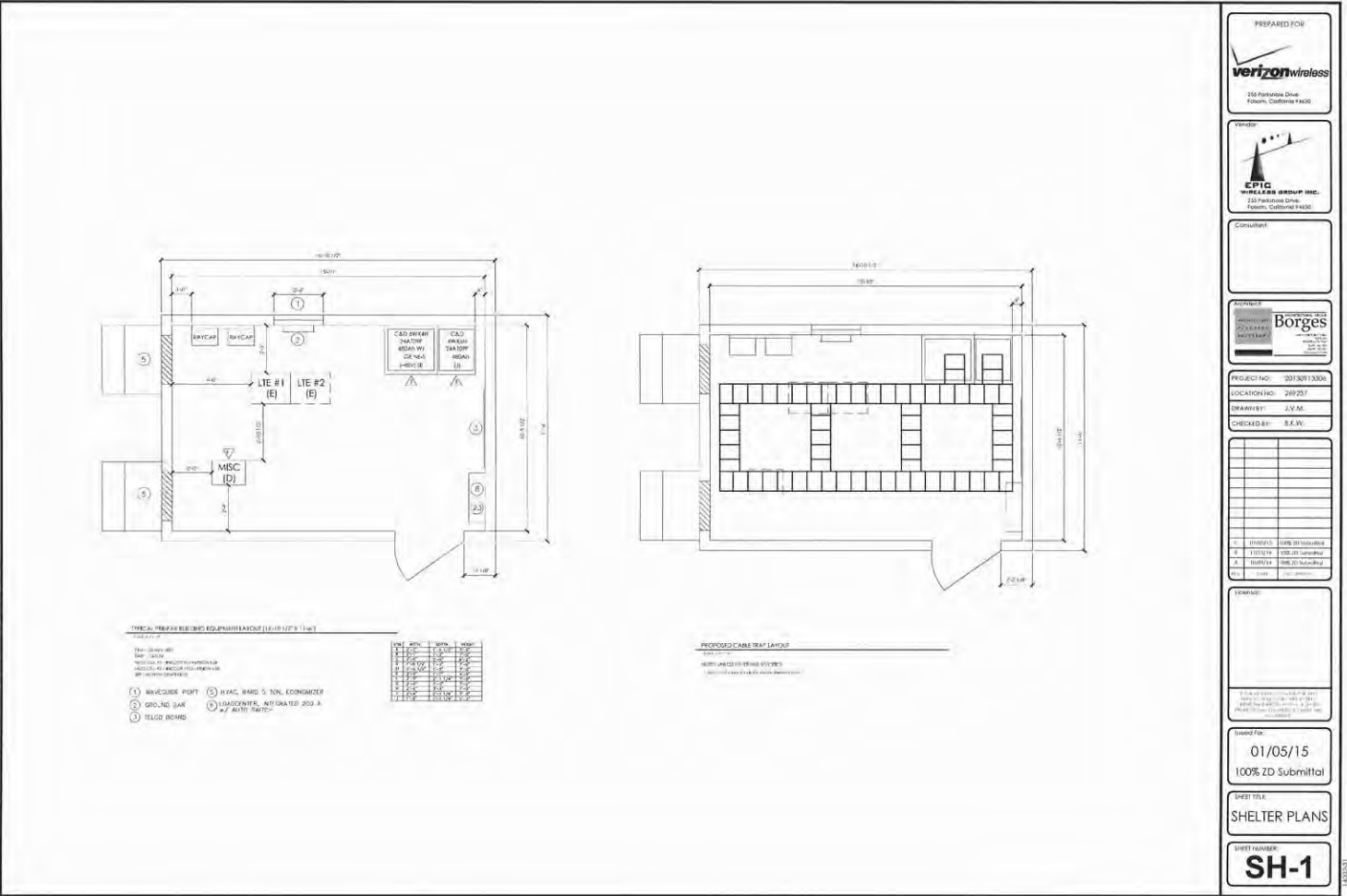
**WAZ42 Sound Data Matrix (dB @ 10 feet)**

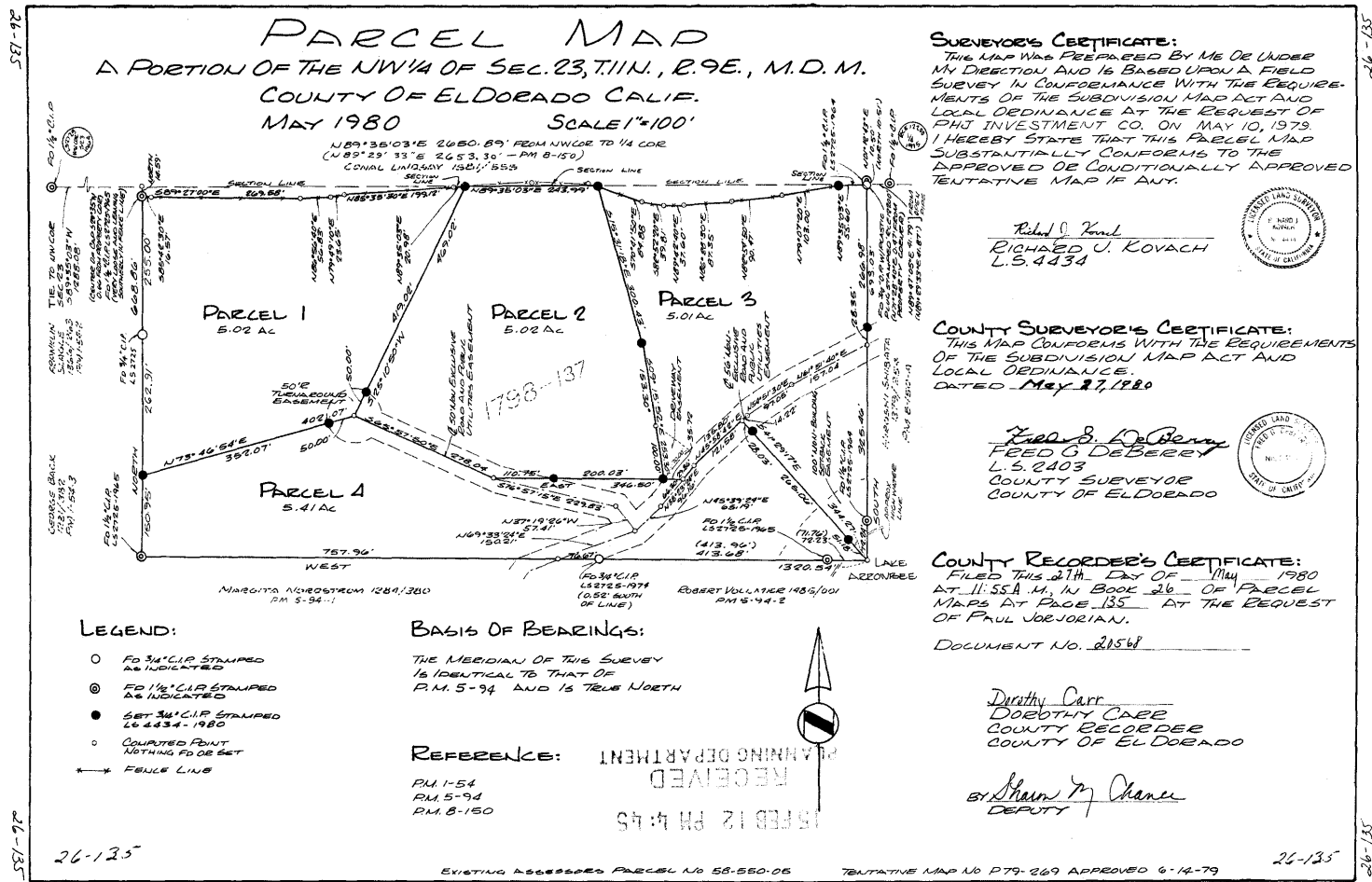
Model	Capacity (Btu/h)	PLV	SEER	SEER2	SEER3
WAZ42-18.25	25,400	1.25	13.0	13.5	14.0
WAZ42-18.50	28,000	1.25	13.0	13.5	14.0
WAZ42-20.00	36,500	1.25	13.0	13.5	14.0

**WAZ55 Sound Data Matrix (dB @ 10 feet)**

Model	Capacity (Btu/h)	PLV	SEER	SEER2	SEER3
WAZ55-18.25	25,400	1.25	13.0	13.5	14.0
WAZ55-18.50	28,000	1.25	13.0	13.5	14.0
WAZ55-20.00	36,500	1.25	13.0	13.5	14.0

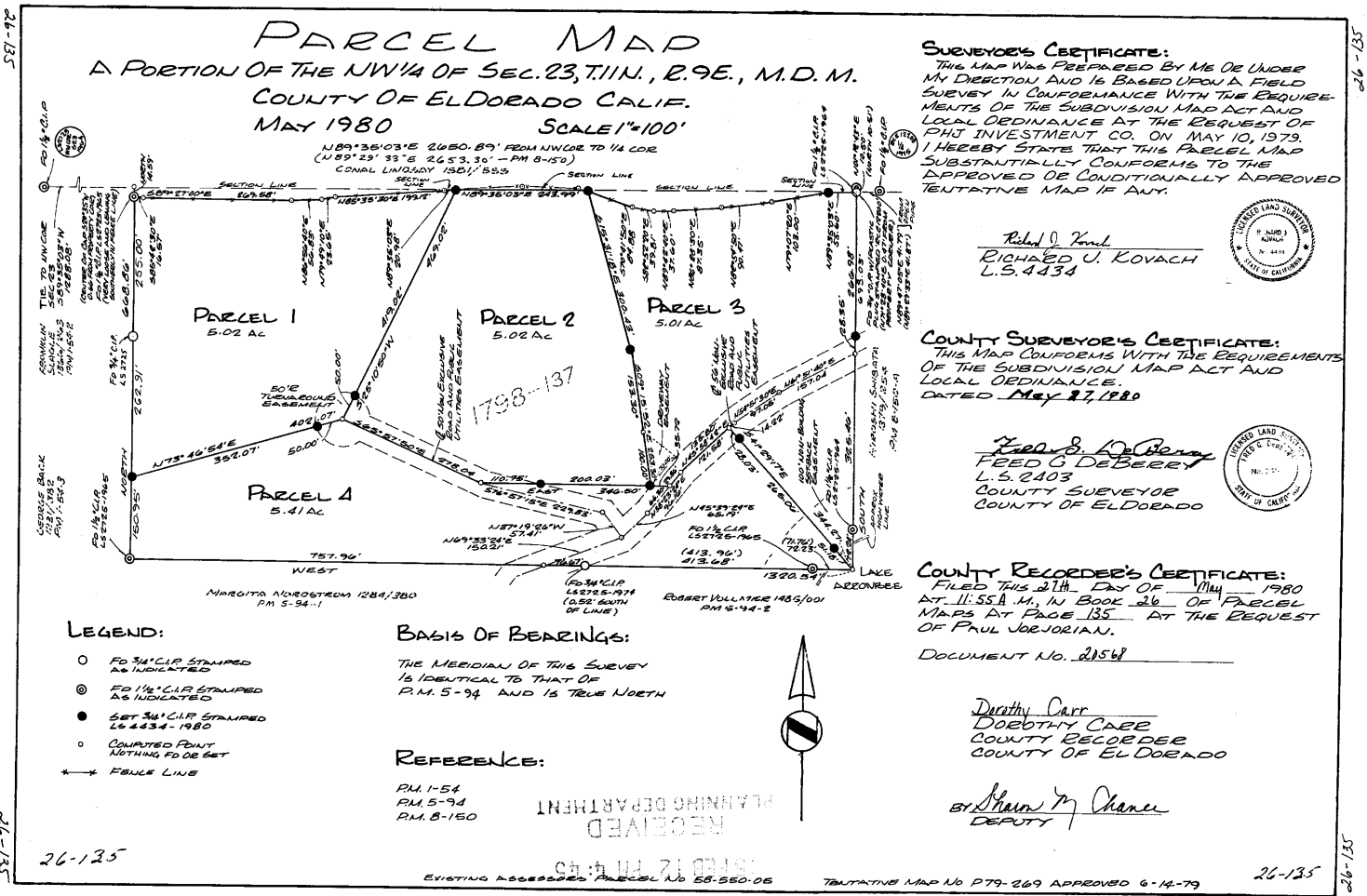






S 15-0004

SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE  
ZAB 06-27-19  
Page 85 of 123





SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

ZAB 06-27-19

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POR. SEC. 23., T.11N, R.9E., M.D.M.

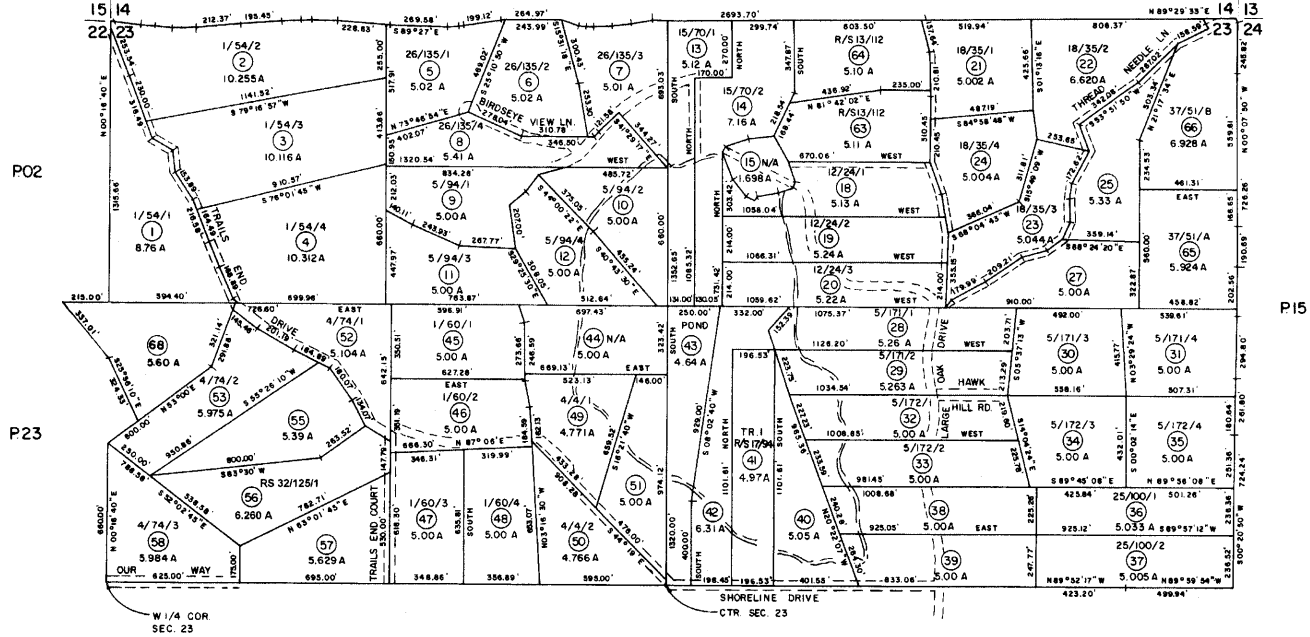
Tax Area Code

105:14

15 FEB 12 PM 4:45

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P02



P02

P23

P16

P15

REV. 4/28/2011 Assessor's Map Bk. 105 - Pg. 14  
County of El Dorado, California

THIS MAP IS NOT A SURVEY, It is prepared by the El Dorado Co. Assessor's office for assessment purposes only.

NOTE - Assessor's Block Numbers Shown in Ellipses  
Assessor's Parcel Numbers Shown in Circles



# PUBLIC NOTICE

Federal Communications Commission  
445 12<sup>th</sup> St., S.W.  
Washington, D.C. 20554

News Media Information 202 / 418-0500  
Internet: <http://www.fcc.gov>  
TTY: 1-888-835-5322

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## WIRELESS TELECOMMUNICATIONS BUREAU OFFERS GUIDANCE ON INTERPRETATION OF SECTION 6409(a) OF THE MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012

DA 12-2047  
January 25, 2013

On February 22, 2012, the Middle Class Tax Relief and Job Creation Act of 2012 (Tax Act)<sup>1</sup> became law. Section 6409(a) of the Tax Act provides that a state or local government “may not deny, and shall approve” any request for collocation, removal, or replacement of transmission equipment on an existing wireless tower or base station, provided this action does not substantially change the physical dimensions of the tower or base station.<sup>2</sup> The full text of Section 6409(a) is reproduced in the Appendix to this Public Notice.

To date, the Commission has not received any formal petition to interpret or apply the provisions of Section 6409(a). We also are unaware of any judicial precedent interpreting or applying its terms. The Wireless Telecommunications Bureau has, however, received informal inquiries from service providers, facilities owners, and state and local governments seeking guidance as to how Section 6409(a) should be applied. In order to assist interested parties, this Public Notice summarizes the Bureau’s understanding of Section 6409(a) in response to several of the most frequently asked questions.<sup>3</sup>

### What does it mean to “substantially change the physical dimensions” of a tower or base station?

Section 6409(a) does not define what constitutes a “substantial[] change” in the dimensions of a tower or base station. In a similar context, under the *Nationwide Collocation Agreement* with the Advisory Council on Historic Preservation and the National Conference of State Historic Preservation Officers, the Commission has applied a four-prong test to determine whether a collocation will effect a “substantial increase in the size of [a] tower.”<sup>4</sup> A proposed collocation that does not involve a substantial increase in

---

<sup>1</sup> Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. 112-96, H.R. 3630, 126 Stat. 156 (enacted Feb. 22, 2012) (Tax Act).

<sup>2</sup> *Id.*, § 6409(a).

<sup>3</sup> Although we offer this interpretive guidance to assist parties in understanding their obligations under Section 6409(a), *see, e.g., Truckers United for Safety v. Federal Highway Administration*, 139 F.3d 934 (D.C.Cir. 1998), the Commission remains free to exercise its discretion to interpret Section 6409(a) either by exercising its rulemaking authority or through adjudication. With two exceptions not relevant here, the Tax Act expressly grants the Commission authority to “implement and enforce” this and other provisions of Title VI of that Act “as if this title is a part of the Communications Act of 1934 (47 U.S.C. 151 et seq.)” Tax Act § 6003.

<sup>4</sup> 47 C.F.R. Part 1, App. B, Nationwide Programmatic Agreement for the Collocation of Wireless Antennas, § I.C (*Nationwide Collocation Agreement*).

size is ordinarily excluded from the Commission's required historic preservation review under Section 106 of the National Historic Preservation Act (NHPA).<sup>5</sup> The Commission later adopted the same definition in the *2009 Declaratory Ruling* to determine whether an application will be treated as a collocation when applying Section 332(c)(7) of the Communications Act of 1934.<sup>6</sup> The Commission has also applied a similar definition to determine whether a modification of an existing registered tower requires public notice for purposes of environmental review.<sup>7</sup>

Under Section I.C of the *Nationwide Collocation Agreement*, a “substantial increase in the size of the tower” occurs if:

- 1) [t]he mounting of the proposed antenna on the tower would increase the existing height of the tower by more than 10%, or by the height of one additional antenna array with separation from the nearest existing antenna not to exceed twenty feet, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this paragraph if necessary to avoid interference with existing antennas; or
- 2) [t]he mounting of the proposed antenna would involve the installation of more than the standard number of new equipment cabinets for the technology involved, not to exceed four, or more than one new equipment shelter; or
- 3) [t]he mounting of the proposed antenna would involve adding an appurtenance to the body of the tower that would protrude from the edge of the tower more than twenty feet, or more than the width of the tower structure at the level of the appurtenance, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this paragraph if necessary to shelter the antenna from inclement weather or to connect the antenna to the tower via cable; or
- 4) [t]he mounting of the proposed antenna would involve excavation outside the current tower site, defined as the current boundaries of the leased or owned property surrounding the tower and any access or utility easements currently related to the site.

Although Congress did not adopt the Commission's terminology of “substantial increase in size” in Section 6409(a), we believe that the policy reasons for excluding from Section 6409(a) collocations that substantially change the physical dimensions of a structure are closely analogous to those that animated the Commission in the *Nationwide Collocation Agreement* and subsequent proceedings. In light of the Commission's prior findings, the Bureau believes it is appropriate to look to the existing definition of “substantial increase in size” to determine whether the collocation, removal, or replacement of equipment

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<sup>5</sup> See 16 U.S.C. § 470f, *see also* 47 C.F.R. § 1.1307(a)(4) (requiring applicants to determine whether proposed facilities may affect properties that are listed, or are eligible for listing, in the National Register of Historic Places).

<sup>6</sup> See Petition for Declaratory Ruling to Clarify Provisions of Section 332(c)(7)(B) to Ensure Timely Siting Review and to Preempt Under Section 253 State and Local Ordinances that Classify All Wireless Siting Proposals as Requiring a Variance, WT Docket No. 08-165, *Declaratory Ruling*, 24 FCC Rcd. 13994, 14012, para. 46 & n.146 (2009) (*2009 Declaratory Ruling*), *recon. denied*, 25 FCC Rcd. 11157 (2010), *pet. for review denied sub nom. City of Arlington, Texas v. FCC*, 668 F.3d 229 (5<sup>th</sup> Cir.), *cert. granted*, 113 S.Ct. 524 (2012); 47 U.S.C. § 332(c)(7).

<sup>7</sup> See 47 C.F.R. § 17.4(c)(1)(B); National Environmental Policy Act Compliance for Proposed Tower Registrations, WT Docket No. 08-61, *Order on Remand*, 26 FCC Rcd. 16700, 16720-21, para. 53 (2011).

on a wireless tower or base station substantially changes the physical dimensions of the underlying structure within the meaning of Section 6409(a).

### **What is a “wireless tower or base station”?**

A “tower” is defined in the *Nationwide Collocation Agreement* as “any structure built for the sole or primary purpose of supporting FCC-licensed antennas and their associated facilities.”<sup>8</sup> The Commission has described a “base station” as consisting of “radio transceivers, antennas, coaxial cable, a regular and backup power supply, and other associated electronics.”<sup>9</sup> Section 6409(a) applies to the collocation, removal, or replacement of equipment on a wireless tower or base station. In this context, we believe it is reasonable to interpret a “base station” to include a structure that currently supports or houses an antenna, transceiver, or other associated equipment that constitutes part of a base station.<sup>10</sup> Moreover, given the absence of any limiting statutory language, we believe a “base station” encompasses such equipment in any technological configuration, including distributed antenna systems and small cells.

Section 6409(a) by its terms applies to any “wireless” tower or base station. By contrast, the scope of Section 332(c)(7) extends only to facilities used for “personal wireless services” as defined in that section.<sup>11</sup> Given Congress’s decision not to use the pre-existing definition from another statutory provision relating to wireless siting, we believe the scope of a “wireless” tower or base station under Section 6409(a) is not intended to be limited to facilities that support “personal wireless services” under Section 332(c)(7).

### **May a state or local government require an application for an action covered under Section 6409(a)?**

Section 6409(a) states that a state or local government “may not deny, and shall approve, any eligible facilities request. . . .” It does not say that a state or local government may not require an application to be filed. The provision that a state or local government must approve and may not deny a request to take a covered action, in the Bureau’s view, implies that the relevant government entity may require the filing of an application for administrative approval.

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<sup>8</sup> See *Nationwide Collocation Agreement*, § I.B.

<sup>9</sup> See Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, WT Docket No. 10-133, *Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services, Fifteenth Report*, 26 FCC Rcd. 9664, 9481, para. 308 (2011).

<sup>10</sup> See also 47 C.F.R. Part 1, App. C, *Nationwide Programmatic Agreement Regarding the Section 106 National Historic Preservation Act Review Process*, § II.A.14 (defining “tower” to include “the on-site fencing, equipment, switches, wiring, cabling, power sources, shelters, or cabinets associated with that Tower but not installed as part of an Antenna as defined herein”).

<sup>11</sup> 47 U.S.C. § 332(c)(7)(A). “Personal wireless services” is in turn defined to mean “commercial mobile services, unlicensed wireless services, and common carrier wireless exchange access services.” *Id.* § 332(c)(7)(C)(1).

**Is there a time limit within which an application must be approved?**

Section 6409(a) does not specify any period of time for approving an application. However, the statute clearly contemplates an administrative process that invariably ends in approval of a covered application. We believe the time period for processing these applications should be commensurate with the nature of the review.

In the *2009 Declaratory Ruling*, the Commission found that 90 days is a presumptively reasonable period of time to process collocation applications.<sup>12</sup> In light of the requirement of Section 6409(a) that the reviewing authority “may not deny, and shall approve” a covered request, we believe that 90 days should be the maximum presumptively reasonable period of time for reviewing such applications, whether for “personal wireless services” or other wireless facilities.

Wireless Telecommunications Bureau contact: Maria Kirby at (202) 418-1476 or by email: [Maria.Kirby@fcc.gov](mailto:Maria.Kirby@fcc.gov).

-FCC-

For more news and information about the Federal Communications Commission please visit: [www.fcc.gov](http://www.fcc.gov)

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<sup>12</sup> See *2009 Declaratory Ruling*, 24 FCC Rcd. at 14012-13, paras. 46-47.

## APPENDIX

### SEC. 6409. WIRELESS FACILITIES DEPLOYMENT.

#### (a) FACILITY MODIFICATIONS.

(1) IN GENERAL. Notwithstanding section 704 of the Telecommunications Act of 1996 (Public Law 104–104) or any other provision of law, a State or local government may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.

(2) ELIGIBLE FACILITIES REQUEST. For purposes of this subsection, the term “eligible facilities request” means any request for modification of an existing wireless tower or base station that involves —

- (A) collocation of new transmission equipment;
- (B) removal of transmission equipment; or
- (C) replacement of transmission equipment.

(3) APPLICABILITY OF ENVIRONMENTAL LAWS. Nothing in paragraph (1) shall be construed to relieve the Commission from the requirements of the National Historic Preservation Act or the National Environmental Policy Act of 1969.

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Cell Tower Removed After 4th Ripon Student Diagnosed with Cancer | Physicians for Safe Technology

-----Original Message-----

From: Vivian Warkentin [mailto:vivwark@sbcglobal.net]

Sent: Wednesday, June 26, 2019 4:35 PM

To: All Council <council@cityofberkeley.info>; Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>

Subject: Cell Tower Removed After 4th Ripon Student Diagnosed with Cancer | Physicians for Safe Technology

<https://mdsafetech.org/2019/03/25/cell-tower-to-be-removed-after-4th-ripon-student-diagnosed-with-cancer/>

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**From:** Angelina DeAntonis <angelina@ocelotclothing.com>  
**Sent:** Wednesday, June 26, 2019 4:04 PM  
**To:** Zoning Adjustments Board (ZAB)  
**Cc:** Chris Raisner  
**Subject:** opposition to proposed cell tower at the border of Berryman Reservoir and Codornices Park; Permit# ZP2018-0236  
**Attachments:** letter against proposed cell tower.docx

To whom it may concern,

We are extremely concerned about the proposal for a cell tower at the border of Berryman Reservoir and Codornices Park. Please find our letter attached,

Sincerely,

The Raisner Household  
96 Tamalpais Rd.  
Berkeley, CA 94708

letter: (attached also)

Raisner Household  
96 Tamaplais Rd  
Berkeley, CA 94708  
510-655-9245

Re: Permit# ZP2018-0236

To whom it may concern,

We are deeply troubled by the proposal to put a cell tower on the border of Berryman Reservoir/ Codornices Park for so many reasons.

We just purchased a home on Tamalpais Rd in summer 2018. A primary concern of ours was to be located away from cellular towers, so we made this move from San Francisco to the tranquil hills of Berkeley.

Cellular towers pose many risks to health and safety, and this one in particular risks exposing children in the park and playing fields to higher levels of radiation than can proven to be safe. In addition everyone living around the area will be exposed.

The proposed cell tower heightens the risk of fire in an already heavily treed area, in an already high fire risk area. It also poses a hazard to safely accessing the reservoir, which is crucial for safely accessing water in case of a fire.



There will also be pollution from the diesel generator. Furthermore the tower may also exceed Berkeley's noise ordinance.

All of these factors jeopardize quality of life and are safety issues. We do not know the true impact of cellular technology on human health. The proposal has no plan for unbiased monitoring of radiation levels.

Why take this risk in one of Berkeley's adored and enjoyed by visitors from all of Berkeley and the greater Bay area? With the Rose Gardens, Codornices Park, historic walking paths, and Historic Maybeck architecture on the Rose Walk, there is so much to savor in this hillside neighborhood, and surely a cellular tower is a detriment to the entire area.

There are so many reasons to not build this cell tower; the city risks so much in terms of health, beauty, serenity of the neighborhood, and the proposed tower is simply unsightly, ruining views which will no doubt reduce surrounding property values at the very least.

Please oppose and strike down the permit for this unsafe project.

Sincerely,

Oliver Raisner  
Christian Raisner  
Jacobi Raisner  
Angelina DeAntonis

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**From:** Vivian Warkentin <vivwark@sbcglobal.net>  
**Sent:** Wednesday, June 26, 2019 3:29 PM  
**To:** Zoning Adjustments Board (ZAB)  
**Subject:** Is A Cell Tower Causing Cancer In School Children? - CBS Sacramento

<https://sacramento.cbslocal.com/video/4045708-is-a-cell-tower-causing-cancer-in-school-children/>

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Cordonices cell tower application

-----Original Message-----

From: Vivian Warkentin [mailto:vivwark@sbcglobal.net]  
Sent: Wednesday, June 26, 2019 3:25 PM  
To: Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
Subject: Cordonices cell tower application

Dear Zoning Board,

Please deny the application for a 50 foot cell tower at Berryman Reservoir.

It is time for our local representatives to stand up for the health and safety of the public, including humans plants animals insects, rather than hop to at the beck and call of the telecom industry. There is a lot of cheap talk going around about protecting nature, yet this travesty of corporate rule over us and our environment goes on.

More and more information is coming to the fore about the dire health dangers of wireless cell towers. Wireless is an incredibly inefficient use of energy and only benefits the monopoly desires of the telecom companies like ATT and Verizon. Please have the courage to stand for what is right.

Thank you.

Vivian Warkentin, Berkeley

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Cell Tower in Codornices Park

**From:** LOIS FAIRLEY [mailto:slfairley@prodigy.net]  
**Sent:** Wednesday, June 26, 2019 3:01 PM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** Cell Tower in Codornices Park

Please do not allow construction of the Verizon cell tower in Codornices Park. The proposed size and placement of the tower is completely incongruous for the neighborhood. Not only will it be an unsightly blight but it poses a health and safety hazard to nearby residents as well as visitors, especially children, frequenting the park. I've lived here on Tamalpais Road since 1980 and I never thought I would see the day when the city would sacrifice the health and well being of residents and guests in our city in order to facilitate financial gain for a commercial business such as Verizon.

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Letter for Thursday June 27  
**Attachments:** 1951-75 Shattuck Ave ZAB.pdf

**From:** Talie Paul [mailto:talieandpaul@gmail.com]  
**Sent:** Wednesday, June 26, 2019 12:28 PM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** Letter for Thursday June 27

Hello Secretary,

Would you please circulate the attached letter to the Zoning Adjustments Board? This letter is in reference to 1951-75 Shattuck Ave which will be discussed Thursday June 27.

Thank you very much,  
Talie



**REVIEW OF AGENCY PLANNING APPLICATION**

<b>THIS IS NOT A PROPOSAL TO PROVIDE WATER SERVICES</b>			
The technical data supplied herein is based on preliminary information, is subject to revision and is to be used for planning purpose ONLY			
DATE: 06/19/2019	EBMUD MAP(S): 1491B508	EBMUD FILE:S-10809	
AGENCY: City of Berkeley Land Use Planning Division Attn: Zoning Board 1947 Center Street, 2nd Floor BERKELEY, CA 94704	AGENCY FILE: ZP2018-0236	FILE TYPE: Other	
APPLICANT: David Haddock / Verizon 12919 Alcosta Street, #1  San Ramon, CA 94563		OWNER: EBMUD, Robert Korn 375 11th Street, M/S 903 Oakland, CA 94607	
<b>DEVELOPMENT DATA</b>			
ADDRESS/LOCATION: 0 Euclid Avenue City:BERKELEY Zip Code: 94709			
ZONING: PREVIOUS LAND USE: Berryman Reservoir site			
DESCRIPTION: Establish a new 50' high "monopole" 4G LTE wireless facility operated by Verizon Wireless at East Bay Municipal Utility District site consisting of six antennas, six remote radio units and associated group equipment			TOTAL ACREAGE:0.02 ac.
TYPE OF DEVELOPMENT:			
<b>WATER SERVICES DATA</b>			
PROPERTY: in EBMUD	ELEVATION RANGES OF STREETS: 500-500	ELEVATION RANGE OF PROPERTY TO BE DEVELOPED: 500-500	
None from existing main(s) Location of Main(s):		None from main extension(s) Location of Existing Main(s):	
PRESSURE ZONE	SERVICE ELEVATION RANGE	PRESSURE ZONE	SERVICE ELEVATION RANGE
<b>COMMENTS</b>			
The location and installation of the wireless antennas and associated equipment on EBMUD's Berryman Reservoir property is subject to the conditions and approval of EBMUD. EBMUD's Operations and Maintenance Department and Real Estate Services Division are currently reviewing the proposed project. The project sponsor should continue to work with EBMUD's Operation and Maintenance Department and Real Estate Services regarding the subject project.			
NL			
cc: Matt Elawady, Robert Korn			
<b>CHARGES &amp; OTHER REQUIREMENTS FOR SERVICE:</b> Contact the EBMUD New Business Office at (510)287-1008.			
 Jennifer L. McGregor, Senior Civil Engineer; DATE 6/24/19 WATER SERVICE PLANNING SECTION			

Received

JUN 26 2019

Use Planning

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Proposed Cell tower at Ebmud Berryman Reservoir  
**Attachments:** Letter to ZAB 06.25.19.docx; Verizon Wireless Facility Ebmud Berryman Reservoir.pdf

**From:** Justin Lombardelli [mailto:jlombardelli200@gmail.com]  
**Sent:** Tuesday, June 25, 2019 10:42 PM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>; Nawfal, Layal <LNawfal@cityofberkeley.info>  
**Subject:** Proposed Cell tower at Ebmud Berryman Reservoir

Please enter the attached letter and presentation into the record regarding Permit #ZP2018-0236

Please let me know if you have any questions. Thank you,  
Justin Lombardelli

June 25, 2019

Justin Lombardelli  
1350 Scenic Avenue Berkeley, CA 94708

Zoning Adjustments Board Land Use Planning Division  
1947 Center Street Berkeley, CA 94704  
RE: Proposed Cell Tower at 0 Euclid Avenue

Dear Members of the Board,

Let me start by posing a few questions: would you send your kids to a school with a cell tower on it? Would you send someone else's kids to a school with a cell tower on it? I would suggest talking with the parents of [kids that attend Weston Elementary School in Ripon California](#). After a long fought battle, Sprint finally shut down a cell tower on the campus after a major revolt by the parents. Kellie Prime's son Kyle was 10 years old when he was diagnosed with kidney cancer in 2016. Five months later, Kyle's buddy Mason Ferruli, developed **brain cancer**.....brain cancer in a 10 year old. It took 14 hours to remove the tumor from his brain. He had to learn to walk, talk and to eat all over again, says his mom Monica Ferruli. She says, "its absolutely not worth the risk". Two more kids were diagnosed with cancer this year. CBS News medical contributor and Oncologist Dr David Agus said the number of cases warrants further investigation. In total 8 students and teachers have been diagnosed with cancer.

There is also the [prolonged opposition from](#) the California Firefighters Union who lobbied to get the cell phone towers removed from their fire stations. Firefighter groups in the United States have long opposed cell towers on their stations. Not only that, but in California they have gained an exemption from the forced placement of towers on their stations because of the strong opposition they have- due to health concerns from the radiation. Dr. Gunnar Heuser, **led brain studies on firefighters following a cell tower installation on their firestation and found that they were all abnormal** . His SPECT brain study on firefighters in 2004 who complained of neurological problems following a cell tower installation at their firestation 5 years prior found that they were abnormal. The symptoms they experienced, which were documented in an [affidavit](#) filed by Susan D Foster and Dr Heuser, were; headaches, memory problems, sleeping problems, depression, and anxiety. Disturbingly, **the SPECT scans revealed a pattern of abnormal change which was concentrated over a wider area than would normally be seen in brains of individuals exposed to toxic inhalation**, as might be expected from fighting fires. Dr. Heuser indicated the **only plausible explanation at this time would be RF radiation exposure**. Additionally, the TOVA testing revealed among the six firefighters delayed reaction time, lack of impulse control, and difficulty in maintaining mental focus. Because of increasing complaints among firefighters with cellular antennas on their stations coupled with the California study showing damage among the six firefighters tested, a group of five individuals spread across two provinces and three states worked with Southern California firefighters to draft the resolution put before the IAFF membership.



Quote from Dave Gillotte, Active Duty Firecaptain, President, LA Country Firefighters Local 1014,

“As firefighters and paramedics, we live in these firehouses. What effect will these towers have on us? What are the risks to our neighbors? It’s a no-brainer that LA County should at least have done a proper study before putting 200-foot high-power microwave antennas on top of our heads.”

LA County Firefighters Local 1014 posted a petition on Change.org to “Immediately STOP installation of cell towers at all LA County fire and lifeguard facilities! It states, LA-RICS is in the process of installing cell towers at LA County fire stations and lifeguard facilities WITHOUT first studying the impact on the first responders who live and work there or the residents who live or work adjacent to the facilities. PLEASE SIGN THIS PETITION TODAY to make sure that installation of cell towers STOPS unless and until all safeguards are followed and SAFETY IS PROVEN!

- Cell tower Radio Frequency radiation has been reported to cause debilitating symptoms including excessive fatigue, headaches, weakness, memory impairment, tinnitus, dizziness, irritability, sleep disturbances, vertigo, and balance problems (Carpenter, 2014).
- The LA-RICS project has been **poorly planned** and rushed in an **unsafe** manner. Without any actual Radio Frequency Radiation emission exposure studies done in advance of the construction of the cell towers. This is unacceptable and inaccurate in determining the radio frequency radiation **exposure levels of firefighters**, of the residents who live near the stations, and of the **children who attend the schools near the stations**.
  - There has only been one sample Radio Frequency Emission Analysis Report done for all 87 proposed Fire Station sites.
  - No site-specific studies have been completed prior to build out or the potential exposure of Local 1014 members.
  - The sample report that was done as a model for all Fire Stations shows excessive Radio Frequency Radiation exposure levels.
  - Post construction Radio Frequency Radiation measurements are unacceptable.
- FCC Compliance does not equal safety or lack of hazard to firefighters, and cumulative Radio Frequency Radiation exposure has not been considered. **THE RULES TO PROTECT FIREFIGHTERS AND RESIDENTS MUST BE FOLLOWED!**

Let me also quote from an [International EMF Scientist appeal](#) to the Secretary General of the UN - signed by **230 scientists from 41 countries**.

“We are scientists engaged in the study of biological and health effects of non-ionizing electromagnetic fields (EMF). Based upon peer-reviewed, published research, we have “serious concerns” regarding the ubiquitous and increasing exposure to EMF generated by electric and wireless devices. These include—but are not limited to—radiofrequency radiation (RFR) emitting devices, such as cellular and cordless phones and their base stations, Wi-Fi, broadcast antennas, smart meters, and baby monitors as well as electric devices and infra-structures used in the delivery of electricity that generate extremely-low frequency electromagnetic field (ELF

EMF). Numerous recent scientific publications have shown that EMF affects living organisms at levels well below most international and national guidelines. Effects include increased cancer risk, cellular stress, increase in harmful free radicals, genetic damages, structural and functional changes of the reproductive system, learning and memory deficits, neurological disorders, and negative impacts on general well-being in humans. Damage goes well beyond the human race, as there is growing evidence of harmful effects to both plant and animal life.

These findings justify our appeal to the United Nations (UN) and, all member States in the world, to encourage the World Health Organization (WHO) to exert strong leadership in fostering the development of more protective EMF guidelines, encouraging precautionary measures, and educating the public about health risks, **particularly risk to children and fetal development**. By not taking action, the WHO is failing to fulfill its role as the preeminent international public health agency.

**Collectively we also request that:**

1. children and pregnant women be protected;
2. guidelines and regulatory standards be strengthened;
3. manufacturers be encouraged to develop safer technology;
4. utilities responsible for the generation, transmission, distribution, and monitoring of electricity maintain adequate power quality and ensure proper electrical wiring to minimize harmful ground current;
5. the public be fully informed about the potential health risks from electromagnetic energy and taught harm reduction strategies;
6. medical professionals be educated about the biological effects of electromagnetic energy and be provided training on treatment of patients with electromagnetic sensitivity;
7. governments fund training and research on electromagnetic fields and health that is independent of industry and mandate industry cooperation with researchers;
8. media disclose experts' financial relationships with industry when citing their opinions regarding health and safety aspects of EMF-emitting technologies; and
9. white-zones (radiation-free areas) be established.

After the scientists' appeal was written in 2015 additional research has convincingly confirmed serious health risks from RF-EMF fields from wireless technology. [The world's largest study](#) (\$25M) from the National Toxicology Program (NTP), **shows statistically significant increase in the incidence of brain and heart cancer in animals exposed to EMF below the ICNIRP** (International Commission on Non-Ionizing Radiation Protection) guidelines followed by most countries. This study presents some of the strongest evidence to date that such exposure is associated with the formation of rare cancers in at least two cell types in the brains and hearts of rats. Christopher Portier, a retired head of the NTP, said that this is not just an associated finding—but that the relationship between radiation exposure and cancer is clear. “I would call it a causative study, absolutely. They controlled everything in the study. It's [the cancer] because of the exposure.” These results support results in human epidemiological studies on RF radiation and brain tumour risk. A large number of peer-reviewed scientific reports demonstrate harm to human health from EMFs. The International Agency for Research on Cancer (IARC), the cancer agency of the World Health Organization (WHO), in 2011 concluded that EMFs of

frequencies 30 KHz – 300 GHz are possibly carcinogenic to humans (Group 2B). However, new studies like the NTP study mentioned above and several epidemiological investigations including the latest studies on mobile phone use and brain cancer risks confirm that RF-EMF radiation is carcinogenic to humans. The EUROPA EM-EMF Guideline 2016 states that "there is strong evidence that long-term exposure to certain EMFs is a risk factor for diseases such as certain cancers, Alzheimer's disease, and maleinfertility...Common EHS (electromagnetic hypersensitivity) symptoms include headaches, concentration difficulties, sleep problems, depression, lack of energy, fatigue, and flu-like symptoms."

On September 13, 2017 there was [an appeal](#) from 180 scientists and doctors from 35 countries recommending a moratorium on the rollout of 5G until potential hazards for human health and the environment have been fully investigated by scientists independent from industry. RF-EMF has been proven to be harmful for humans and the environment.

In a [Study](#) out of Germany called **The Influence of Being Physically Near to a Cell Phone Transmission Mast** they evaluated case histories of patients between 1994 and 2004. The result of the study shows that the proportion of newly developing cancer cases was significantly higher among those patients who had lived during the past ten years at a distance of up to 400 metres from the cellular transmitter site, which has been in operation since 1993, compared to those patients living further away, and that the patients fell ill on average 8 years earlier. In the years 1999-2004, ie after five years' operation of the transmitting installation, the **relative risk of getting cancer had trebled for the residents of the area in the proximity** of the installation compared to the inhabitants outside the area.

From a peer reviewed article in the [American Journal of Men's Health](#) published in December 2018. Two hundred and seventeen volunteer male students aged between 13 and 16 registered from two different intermediate schools: 124 students were from School 1 and 93 students were from School 2. The mobile phone base stations (MPBSTs) were located within 200 m from the school buildings. In School 1, RF-EMF was 2.010  $\mu\text{W}/\text{cm}^2$  with a frequency of 925 MHz and in School 2, RF-EMF was 10.021  $\mu\text{W}/\text{cm}^2$  with a frequency of 925 MHz. Students were exposed to EMFR for 6 hr a day, 5 days a week for a total period of 2 years. The Narda Safety Test Solution device SRM-3006 was used to measure RF-EMF in both schools, and cognitive functions tasks were measured by the Cambridge Neuropsychological Test Automated Battery (CANTAB). Significant impairment in Motor Screening Task (MOT;  $p = .03$ ) and Spatial Working Memory (SWM) task ( $p = .04$ ) was identified among the group of students who were exposed to high RF-EMF produced by MPBSTs. High exposure to RF-EMF produced by MPBSTs was associated with delayed fine and gross motor skills, spatial working memory, and attention in school adolescents compared to students who were exposed to low RF-EMF.

More than 50 expert scientists and doctors have made a [declaration to Health Canada](#) calling for protection for the public from radiofrequency radiation exposure. They say they have serious concerns regarding Health Canada's Safety Code 6 Guideline. Their Declaration states:

Many Canadians and people worldwide share a growing perception of risk due to the proliferation of RF sources encountered in daily life and reports of adverse health effects. Since the start of the Wireless Age in the 1990s, health studies show more people reacting adversely to electromagnetic fields and electromagnetic radiation. Epidemiological studies show links between RF exposure and cancers, neurological disorders, hormonal changes, symptoms of electrical hypersensitivity (EHS) and more. Laboratory studies show increased cancers, abnormal sperm, learning and memory deficits, and heart irregularities. People who suffer from functional impairment due to RF exposure and those who prefer to live, work and raise their children in a low EMF environment are increasingly unable to find such places. Worker productivity, even the capacity to make a living, is diminishing. Some people are being forced into an isolated, nomadic lifestyle, with few resources to sustain them. The medical community in North America is largely unaware of the biological responses to RF exposure and does not know how to treat those who have become ill. The typical methods to alleviate symptoms and promote healing are not working due, in part, to ubiquitous exposure. Our urgent call for public health protection. The public's health and the health of the environment are threatened by ever-evolving RF emitting technologies, without due consideration for what the potential cumulative impacts on biological systems are likely to be in the future. We urgently call upon Health Canada . . . i) to intervene in what we view as an emerging public health crisis; ii) to establish guidelines based on the best available scientific data including studies on cancer and DNA damage, stress response, cognitive and neurological disorders, impaired reproduction, developmental effects, learning and behavioural problems among children and youth, and the broad range of symptoms classified as EHS; and iii) To advise Canadians to limit their exposure and especially the exposure of children.

Here is a quote from Barbara Sattler of the Alliance of Nurses for Healthy Environments in [opposition to SB 649](#) which would have made it easier to install microwave radiation antennas, "I am a Professor of Public Health at the University of San Francisco and a Board Member of the national Alliance of Nurses for Healthy Environments. I am very concerned about moving forward with expanding the use of small-scale wireless technologies at the same time that there is mounting evidence of the potential for health risks from the associated radio frequency energy and radiation, **particularly to children**. The Alliance of Nurses for Healthy Environments ascribes to the **precautionary principle** as it applies to human health. We firmly believe that early warnings in the scientific literature should be heeded and that our policy development should reflect the synthesis of the best and latest scientific evidence. At this point in time, we oppose SB 649 and believe that we need an exhaustive review of the science before we allow significant expansion of small cell wireless facilities, such as those to facilitate 5G networks. The results of the literature review should inform our policies. We must be sure that vulnerable populations such as pregnant women and young children will not be unduly harmed from their proximity to unnecessary radio frequency energy. It is important that we continue to examine what constitutes a safe distance and how we can continue to pivot when more information becomes available. We are concerned that the passage of SB 649 will entrench us in a policy for which we have insufficient assurances and which, if passed, will require the burden of effort to reverse.

From [USLegal.com](http://USLegal.com), the precautionary principle states that when an activity causes some threat or harm to the public or the environment, general precautionary measures should be taken. When a scientific investigation proves that there is a possible risk in doing some activity, then this principle should be applied.

Teacher unions and PTAs internationally are taking action on issues of wireless technology cases. June 25, 2018, [San Francisco educators](#) closed the school year with the passage of a safer technology resolution that aims to provide simple steps to reduce exposure to radio frequency wireless energy for children, adolescents and educators in San Francisco schools. Sarah Aminoff, a San Francisco educator who presented the resolution to the Executive Board of United Educators of San Francisco states, “published and peer-reviewed research has found cell phones and Wi-Fi can impact the brain”. The Cleveland Clinic recommends reducing exposure due to their research that found impacts to the reproductive system. “This is not just about educators, it is also about our students whose physiology is still developing”.

On November 15, 2017 [the Hillsmere PTA requested that the Board](#) reconsider its November 1, 2017 decision and rescind its approval of the proposed easement for placement and maintenance of a mini-cell at Hillsmere. The letter referenced the EMF Scientists, Environmental Health Trust, Physicians for Safe Technology and the Maryland State Children’s Environmental Health and Protection Advisory Councils expert recommendations to reduce radiofrequency radiation exposure to children and pregnant women.

Excerpts of the Letter:

“The installment of a mini-cell on a pole adjacent to Hillsmere poses significant health dangers to both students and staff at Hillsmere. While some argue that radiation emitted from a mini-cell, or any type of cell tower, is not a health danger, data from independently, nonpartisan sponsored studies, indicate the opposite. Scientists and health care professionals are increasingly expressing concerns regarding both the overall roll-out of the 5G network, and the presence of mini-cells and cell towers near schools specifically. According to findings by the Environmental Health Trust, radiation from mini-cells is not small. Wireless antennas emit microwaves — non-ionizing radiofrequency radiation — essentially functioning as cell towers — and that radiation is expected to typically travel from 10 meters up to several hundred meters.”

There is new [proposed legislation](#) from Oregon (Senate Bill 283) that has passed both houses of the legislature and awaits the governor’s signature which directs the Department of Education to prepare and make available a statement that discloses potential health risks of wireless network technology and requires public and private schools to distribute statement to employees, students and parents or guardians of students. Requires department to adopt by rule guidelines for including in school curricula, assemblies, open houses, meetings between parents and teachers and related settings information concerning hazards of exposure to microwave radiation and how to use wireless devices more safely to reduce risk. **Requires department and Oregon Health Authority to conduct review of peer-reviewed, independently funded studies of effects of exposure to microwave radiation in schools and similar environments**, particularly exposure that results from use of wireless network

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technologies, to develop recommendations to schools in this state for practices and alternative technologies that would eliminate students' exposure to harmful microwave radiation and report results of review and recommendations to interim committee of Legislative Assembly related to education not later than September 15, 2020. **Declares emergency, effective on passage. They are declaring an emergency.**

The precautionary principle needs to be applied here. I will tell you for certain, that if you put a cell tower at 0 Euclid Avenue, I will not bring my child to that park, and we will probably move out of the neighborhood.

Sincerely,  
Justin Lombardelli

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# Application for Verizon Wireless Facility

0 Euclid Avenue - Ebmud Berryman Reservoir

The Coverage Question:  
Why a Tower is **not needed**

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## Does Verizon need improved coverage?

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Verizon's application statement related to **need**:

As shown on the coverage maps included with this application, **Verizon coverage in the immediate vicinity of the proposed facility is poor**. By building the proposed facility Verizon will dramatically improve coverage in the area, particularly inside of homes and other buildings. This will enable Verizon subscribers to more easily make contact with the world around them, including emergency services, such as law enforcement, fire departments, ambulances, etc.

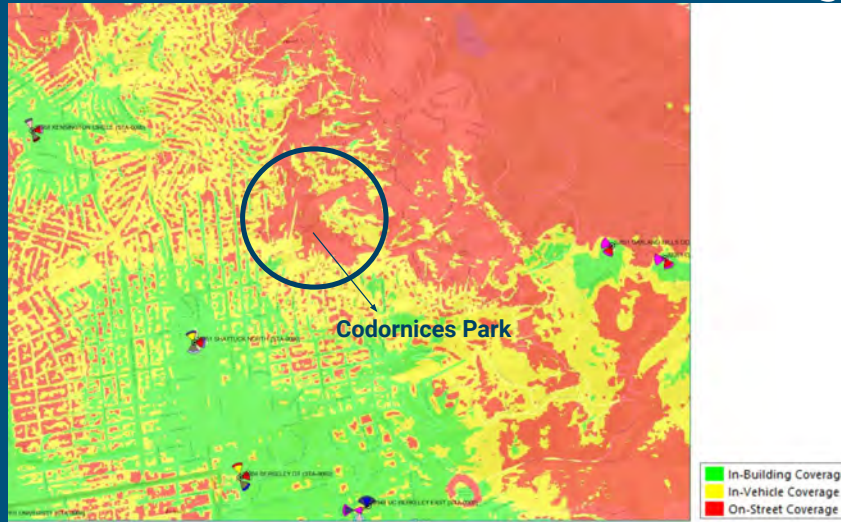


SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

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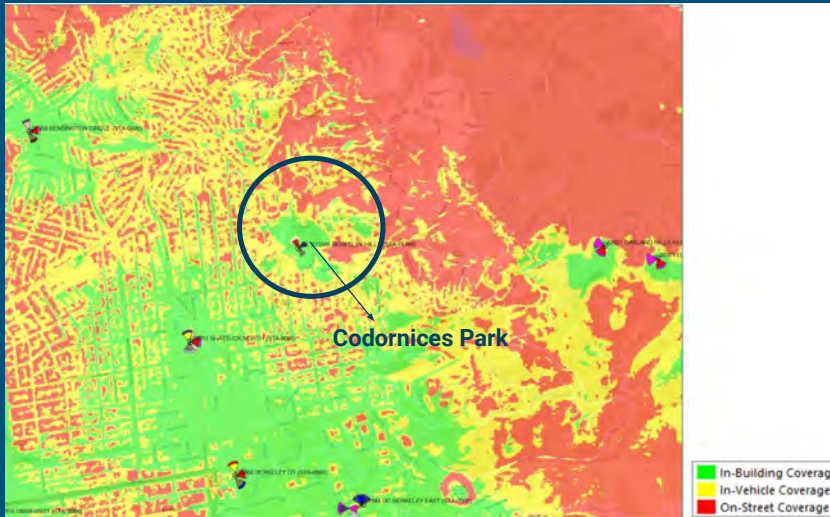
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## What is the evidence that coverage is poor?



- Simulated model from Verizon's permit application
- Reflects poor coverage in the area
- How is this simulation performed?

And here is the coverage with the tower



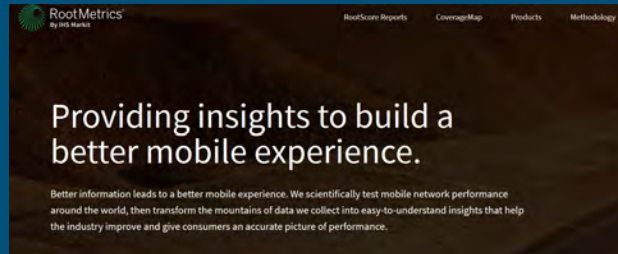
- Seems like an improvement in coverage

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## RootMetrics is independent and unbiased



RootMetrics  
By Erik Markel

RootScore Reports CoverageMap Products Methodology

### Providing insights to build a better mobile experience.

Better information leads to a better mobile experience. We scientifically test mobile network performance around the world, then transform the mountains of data we collect into easy-to-understand insights that help the industry improve and give consumers an accurate picture of performance.

### The standard for mobile performance measurement.

We're independent in our testing, unbiased with our results, and cited by the industry, press, and consumers alike. With nation-to-neighborhood reporting, a dedicated analytics department to verify all results, and end-to-end insights that stretch beyond the network itself, our unique approach has changed the game.

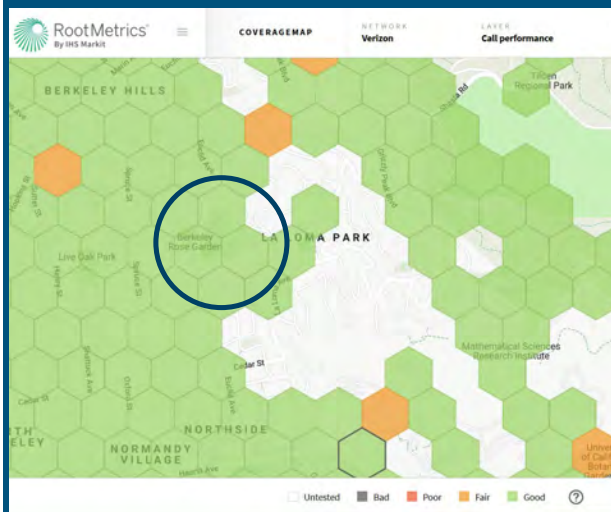
- RootMetrics is an **independent mobile analytics firm**
- Offers **scientific insights** into how users experience networks under real-world conditions
- Use off-the-shelf smartphones to test for calls, texts and data services, day and night
- Nation to neighborhood reporting with a dedicated analytics department to verify results
- Cited by **industry**, press and consumers

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## RootMetrics coverage map shows **good** coverage



- Coverage is **Good** all around
- White is **Untested**
- **No Bad or poor areas** at all anywhere on the map
- Only a few fair areas anywhere close by
- Scientifically **tested** mobile performance

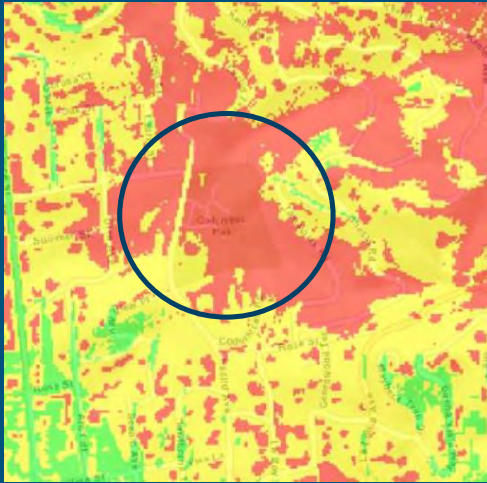
SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

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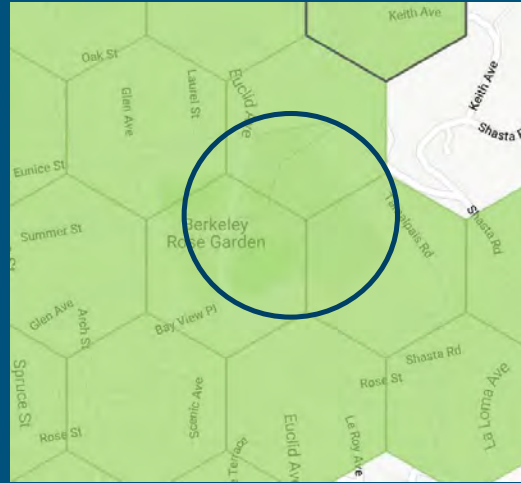
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## Direct coverage compare - **doesn't compute**

Coverage in the **Red**

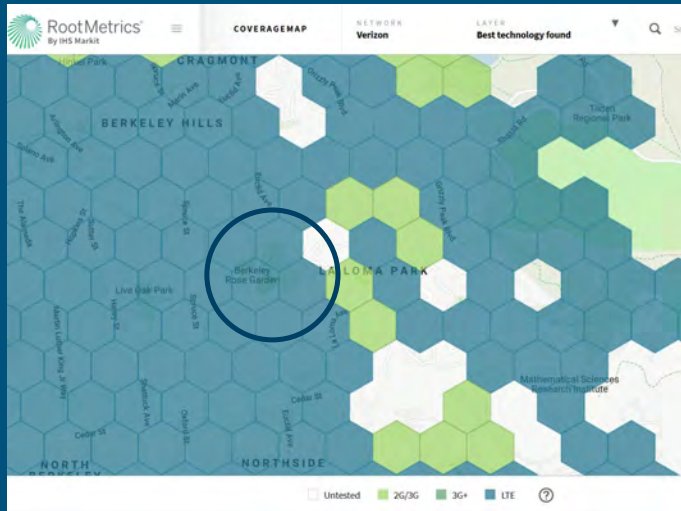


Coverage in the **Green**



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## The best technology is already in the area



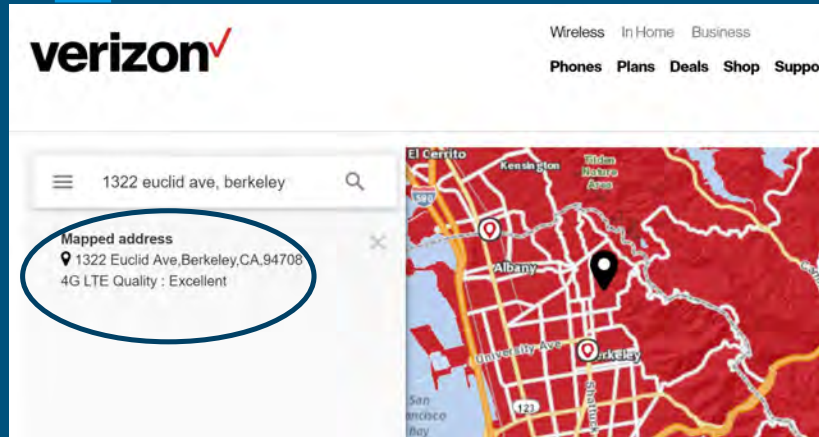
- Best Technology is already available
- LTE (4G) is nearly everywhere

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## Verizon's interactive map shows **excellent** coverage



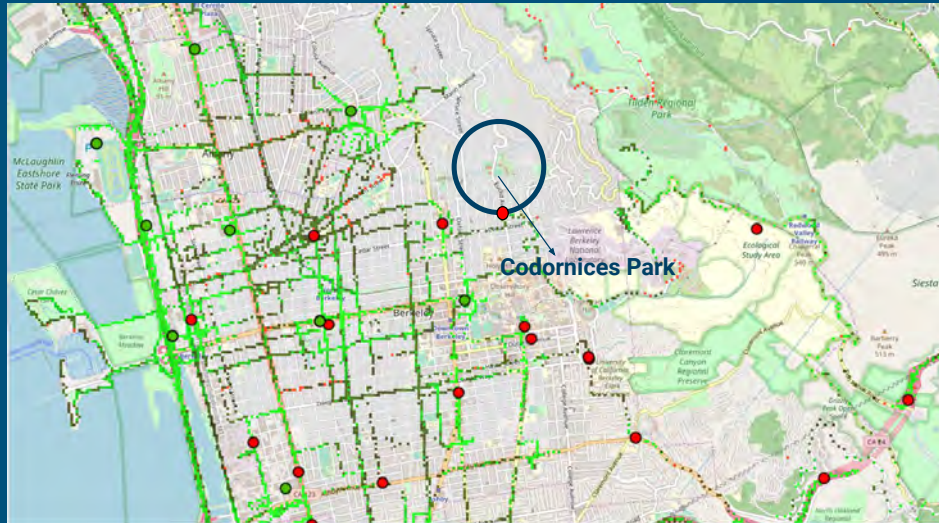
- 4G LTE quality is **excellent**
- Right across the street from 0 Euclid

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We have plenty of Verizon cell towers in the area already



25 cell locations



## 18 existing cell locations within 1.5 miles

### Verizon

1. 1540 Shattuck; .547 miles
2. 1804 Euclid Ave; .58 mile  
(recently approved)
3. 2015 Shattuck; .91 mile  
(pending approv)
4. 2002 Acton; 1.58 mile

### Sprint

1. 1600 Shattuck; .599 miles

### AT&T

1. 1625 Shattuck; .61 miles
2. 1632 University; 1.34 mile
3. Hearst & Arch; .69 mile
4. 2116 Bancroft; 1.19 mile

### MetroPCS

1. 1936 University; 1.06 miles
2. 2150 Shattuck; 1.05 mile
3. Hearst & Arch; .69 mile
4. 2116 Bancroft; 1.19 mile

### T-Mobile

1. 2095 Rose; .47 miles
2. 2054 University; .96 mile
3. 1725 University; 1.22 mile
4. 1810 Euclid; .58 mile
5. 1330 Cedar; 1.47 mile
6. 2116 Bancroft; 1.19 mile

More than  
enough towers

## Summary

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1. Rootmetrics and Verizon's own online coverage maps **both indicate good or even excellent** coverage and call performance
2. Verizon's RF model included in their application **does not reflect** real world conditions at the proposed site and **has not been verified** by an independent third party consultant
3. The applicant's claim that "coverage in the immediate vicinity of the proposed facility is poor" **is not supported**
4. There are many existing towers very close to the proposed location and the applicant should have to prove why they can't co-locate on one of these existing towers before they can justify a new one, a point which should be substantiated by an independent consultant

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Opposition of Cell Tower

-----Original Message-----

From: Sarah Collins [mailto:sarahlou5000@gmail.com]  
Sent: Tuesday, June 25, 2019 8:13 PM  
To: Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
Subject: Opposition of Cell Tower

To Whom it Concerns:

Please do not allow the proposed tower to be built at the Berryman Reservoir/Codornices Park above the Rose Garden. One of the reasons I left San Francisco and moved to this neighborhood in Berkeley was for what it had to offer. A sanctuary that feels healthy and safe. I walk to the garden and park on a nearly daily basis. I bring my family and infant niece. I come to relax and walk my dog. This is so disheartening to think of the very reasons I moved to this area being pulled out from underneath me.

I am an ICU nurse and I see people die of cancer and suffer from diseases of all kinds. People who are just trying to live a decent life. People whose lives are cut short. People who don't get to live out their life with those they love.

Isn't there a better solution? A better place for the towers to go? Somewhere away from where children and families go to spend time and live? Somewhere less populated?

I beg you to please look for alternate solutions.

Thank you.

Sarah Collins  
New Homeowner  
1188 Spruce Street  
Berkeley, CA 94707

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Permit#ZP2018-0236

**From:** Lee Bevis [mailto:leebee123@msn.com]  
**Sent:** Tuesday, June 25, 2019 5:38 PM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** Permit#ZP2018-0236

To whom it may concern:

I would like to voice my opposition to erecting a cell tower on the border of Berryman Reservoir/Codornices Park.

This is a very popular park for children of all ages, and my main concern is the radiation emissions from such a tower which might affect these children.

Sincerely,  
Lee Bevis  
1349 Arch Street  
Berkeley, CA 94708  
[leebee123@msn.com](mailto:leebee123@msn.com)

**Nawfal, Loyal**

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**Subject:** FW: Please, no cell phone tower in the park

**From:** Sarah Watson [mailto:spiveywatson@gmail.com]

**Sent:** Sunday, June 23, 2019 10:54 AM

**To:** Nawfal, Loyal <LNawfal@cityofberkeley.info>

**Subject:** Please, no cell phone tower in the park

Dear city officials:

A cell phone tower near a park where children play and adults go for and quiet relaxation would defeat the ideas of safety and health that the park implies. It is one of my favorite places to be, but will be no longer if I am exposed to radiation. Please deny Verizon or any company the right to place a cell phone tower near a public recreation area.

Sarah Watson

**Nawfal, Layal**

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**Subject:** FW: Weighing in on proposed cell towers

**From:** Shawn Drost [mailto:sdrost@gmail.com]

**Sent:** Friday, June 21, 2019 3:55 PM

**To:** Nawfal, Layal <LNawfal@cityofberkeley.info>; PWWorks <PWWorks@cityofberkeley.info>; Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>

**Subject:** Weighing in on proposed cell towers

Hi all,

My wife and I are homeowners at 1278 Campus Dr. She has lived in Berkeley her whole adult life and I'm new here after 8 years in SF. We live near by the planned cell towers in Barryman Reservoir / Codornices park as well as some others that I see under discussion on Next Door.

I am FOR cell towers in general. I am also FOR these specific towers. I am FOR any tower that your council is endorsing. Here are my reasons:

1. The people of Berkeley have overwhelmingly voted with their actions. We are all FOR cell towers. This debate is about where to put them. I hope you will disregard the vocal minorities saying "who needs cell service" or "who needs 5g".
2. It is my understanding that these towers are deemed safe after serious studies by relevant professionals. In fact I am under the impression that it is illegal to block their placement for health related reasons, because our duly elected representatives and their staff have decided these health questions are settled science. If all that is true I hope you will stick to the mandate. If you are like the public servants I know you will be looking for a way to make this work for everyone and I respect that, but I just want to add my voice as a representative of the silent majority.
3. I get that nobody likes an eyesore. But obviously there are smart people that have worked to minimize the outcry and maximize the upside. I respect that work and ask you not to bend to loud voices saying that this is the wrong backyard for the towers. Figure out the best place for them and be done with it, and if it's in Glendale La Loma park next time (my back yard) you won't hear me complaining. Put a homeless shelter here please.
4. I need some more bars y'all not to make light of something that many people are threatening to move about. But the simple fact needs to be said. We all use and live this infrastructure for everything including keeping in touch with our legislators. I am literally having trouble sending this right now (not making it up, I know it's hard to believe).

I think that's all I have to say. Thanks for reading!

-Shawn Drost

**Jacob, Melinda**

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Proposed Verizon Antenna Use Permit

**From:** Marvin Snow [mailto:marvin.snow@gmail.com]

**Sent:** Thursday, June 27, 2019 1:26 PM

**To:** All Council <council@cityofberkeley.info>; Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>

**Subject:** Proposed Verizon Antenna Use Permit

Honorable Mayor, Council Members, and Zoning Adjustment Board Appointees

Tonight's ZAB agenda includes the consideration of a Use Permit to Construct a 50 foot monopole with an array of six 4G antennas and support equipments on the East Bay Municipal Utility District property commonly know as the Berryman Reservoir immediately adjacent to Codornices Park.

I suggest the ZAB postpone any decision on this matter until the following issues are resolved:

- Others have commented extensively on the various potential fire, earthquake, and/or health issues surrounding this proposed project. Most comments have been focused on the applicant, Verizon Wireless. I would like to point out that East Bay Utility District (EBUD) should in fact be the applicant as EBMUD proposes to lease a portion of their public lands to a commercial enterprise, Verizon Wireless, presumably in return, for some land-lease revenue. Verizon Wireless, posing as the Use Permit applicant, is totally unrelated to the mission of the public agency EBMUD.
- If one thing is clear about the proposal, it is that the 50-foot monopole antenna will not be an asset to the surrounding community. Verizon Wireless appears to be aware of this as they have proposed various disguises in an attempt at visual mitigation. None of the proposals appears to be effective; however, given the sensitive location of site immediately adjacent of Codornices Park, the Rose Steps, and the Berkeley Rose Garden. EBMUD has used this land for a reservoir for nearly a century. They now propose to use it as an antenna farm.
- Some property owners in the surrounding area have estimated the adverse impact at 20% of current market value. This would roughly be estimated to total in the millions of dollars in property value losses across multiple property owners. This decrease in value will, of course, also have a negative impact on the City of Berkeley's future real estate tax revenue as well.
- The City may wish to advise EBMUD of the situation and request that their unfortunate choice of land lease plans be cancelled. It's interesting to note that the United States Supreme Court only last week strengthen significantly property owner rights with regard to government "takings" of this sort. Neighboring property owners should be aware of their ability to take this issue immediately to Federal Court. I say this simply as a concerned citizen. I invite and will be happy to hear the city's legal opinions.

Sincerely,

Marvin Snow  
2 Northgate Ave.  
Berkeley, CA 94708

Kelley Hart  
1350 Scenic Avenue  
Berkeley, CA 94708

Zoning Adjustments Board  
Land Use Planning Division  
1947 Center Street  
Berkeley, CA 94704  
RE: Proposed Cell Tower at 0 Euclid Avenue, #ZP2018-0236

Dear Members of the Board,

Since my first letter to you, I learned that this is not the beginning of your process but the end of your process. With a close review of Verizon's application materials available on the City's website, I believe there are several deficiencies in this application, and for that reason it should be rejected.

1. It doesn't meet the City of Berkeley's zoning requirements.

#### **23B.32.040 Findings for Issuance and Denial and Conditions**

According to this provision, **the Zoning Adjustments Board (ZAB) cannot approve this use permit unless you find that "it will not be detrimental ...or injurious to property and improvements of the adjacent properties, the surrounding area or neighborhood or to the general welfare of the City."**

Property values for those who live in this block of Euclid opposite the reservoir, along Codornices Road, and the top of Bay View will most certainly decline. Instead of having an unobstructed view of beautiful trees and open space, they will have a partially obstructed view of an industrial cell tower. While coming/going along Euclid Avenue and Bay View passersby do not currently see the reservoir or any of its related infrastructure. That is all hidden within the reservoir. This cell tower, initially 50 feet but allowed to increase to 70 feet,<sup>1</sup> will be visible from outside the reservoir berm. Painting the pole and the many antenna green (staff recommendation) or making it look like a fake tree is not going to fool anyone into thinking it's pretty. Every time someone is driving to/from one of those houses they will now see a cell tower.

There is ample evidence that homes near parks have increased property values, usually between 8% and 20%.<sup>2</sup> There is no evidence that homes near cell towers have increased property values. To the

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<sup>1</sup> This is due to FCC rules combined with Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012. <https://ehtrust.org/cell-phone-towers-lower-property-values-documentation-research/>. See also a good summary here: <https://www.nh.gov/osi/planning/resources/wireless/deploying.htm> The New Hampshire state government provides a succinct explanation that under federal rules, local governments must allow collocation (after a tower has been approved), and collocation can entail adding 10% or 20 feet, whichever is greater, to the top of an existing tower.

<sup>2</sup> [http://depts.washington.edu/hhwb/Thm\\_Economics.html](http://depts.washington.edu/hhwb/Thm_Economics.html) Language from that article: "Homes that are adjacent to naturalistic parks and open spaces are valued at 8-20% higher than comparable properties, with the positive price effect declining to near zero about ½ mile away." There are four footnotes for this citation, quoting articles written between 1988 and 2001. The most recent article was written by John Crompton, whom I met and heard





these existing towers before they can justify a new one. They should also be required to demonstrate that they are already using 4G hardware on all of their installations. It appears that at least one installation may be using only 2G or 3G hardware. If they would like to provide better service to the area, they should upgrade that hardware.

According to 23C.17.040 Minimum Application Requirements, **the applicant must provide “A statement of the telecommunications objectives sought for the proposed location,... whether it is the least intrusive means of doing so, and whether there are any alternative site that would have fewer aesthetic impacts while providing comparable service.”** The applicant did not meet this requirement. Its entire analysis was that because this is on a “utility” (EBMUD reservoir), then it is aesthetically consistent. This is what Verizon says: “The proposed location is most appropriate as it will allow Verizon to achieve its coverage objectives, while causing the least impact on the neighborhood. This EBMUD parcel is already used for utility purposes. Adding a Verizon tower to this location will allow Verizon to cover the neighborhood without changing its character.” The issue is that because of the topography and a lot of work to hide the utility, it doesn’t currently look like a utility. Adding a tower there will actually change the aesthetic because it will not be hidden by the topography.

2. Verizon’s proposal is not consistent with the General Plan.

**Policy LU-7 of the General Plan is: “Neighborhood Quality of Life, Action A: Require that new development be consistent with zoning standards and compatible with the scale, historic character, and surrounding uses in the area.”**

The section above explains how Verizon’s proposal is inconsistent with zoning standards. Additionally, it is inconsistent with the other elements, as follows:

- Scale: (though explicitly exempted) it will exceed the height limits that everyone else in this residential neighborhood has complied with. And once it is approved, they can add 20 feet to it without any further review/oversight.<sup>5</sup> It will stand out like a sore thumb in this clearing created for the reservoir.
- Surrounding uses: there is a carefully concealed reservoir tank (not visible from any of the public streets or parks), two beautiful and historic parks, and residences. Even the telephone pole utilities along Euclid have been undergrounded. So this will be the only visible utility along Euclid.
- Historic character: the Rose Garden, across the street from the cell tower, reflects Berkeley’s historic arts and crafts style.

In sum, it is a residential neighborhood and the surrounding uses are two beautiful public parks and many single-family homes. The historic character is Berkeley’s arts and craft architectural style. The homes along Codornices Road are some of the most charming in all of Berkeley. There is also historic Maybeck home ½ block from the proposed tower. Painting the cell tower green will not make it consistent with the neighborhood or the parks. There are no industrial or commercial uses in this neighborhood for which a 50-70 foot cell tower would be compatible. There is a discreet water tank

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<sup>5</sup> See footnote 1.

hidden within a drinking water reservoir that EBMUD has surrounded with expensive natural landscaping (albeit still young since the reservoir was dramatically remodeled not long ago.) From the roads, the sidewalks, and the parks, there are no views of commercial or industrial uses. This would be the first. The application includes a viewshed analysis that understates the aesthetic damage that will be done by this project.

Not long ago, residents and EBMUD spent a lot of time and resources to make sure that the water tank was carefully concealed from residents and park visitors, and that the land around the reservoir is consistent with the residential neighborhood and Arts and Crafts feel of the Berkeley Rose Garden, a critical landmark for the City of Berkeley. I disagree with the staff report that painting the pole of the cell phone green will make it blend in with the neighborhood. It is terribly out of scale with the neighborhood. And I'm not the only one who feels that way. In just a few hours over a few days, Lucinda Reinold (my neighbor) and I found 70 other people who agreed with us. Many of them were visitors from other parts of California, and visitors from other parts of the country. See attached petition (paper version for those I encountered in the park or on nearby streets).

3. It's reckless to allow EBMUD to lease a portion of the reservoir's storage capacity for a cell tower.

EBMUD and the applicant are proposing to put the tower in the basin itself. This is ridiculous. This land is intended for use as a drinking water reservoir. I spoke briefly with the Public Relations specialist for EBMUD (Charlotte?) and she reassured me that the current tank (enclosed within the basin) is more than adequate to meet current and projected need, which is estimated through 2040. But EBMUD shouldn't be compromising drinking water storage capacity for our future population, which is exactly what they are doing with this project. I worry that we will be locked into a financial situation with Verizon and be unable to utilize the capacity of this reservoir when it is needed, which is just a matter of time. Also, to keep the cell tower project from blocking one of the only two access points to this un-staffed reservoir, they're proposing to put it on a very steep slope of the basin itself, about 5-7 feet from the access path. In an earthquake or a fire it could fall into the reservoir basin or across the path, making it impossible for EBMUD personnel or other emergency personnel to service or operate the distribution of water from the reservoir when it is most needed. This is the sole source of drinking water for residents beneath the reservoir (it must get into this reservoir before it is then piped downstream to users).

4. There is an error in the peer review RF report, as it grossly mischaracterizes the controlled zone for radiation. Once the cell tower is fully built out, people visiting Codornices Park and close-in neighbors may be exposed to radiation exceeding FCC's limits.

Please see Attachment 3 for an exact copy of page 10 of the peer review RF report. The RF peer review report, authored by Telecom Law Firm (TLF), calculates that the radiation will project out about 100 feet

in three directions (at about 40 feet off the ground). Verizon calls this the “controlled access zone” because it is where radiation emissions are strongest.<sup>6</sup>

TLF says that the length of each arrow is roughly 100 feet. If that were true, the controlled zone for the “Sector C” arrow would not extend beyond the row of trees lining Codornices Park. This is a major miscalculation. If the Sector C arrow was 100 feet long, that would mean that the asphalt path is approximately 25 feet wide. The width of the asphalt path (including the curb) at that point on the map is exactly 11 feet. The diagram dramatically under-estimates the distance of the controlled zone. It actually extends about 70 -75 feet into the park, well into the grassy field used frequently for youth and adults for sports as well as dog walkers.

The report says this: “While the site as currently proposed is categorically excluded under the FCC Guidelines, TLF [Telecom Law Firm] notes that another round of independent RF analysis will be needed to determine whether a future carrier’s antennas will comply under the FCC’s Rules [referring to radio frequency limits] since the future carrier’s antennas will be installed lower than 10 meters AGL. For this reason, we recommend that the City direct Verizon to strike all ‘future’ elements from the Plans and the Application so that any future changes to this site only occur upon a subsequent planning application and then-current RF emissions analysis of the then-existing Verizon emissions and the proposed emissions of the future carrier(s).”<sup>7</sup> That’s a nice gesture, but the reality is whether they strike future plans from this application or not, Verizon will have the ability (because of FCC’s rules – see Footnote 1 above) to allow other carriers to colocate without any further input/restrictions from the City of Berkeley. According to the FCC, colocation can occur above the current pole or beneath the antenna planned for this pole. The only restriction is that if they go up, then they’re limited to 10% of the height of the pole or 20 feet whichever is greater. So, when Verizon decides to welcome co-location, we all lose – either they co-locate down the pole and people on the grassy field in Codornices Park may receive radiation exceeding FCC’s limits, or they go up, and the aesthetics are even worse and the uphill neighbors may get exposed to radiation exceeding FCC’s limits.

##### 5. Failed Notice Requirements

As a procedural matter, I believe that notice to the community did not meet the City’s requirements. Though residents within the legally defined zone may have received notice two weeks before the meeting that an application submitted, they were not able to view the full application at that time. I spoke with the staff contact for this project, Loyal Nawful, mid-afternoon on Tuesday, the 18<sup>th</sup>, and she confirmed that the City had not yet posted all of the application documents on the City’s self-service website. Indeed, I could not find them there even on the evening of 6/26. There were still only two

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<sup>6</sup> From RF peer review memo p. 9: “Based on the transmitted frequencies and power levels disclosed in the H&E RF Report, Verizon’s emissions will create a worst case “controlled access zone” that extends to a maximum of approximately 100 feet horizontally from the face of the antennas at approximately the same height as the antennas emissions center.”

<sup>7</sup> Page 11 of Telecom Law Firm PC’s memo “Wireless Radio Frequency Planning Memorandum” dated 5/24/19 in the application file, here: [https://www.cityofberkeley.info/uploadedFiles/Planning\\_and\\_Development/Level\\_3\\_-\\_ZAB/2019-05-24\\_RF%20Peer%20Review%20Memo\\_0%20Euclid.pdf](https://www.cityofberkeley.info/uploadedFiles/Planning_and_Development/Level_3_-_ZAB/2019-05-24_RF%20Peer%20Review%20Memo_0%20Euclid.pdf)


documents posted – the initial application and a welcome letter. However, I received full notice, on 6/21/19, when Layal emailed me a specific link to a place on the city's website where all of the applicant's file was located. There were 9 other documents that were part of the application. In sum, there was inadequate notice because for the 14-day notice period, only 2 of the 11 documents comprising the application were available to the public on its self-service website established for exactly this type of communication.

Sincerely,

Kelley Hart

Attachment 1: RootMetrics real data (slide 1) and Comparison of Verizon’s computer “simulation” to real data (slide 2)


### RootMetrics coverage map shows **good** coverage




- Coverage is **Good** all around
- White is **Untested**
- **No Bad or poor areas** at all anywhere on the map
- Only a few fair areas anywhere close by
- Scientifically **tested** mobile performance

### Direct coverage compare - **doesn't compute**

Coverage in the **Red**



Coverage in the **Green**



Attachment 2:

**18 existing cell locations within 1.5 miles**

<p><b>Verizon</b></p> <ol style="list-style-type: none"> <li>1. 1540 Shattuck; .547 miles</li> <li>2. 1804 Euclid Ave; .58 mile (recently approved)</li> <li>3. 2015 Shattuck; .91 mile (pending approv)</li> <li>4. 2002 Acton; 1.58 mile</li> </ol>	<p><b>AT&amp;T</b></p> <ol style="list-style-type: none"> <li>1. 1625 Shattuck; .61 miles</li> <li>2. 1632 University; 1.34 mile</li> <li>3. Hearst &amp; Arch; .69 mile</li> <li>4. 2116 Bancroft; 1.19 mile</li> </ol>	<p><b>T-Mobile</b></p> <ol style="list-style-type: none"> <li>1. 2095 Rose; .47 miles</li> <li>2. 2054 University; .96 mile</li> <li>3. 1725 University; 1.22 mile</li> <li>4. 1810 Euclid; .58 mile</li> <li>5. 1330 Cedar; 1.47 mile</li> <li>6. 2116 Bancroft; 1.19 mile</li> </ol>
<p><b>Sprint</b></p> <ol style="list-style-type: none"> <li>1. 1600 Shattuck; .599 miles</li> </ol>	<p><b>MetroPCS</b></p> <ol style="list-style-type: none"> <li>1. 1936 University; 1.06 miles</li> <li>2. 2150 Shattuck; 1.05 mile</li> <li>3. Hearst &amp; Arch; .69 mile</li> <li>4. 2116 Bancroft; 1.19 mile</li> </ol>	

**More than enough towers**

Attachment 3: Duplication of page 11 of RF Peer Review Report

Rincon Consultants, Inc.

May 24, 2019

Page 10

See Figure 8 for the approximate azimuths and extents of the controlled zone.



**Figure 8:** Approximate (i) location of monopine, and (ii) azimuth orientations for all three sectors (Source: Google Maps; Annotated by Dr. Kramer).

The length of the red arrows in Figure 8 is about 100', which is the limit of the controlled zone, which is at least 41 feet above ground level at the location of the monopine.

[Balance of Page Intentionally Left Blank]





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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Permit # ZP2018-0236: Euclid Cell Phone Tower

**From:** Dawn Hawk [mailto:dawnhawk1@yahoo.com]  
**Sent:** Thursday, June 27, 2019 7:13 AM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>; Nawfal, Loyal <LNawfal@cityofberkeley.info>; City Clerk <clerk@cityofberkeley.info>  
**Cc:** Jesse Arreguin <jarreguin@gmail.com>; Kate Harrison <kateha76@gmail.com>; Sophie Hahn <sophie@sophiehahn.com>; Wengraf, Susan <SWengraf@cityofberkeley.info>  
**Subject:** Permit # ZP2018-0236: Euclid Cell Phone Tower

Dear Members of the ZAB,

I am writing in strong opposition to Verizon's application to construct a 50' cell tower with 7 antennas and adjacent structures on/in the Berryman Reservoir. There are many detailed letters of opposition already in the record. I wish to add my concerns:

Money for nothing – I am confused about whether it is the City of Berkeley that will benefit in receiving Verizon \$\$, or EBMUD which is the lessor of the property from the City. Whether our City or our public utility receives payments, this is money for nothing. This tower will just be the beginning – the camel's nose under the tent. The commercial and competitive race to provide faster, more connected cell phones is on. Already our power poles are drooping from all the newly hung fiber wiring. Let's not sell out our historical treasures and neighborhoods for a corporation's profit. From the staff report: "ENVIRONMENTAL REVIEW STATUS: Categorically exempt pursuant to Sections 15301 and 15303 of the CEQA Guidelines ("Existing Facilities and New Construction or Conversion of Small Structures")." This is specious to argue that as there is already a water reservoir on the property, therefore one can add a cell phone tower. But it is clear that the City will not deny any future conversion of the 50' tower into whatever Verizon wants to do next.

Fire risk – this 50-foot cell tower requires a generator filled with 132 gallons of fuel - on the Hayward fault. After a massive effort to educate Berkeley homeowners about fire safety and creating defensible space around their homes, why would the City turn around and allow this potential fire hazard to be installed in a high-risk fire and earthquake zone?

Noise – This cell tower will transform Codornices from a tranquil park into a commercial switching station. The noise from the generator and air conditioner will surely be amplified by being adjacent to the reservoir's steel tank, in the bowl of the reservoir and the Codornices watershed.

Safety/Radiation – there are health risks to nearby neighbors as well as health impacts to 1,000s of children and families and summer camp youth from around the Bay who use this park space year round.

Aesthetics – there will be a permanent adverse impact on the character and beauty of Codornices Park, the Rose Garden, the adjacent historic Rose Walk and the recently renovated Berryman Reservoir. These parks are Berkeley's treasures and some of the big draws for visitors to the City as well as its residents. These public spaces should not be destroyed by this hideous eyesore.

Across the country health experts, fire personnel, and entire communities are fighting back against this onslaught of cell towers within residential neighborhoods. As the letters in opposition show, Berkeley residents are also fighting back. Please consider these concerns carefully, stand up for Berkeley's core values, and deny this application.

Thank you,

Dawn Hawk  
180 Tamalpais Road

SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE  
ZAB 06-27-19  
Page 12 of 124

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**From:** Zoning Adjustments Board (ZAB)  
**To:** Michael Burt  
**Subject:** RE: Corrected Supplement to my June 24, 2019 Opposition to Permit # ZP2018-0236

**From:** Michael Burt [mailto:mb@michaelburtlaw.com]  
**Sent:** Thursday, June 27, 2019 12:31 AM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** RE: Corrected Supplement to my June 24, 2019 Opposition to Permit # ZP2018-0236

I just sent a supplement to my June 24, 2019 letter in opposition. Please consider the attached instead as the prior letter contained a typo.

Michael Burt  
Law Office of Michael Burt  
1000 Brannan Street, Suite 400  
San Francisco, California 94103-4888  
415-522-1508 phone  
415-522-1506 fax  
415-250-4541 cell  
[mb@michaelburtlaw.com](mailto:mb@michaelburtlaw.com)

**Law Office of Michael Burt**  
 1000 Brannan Street, Suite 400  
 San Francisco, California 94103  
 415-522-1508 phone; 415-522-1506 fax  
 mb@michaelburtlaw.com

June 24, 2019

Berkeley Zoning Adjustment Board  
 1231 Addison Street  
 Berkeley, CA 94708  
 Sent via email to: zab@cityofberkeley.info

*Re: Supplement to June 24, 2019 Opposition to Permit # ZP2018-0236 (Berryman Reservoir/Codornices Park cell tower)*

Dear Board Members:

This letter is a supplement to my June 24, 2019 letter opposing the above-referenced application by Verizon for a permit to build a 50 foot fake pine tree cell tower at the Berryman Reservoir. My further research into this issue has revealed additional evidence in support of the arguments I have already made, as well as two additional reasons why this project should not be allowed to go forth.

First, Verizon's application to build the Berryman cell tower stands in stark contrast to other applications Verizon has made in California to build these fake cell towers. As just one example, I attach an application filed by Verizon in El Dorado County. The differences between the two applications are striking and illustrate that Verizon apparently believes that the citizens of Berkeley are entitled to less protection than the citizens of El Dorado County:

Verizon El Dorado Permit Application	Verizon Berryman Permit Application
<p><b>Allegation of necessity:</b> "This tower will help alleviate an <i>area</i> of poor coverage and inadequate capacity within this service area"</p>	<p><b>Allegation of necessity:</b> "Verizon's objective is to <i>improve</i> coverage in the Berkeley Hills area, especially along Euclid Avenue north of EBMUD's Berryman Reservoir.... Verizon's coverage objectives for this project are to <i>improve</i> service in the area described above, and to <i>offload traffic from other nearby sites</i> that are often at or exceeding capacity.... Verizon coverage <i>in the immediate vicinity</i> of the proposed facility is poor."</p>

<p><b>Consideration of alternatives:</b>  “ALTERNATIVE LOCATIONS  REVIEWED BUT NOT SELECTED:  1310 Large Oak Drive  Landlord not interested in pursuing a lease with Verizon  4590 Stoney Ridge Rd.  Rejected by Verizon, inadequate coverage capability.  4540 Stoney Ridge Rd.  Rejected by Verizon, in adequate coverage capability.  4541 Burnt Oak Dr.  Rejected by Verizon, in adequate coverage capability.  1310 Large Oak Dr  Landlord not interested in pursuing a lease with Verizon.  4101 Birds Eye Court  Landlord not interested in pursuing a lease with Verizon.”</p>	<p><b>Consideration of alternatives:</b> None.  <i>See, Vertex Dev., LLC v. Manatee Cty., 761 F. Supp. 2d 1348, 1362 (M.D. Fla. 2011)</i>(attached to June 24, 2019 letter)(“Aside from aesthetics and property values, the [permit board]also took issue with the lack of evidence to demonstrate why other sites, which are already developed as nonresidential, were not considered. Finding of Fact No. 6 states ‘The public hearing record does not sufficiently document the analysis by the applicant to demonstrate why other sites which are already developed as nonresidential, commercial and industrial uses and which are currently visually impacted by tall structures could not be utilized for the telecommunication tower siting in this instance...”)</p>
<p><b>Location:</b> “The proposed site is well screened from public view by several large mature trees and has been selected due to its location on a hill top, adequately positioned to provide coverage in the intended service area.”</p>	<p><b>Location:</b> “This EBMUD parcel is shaped like a bowl, with the lowest elevations surrounded by an earthen berm. Because <i>ground equipment</i> would be installed at the bottom of this bowl, it would not be visible from the street.” There is no allegation that the tower itself will be “well screened from public view” or that the chosen site is “on a hill top, adequately positioned to provide coverage in the intended service area.”</p>

<p><b>Sharing with other carriers:</b> “This tower has been designed to accommodate future collocation by other carriers....The proposed site has been designed to allow for future co-location opportunities with other carriers. The land lease provides sufficient space for additional service providers and the tower and its foundation are designed for future equipment. This tower will eliminate the need for multiple towers within the same general vicinity as it has been designed to accommodate carriers should they come forward. Additional ground space would need to be leased from the landlord.”</p>	<p><b>Sharing with other carriers:</b> None.</p>
<p><b>Assurance of compliance with county standards:</b> “This project has been carefully designed to comply with all applicable standards.”</p>	<p><b>Assurance of compliance with county standards:</b> None</p>
<p><b>Assurance of compliance with FCC standards:</b> “This project will not interfere with any TV, radio, telephone, satellite, or any other signals. Any interference would be against the Federal Law and would be a violation Verizon Wireless' FCC License. In addition, this project will conform to all FCC standards.”</p>	<p><b>Assurance of compliance with FCC standards:</b> None</p>
<p><b>Assurance of limited use of diesel equipment:</b> “The standby generator will be operated for approximately 15 minutes per week for maintenance purposes, and during power outages and disasters.”</p>	<p><b>Assurance of limited use of diesel equipment:</b> None</p>
<p><b>Hazardous Materials Business Plan:</b> “A Hazardous Material Business Plan will also be submitted upon project completion, and stored on site after construction.”</p>	<p><b>Hazardous Materials Business Plan:</b> None</p>

<p><b>Services provided:</b> “This unmanned facility will provide service to area travelers, residents and businesses 24 hours a day, 7 days a week. This site will also serve as a back up to the existing landline service in the area and will provide improved mobile communications.”</p>	<p><b>Services provided:</b> “Verizon is proposing to provide LTE service from this facility. Please note that LTE is a ]data only’ service, for which the term ‘minutes of use’ has no meaning....While voice telephone service will ultimately be provided from the proposed site, that service is just any other service that uses data, like e-mail or web browsing, or video.”</p>
<p><b>Construction schedule:</b> “The construction of the facility will be in compliance with all local rules and regulations. The typical duration is two months. The crew size will range from two to ten individuals.”</p>	<p><b>Construction schedule:</b> None</p>
<p><b>Assurance of Maintenance:</b> “A technician will visit the site approximately twice a month to check the facility and perform any necessary maintenance.”</p>	<p><b>Assurance of Maintenance:</b> None</p>

Again, the differences in these two permit applications are dramatic and underscore the fatal flaws in Verizon’s Berryman application.

I also call to your attention the important fact that The Tax Relief and Job Creation Act of 2012 would allow Verizon to increase the size of the tower. No one (not even the county) will be able to stop them from further degrading our neighborhood if this ugly and intrusive tower is approved. See, Federal Communications Commission, *Wireless Telecommunications Bureau Offers Guidance on Interpretation of Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012* (attached).

For all of the reasons stated above and in my June 24, 2019 letter I again urge you deny Verizon’s application.

Sincerely,

/s/ Michael N. Burt  
 Michael N. Burt  
 Attorney at Law

**Law Office of Michael Burt**  
 1000 Brannan Street, Suite 400  
 San Francisco, California 94103  
 415-522-1508 phone; 415-522-1506 fax  
 mb@michaelburtlaw.com

June 24, 2019

Berkeley Zoning Adjustment Board  
 1231 Addison Street  
 Berkeley, CA 94708  
 Sent via email to: zab@cityofberkeley.info

*Re: Supplement to June 24, 2019 Opposition to Permit # ZP2018-0236 (Berryman Reservoir/Codornices Park cell tower)*

Dear Board Members:

This letter is a supplement to my June 24, 2019 letter opposing the above-referenced application by Verizon for a permit to build a 50 foot fake pine tree cell tower at the Berryman Reservoir. My further research into this issue has revealed additional evidence in support of the arguments I have already made, as well as two additional reasons why this project should not be allowed to go forth.

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<p><b>Allegation of necessity:</b> "This tower will help alleviate an <i>area</i> of poor coverage and inadequate capacity within this service area"</p>	<p><b>Allegation of necessity:</b> "Verizon's objective is to <i>improve</i> coverage in the Berkeley Hills area, especially along Euclid Avenue north of EBMUD's Berryman Reservoir.... Verizon's coverage objectives for this project are to <i>improve</i> service in the area described above, and to <i>offload traffic from other nearby sites</i> that are often at or exceeding capacity.... Verizon coverage <i>in the immediate vicinity</i> of the proposed facility is poor."</p>



<p><b>Consideration of alternatives:</b>          “ALTERNATIVE LOCATIONS          REVIEWED BUT NOT SELECTED:          1310 Large Oak Drive          Landlord not interested in pursuing a lease with Verizon          4590 Stoney Ridge Rd.          Rejected by Verizon, inadequate coverage capability.          4540 Stoney Ridge Rd.          Rejected by Verizon, in adequate coverage capability.          4541 Burnt Oak Dr.          Rejected by Verizon, in adequate coverage capability.          1310 Large Oak Dr          Landlord not interested in pursuing a lease with Verizon.          4101 Birds Eye Court          Landlord not interested in pursuing a lease with Verizon.”</p>	<p><b>Consideration of alternatives:</b> None.  <i>See, Vertex Dev., LLC v. Manatee Cty., 761 F. Supp. 2d 1348, 1362 (M.D. Fla. 2011)</i>(attached to June 24, 2019 letter)(“Aside from aesthetics and property values, the [permit board]also took issue with the lack of evidence to demonstrate why other sites, which are already developed as nonresidential, were not considered. Finding of Fact No. 6 states ‘The public hearing record does not sufficiently document the analysis by the applicant to demonstrate why other sites which are already developed as nonresidential, commercial and industrial uses and which are currently visually impacted by tall structures could not be utilized for the telecommunication tower siting in this instance...”)</p>
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<p><b>Assurance of compliance with county standards:</b> “This project has been carefully designed to comply with all applicable standards.”</p>	<p><b>Assurance of compliance with county standards:</b> None</p>
<p><b>Assurance of compliance with FCC standards:</b> “This project will not interfere with any TV, radio, telephone, satellite, or any other signals. Any interference would be against the Federal Law and would be a violation Verizon Wireless' FCC License. In addition, this project will conform to all FCC standards.”</p>	<p><b>Assurance of compliance with FCC standards:</b> None</p>
<p><b>Assurance of limited use of diesel equipment:</b> “The standby generator will be operated for approximately 15 minutes per week for maintenance purposes, and during power outages and disasters.”</p>	<p><b>Assurance of limited use of diesel equipment:</b> None</p>
<p><b>Hazardous Materials Business Plan:</b> “A Hazardous Material Business Plan will also be submitted upon project completion, and stored on site after construction.”</p>	<p><b>Hazardous Materials Business Plan:</b> None</p>

<p><b>Services provided:</b> “This unmanned facility will provide service to area travelers, residents and businesses 24 hours a day, 7 days a week. This site will also serve as a back up to the existing landline service in the area and will provide improved mobile communications.”</p>	<p><b>Services provided:</b> “Verizon is proposing to provide LTE service from this facility. Please note that LTE is a ]data only’ service, for which the term ‘minutes of use’ has no meaning....While voice telephone service will ultimately be provided from the proposed site, that service is just any other service that uses data, like e-mail or web browsing, or video.”</p>
<p><b>Construction schedule:</b> “The construction of the facility will be in compliance with all local rules and regulations. The typical duration is two months. The crew size will range from two to ten individuals.”</p>	<p><b>Construction schedule:</b> None</p>
<p><b>Assurance of Maintenance:</b> “A technician will visit the site approximately twice a month to check the facility and perform any necessary maintenance.”</p>	<p><b>Assurance of Maintenance:</b> None</p>

Again, the differences in these two permit applications are dramatic and underscore the fatal flaws in Verizon’s Berryman application.

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For all of the reasons stated above and in my June 24, 2019 letter I again urge you deny Verizon’s application.

Sincerely,

/s/ Michael N. Burt  
Michael N. Burt  
Attorney at Law

FILE # 515-0004

**EL DORADO COUNTY PLANNING DEPARTMENT**

**APPLICATION FOR Special Use Permit**

ASSESSOR'S PARCEL NO.(s) 105-140-06-10

PROJECT NAME/REQUEST: (Describe proposed use) Arrowbee Lake Verizon Wireless Cellular Tower Project

IF SUBDIVISION/PARCEL MAP: Create \_\_\_\_\_ lots, ranging in size from \_\_\_\_\_ to \_\_\_\_\_ acre(s) / SF

IF ZONE CHANGE: From \_\_\_\_\_ to \_\_\_\_\_ IF GENERAL PLAN AMENDMENT: From \_\_\_\_\_ to \_\_\_\_\_

IF TIME EXTENSION, REVISION, CORRECTION: Original approval date \_\_\_\_\_ Expiration date \_\_\_\_\_

APPLICANT/AGENT Verizon Wireless c/o Epic Wireless c/o Mark Lobaugh

Mailing Address 8700 Auburn Folsom Road

Phone ( 916 ) 203-4067 FAX ( 916 ) 781-5927

PROPERTY OWNER Eric and Elizabeth Johanson

Mailing Address 4131 Birdseye View Ln, Placerville, CA 95667

Phone ( 530 ) 626-6874 FAX ( \_\_\_\_\_ )

LIST ADDITIONAL PROPERTY OWNERS ON SEPARATE SHEET IF APPLICABLE

ENGINEER/ARCHITECT Borges Architectural Group, INC

Mailing Address 1478 Stone Point Dr, Roseville, CA 95661

Phone ( 916 ) 782-7200 FAX ( \_\_\_\_\_ )

LOCATION: The property is located on the North side of Birdseye View Ln  
N/E/W/S street or road

2.18 feet/miles North West of the intersection with Arrowbee Dr and Lotus Rd  
N/E/W/S major street or road

in the Placerville area. PROPERTY SIZE 5.02 acres  
acreage / square footage

X Eric W. Johanson Date 2-11-15  
signature of property owner or authorized agent

**FOR OFFICE USE ONLY**

Date 2/12/15 Fee \$ 4,900.00 Receipt # 29238 Rec'd by MOVANT Census \_\_\_\_\_

Zoning RF-10 GPD LDN Supervisor Dist 4 Sec/Twn/Rng 231 11N/9E

ACTION BY:  PLANNING COMMISSION  
 ZONING ADMINISTRATOR  
 PLANNING DIRECTOR

ACTION BY BOARD OF SUPERVISORS

Hearing Date \_\_\_\_\_

Hearing Date \_\_\_\_\_

Approved  Denied (findings and/or conditions attached)

Approved  Denied (findings and/or conditions attached)

APPEAL:  Approved  Denied

Executive Secretary \_\_\_\_\_

Executive Secretary \_\_\_\_\_

Revised 07/02)

**S 15-0004**

RECEIVED  
FEB 12 PM 4:45  
PLANNING DEPARTMENT

**PROJECT SUPPORT STATEMENT**

**DEVELOPMENT APPLICATION FOR VERIZON SITE "ARROWBEE LAKE"**

15 FEB 12 PM 4:4

**APN 105-140-06-10**

RECEIVED  
PLANNING DEPARTMENT

**4131 Birdseye View Ln, PLACERVILLE, CA. 95667**

**INTRODUCTION**

Verizon Wireless is seeking to improve communications service in the El Dorado County area near Lotus Road. Verizon would like to increase coverage and capacity in the area by constructing a new telecommunications facility in to improve service for both current and potential customers. Additionally, this network development will increase public safety within these areas and bring wireless service to areas that currently have poor capacity service.

This tower will help alleviate an area of poor coverage and inadequate capacity within this service area, which causes reoccurring lost calls and ineffective service. This site will relieve inadequate capacity in the area due to high cell phone and broadband usage in the greater Arrowbee Lake area. The proposed location of the tower is set within an unutilized portion of this parcel will be designed to comply with all County of El Dorado's wireless design guidelines. The proposed Verizon Communications facility will be located within a 33'x20' fenced compound including: (1) proposed 16' x 11'6" equipment shelter, a 30kw Diesel generator and a 90' stealth monopine, and is designed to blend in with the existing trees nearby. This tower will accommodate (3) sectors with (2) antennas per sector, (3) remote radio units (RRU's) per sector. This tower has been designed to accommodate future collocation by other carriers. This site is constructed atop a raised steel platform in order to minimize the amount of earth work needed to achieve a flat site. As such, very little soil will need to be graded for this site. This site lies in an area that is well screened from public views by se Rejected by Verizon, in adequate coverage capability. The proposed site is well screened from public view by several large mature trees and has been selected due to its location on a hill top, adequately positioned to provide coverage in the intended service area.

The parcel selected for this communication is owned by Eric and Elizabeth Johanson and totals 5.02 acres. The location for this project is situated approximately 1.77miles from Lotus Road.

This unmanned facility will provide service to area travelers, residents and businesses 24 hours a day, 7 days a week. This site will also serve as a back up to the existing landline service in the area and will provide improved mobile communications, essential to modern day commerce and recreation.

**ALTERNATIVE LOCATIONS REVIEWED BUT NOT SELECTED**

- 1310 Large Oak Drive Landlord not interested in pursuing a lease with Verizon
- 4590 Stoney Ridge Rd. Rejected by Verizon, in adequate coverage capability.
- 4540 Stoney Ridge Rd. Rejected by Verizon, in adequate coverage capability.
- 4541 Burnt Oak Dr. Rejected by Verizon, in adequate coverage capability.
- 1310 Large Oak Dr. Landlord not interested in pursuing a lease with Verizon
- 4101 Birds Eye Court Landlord not interested in pursuing a lease with Verizon

**SAFETY BENEFITS OF IMPROVED WIRELESS SERVICE**

Mobile phone use has become an extremely important system for public safety. Along roads and highways without public call boxes, mobile phones are often the only means for emergency roadside communication. Motorists with disabled vehicles (or worse) can use their phone to call in and request appropriate assistance. With good cellular coverage along important roadways, emergency response is

just a phone call away. Furthermore, as a back up system to traditional landline phone service, mobile phones have proven to be extremely important during natural disasters and other catastrophes.

Verizon has taken the responsibility for back-up service very seriously. As such, Verizon has incurred increased expense to install a standby diesel generator at this facility to insure quality communication for the surrounding community regardless of any disaster or catastrophe.

#### **CONVENIENCE BENEFITS OF IMPROVED WIRELESS SERVICE**

Modern day life has become increasingly dependent on instant communications. Whether it is a parent calling their child, spouse calling a spouse, or general contractor ordering materials to the jobsite, wireless phone service is no longer just a convenience. It has become a way of life and a way of business.

#### **COMPLIANCE WITH COUNTY DEVELOPMENT STANDARDS**

This project has been carefully designed to comply with all applicable standards.

#### **COMPLIANCE WITH FCC STANDARDS**

This project will not interfere with any TV, radio, telephone, satellite, or any other signals. Any interference would be against the Federal Law and would be a violation Verizon Wireless' FCC License. In addition, this project will conform to all FCC standards.

#### **TECHNOLOGY AND CONSUMER SERVICES THE CARRIER WILL PROVIDE ITS CUSTOMERS**

Verizon offers its customers multiple services such as, voice calls, text messaging, mobile email, picture/video messaging, mobile web, navigation, broadband access. Wireless service enhances public safety and emergency communications in the community. In rural areas such as the subject location, cellular phone service can cover much larger geographic areas than traditional landline phone service.

#### **FUTURE COLLOCATION OPPORTUNITIES**

The proposed site has been designed to allow for future co-location opportunities with other carriers. The land lease provides sufficient space for additional service providers and the tower and its foundation are designed for future equipment. This tower will eliminate the need for multiple towers within the same general vicinity as it has been designed to accommodate carriers should they come forward. Additional ground space would need to be leased from the landlord.

#### **LIGHTING**

Unless tower lighting is required by the FAA the only lighting on the facility will be a shielded motion sensor light by the door on the equipment shelter for servicing the equipment.

#### **NOISE**

The standby generator will be operated for approximately 15 minutes per week for maintenance purposes, and during power outages and disasters.

#### **HAZARDOUS MATERIAL**

A Hazardous Material Business Plan will also be submitted upon project completion, and stored on site after construction

#### **ENVIRONMENTAL SETTING**

The site is set within a parcel that is zoned LI and is consistent with application design standards in the area and environment.

#### **MAINTENANCE AND STANDY GENERATOR TESTING**

Verizon installs a standby diesel generator and batteries at many of its cell sites. The generator and batteries serve a vital role in Verizon emergency and disaster preparedness plan. In the event of a power outage, Verizon communications equipment will first transition over to the back-up batteries. The batteries can run the site for a few hours depending upon the demand placed upon the equipment. Should the power outage extend beyond the capacity of the batteries, the back-up generator will automatically start and continue to run the site. This two state back-up plan is an extremely important component of Verizon communications sites. Back-up batteries and generators allow Verizon communications sites to continue providing valuable communications services in the event of a power outage, natural disaster or other emergency.

A standby generator will be installed at the site to ensure quality and consistent coverage in the event of a power outage or disaster. This generator will be run for approximately 15 minutes per week for maintenance purposes, and during power outages and disasters.

A technician will visit the site approximately twice a month to check the facility and perform any necessary maintenance.

#### **CONSTRUCTION SCHEDULE**

The construction of the facility will be in compliance with all local rules and regulations. The typical duration is two months. The crew size will range from two to ten individuals.

Order No.  
Escrow No. 89829JT  
Loan No.

WHEN RECORDED MAIL TO:  
ERIC W. JOHANSON  
ELISABETH A. JOHANSON  
2151 Old Oakland Road, Space 527  
San Jose, CA 95131

043916

15 FEB 12 PM 4:47

EL DORADO COUNTY, CALIF.  
RECORD REQUESTED BY:

First American Title Co.  
AUG 9 9 17 AM '88

JIMMY CARR  
COUNTY RECORDER

RECEIVED  
PLANNING DEPARTMENT

MAIL TAX STATEMENTS TO:  
SAME AS ABOVE

PODS  
FILED

DOCUMENTARY TRANSFER TAX \$ 45.65  
Computed on the consideration or value of property conveyed; OR  
Computed on the consideration or value less debts or encumbrances  
remaining at time of sale.  
First American Title Insurance Co.  
Signatures of Grantor or Agent determining tax -- Firm Name

APR: 105-140-06

GRANT DEED

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,  
BURL L. CALAHAN and DONNA G. CALAHAN, husband and wife

heraby GRANT(S) to  
ERIC W. JOHANSON and ELISABETH A. JOHANSON, husband and wife as Joint Tenants

the real property in the City of unincorporated area, State of California, described as  
County of El Dorado

A portion of the Northwest quarter of Section 23, Township 11 North, Range  
09 East, N.D.B.M., more particularly described as follows:

Parcel 2, as shown on that certain Parcel Map filed in the office of the  
County Recorder, County of El Dorado, State of California, on May 27, 1980,  
in Book 26 of Parcel Maps, at page 135.

Date: August 3, 1988

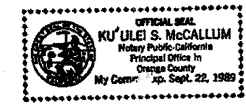
STATE OF CALIFORNIA  
COUNTY OF Orange  
On August 3, 1988

Before me, the undersigned, a Notary Public in and for said State, personally appeared Donna G. Calahan  
and Burl L. Calahan

personally known to me or proved to me on the basis of satisfactory  
evidence) to be the persons whose names are subscribed to the  
within instrument and acknowledged to me that he/she/they executed  
the same.

WITNESS my hand and official seal.  
Annita McCallum

Donna G. Calahan  
DONNA G. CALAHAN



(This area for official recording)  
BOOK 2893 PAGE 17

END DOCUMENT  
MAIL TAX STATEMENTS AS DIRECTED ABOVE

S 15-0004



FILE # \_\_\_\_\_  
DATE FILED \_\_\_\_\_

**EL DORADO COUNTY PLANNING DEPARTMENT  
ENVIRONMENTAL QUESTIONNAIRE**

15 FEB 12 PM 4:47

RECEIVED  
PLANNING DEPARTMENT

Project Title Arrowbee Lake Verizon Wireless New Build  
Lead Agency El Dorado County Planning Department  
Name of Owner Eric and Elizabeth Johanson Telephone ( 530 ) 626-6874  
Address 4131 Birdseye View Ln, Placerville, CA 95667  
Name of Applicant Verizon Wireless c/o Epic Wireless c/o Mark Lobaugh Telephone ( 916 ) 203 - 4067  
Address 8700 Auburn Folsom Road Suite 400, Granite Bay, CA 95746  
Project Location 4131 Birdseye View Ln, Placerville, CA 95667  
Assessor's Parcel Number(s) 105-140-06-10  
Acreage 5.02 Zoning LI

**Please answer all of the following questions as completely as possible. Subdivisions and other major projects will require a Technical Supplement to be filed together with this form.**

1. Type of project and description: Verizon Wireless proposes to construct a 90' tall Stealth monopine tower which will include three sectors, with two antennas per sector and 3 RRU's per sector. There will also be an Equipment Shelter and 30kVa diesel generator.
2. What is the number of units/parcels proposed? 1

**GEOLOGY AND SOILS**

3. Identify the percentage of land in the following slope categories:  
xx 0 to 10% \_\_\_\_\_ 11 to 15% \_\_\_\_\_ 16 to 20% \_\_\_\_\_ 21 to 29% \_\_\_\_\_ over 30%
4. Have you observed any building or soil settlement, landslides, rock falls or avalanches on this property or in the nearby surrounding area? No
5. Could the project affect any existing agriculture uses or result in the loss of agricultural land?  
No

**DRAINAGE AND HYDROLOGY**

6. Is the project located within the flood plain of any stream or river? No  
If so, which one? \_\_\_\_\_
7. What is the distance to the nearest body of water, river, stream or year-round drainage channel?  
0.13 miles Name of the water body? Arrowbee Lake
8. Will the project result in the direct or indirect discharge of silt or any other particles in noticeable amount into any lakes, rivers or streams? No

**S 15-0004**

Environmental Questionnaire  
Page 2

- 9. Will the project result in the physical alteration of a natural body of water or drainage way?  
If so, in what way? none
- 10. Does the project area contain any wet meadows, marshes or other perennially wet areas?  
No

**VEGETATION AND WILDLIFE**

- 11. What is the predominant vegetative cover on the site (trees, brush, grass, etc.)? Estimate percentage of each: Grass
- 12. How many trees of 6-inch diameter will be removed when this project is implemented?  
0

**FIRE PROTECTION**

- 13. In what structural fire protection district (if any) is the project located? Pilot Hill
- 14. What is the nearest emergency source of water for fire protection purposes (hydrant, pond, etc.)? 0.13 miles
- 15. What is the distance to the nearest fire station? 4.28 miles
- 16. Will the project create any dead-end roads greater than 500 feet in length? No
- 17. Will the project involve the burning of any material including brush, trees and construction materials? No

**NOISE QUALITY**

- 18. Is the project near an industrial area, freeway, major highway or airport? No  
If so, how far? \_\_\_\_\_
- 19. What types of noise would be created by the establishment of this land use, both during and after construction? Generator operates once every month for 15 mins at 36 dB at 23 ft (equivalent to normal conversation at 3 ft.

**AIR QUALITY**

- 20. Would any noticeable amounts of air pollution, such as smoke, dust or odors, be produced by this project? Minimal, AQMD form to be filed. Equipment is exempt due to low HP engine.

**WATER QUALITY**

- 21. Is the proposed water source  public or  private,  treated or  untreated?  
Name the system: N/A

Environmental Questionnaire  
Page 3

22. What is the water use (residential, agricultural, industrial or commercial)? No water use.

**AESTHETICS**

23. Will the project obstruct scenic views from existing residential areas, public lands, public bodies of water or roads? No

**ARCHAEOLOGY/HISTORY**

24. Do you know of any archaeological or historical areas within the boundaries or adjacent to the project? (e.g., Indian burial grounds, gold mines, etc.) None known

**SEWAGE**

25. What is the proposed method of sewage disposal?  septic system  sanitation district  
Name of district: NA

26. Would the project require a change in sewage disposal methods from those currently used in the vicinity? NA

**TRANSPORTATION**

27. Will the project create any traffic problems or change any existing roads, highways or existing traffic patterns? No

28. Will the project reduce or restrict access to public lands, parks or any public facilities?  
No

**GROWTH-INDUCING IMPACTS**

29. Will the project result in the introduction of activities not currently found within the community?  
No

30. Would the project serve to encourage development of presently undeveloped areas, or increases in development intensity of already developed areas (include the introduction of new or expanded public utilities, new industry, commercial facilities or recreation activities)?  
No

31. Will the project require the extension of existing public utility lines? No  
If so, identify and give distances: \_\_\_\_\_

Environmental Questionnaire  
Page 4

**GENERAL**

- 32. Does the project involve lands currently protected under the Williamson Act or an Open Space Agreement? No
- 33. Will the project involve the application, use or disposal of potentially hazardous materials, including pesticides, herbicides, other toxic substances or radioactive material? Diesel fuel for generator.
- 34. Will the proposed project result in the removal of a natural resource for commercial purposes (including rock, sand, gravel, trees, minerals or top soil)? No
- 35. Could the project create new, or aggravate existing health problems (including, but not limited to, flies, mosquitos, rodents and other disease vectors)? No
- 36. Will the project displace any community residents? No

**DISCUSS ANY YES ANSWERS TO THE PREVIOUS QUESTIONS** (attached additional sheets if necessary)

Diesel generator included, see drawings for specifications.

**MITIGATION MEASURES** (attached additional sheets if necessary)

Proposed mitigation measures for any of the above questions where there will be an adverse impact:

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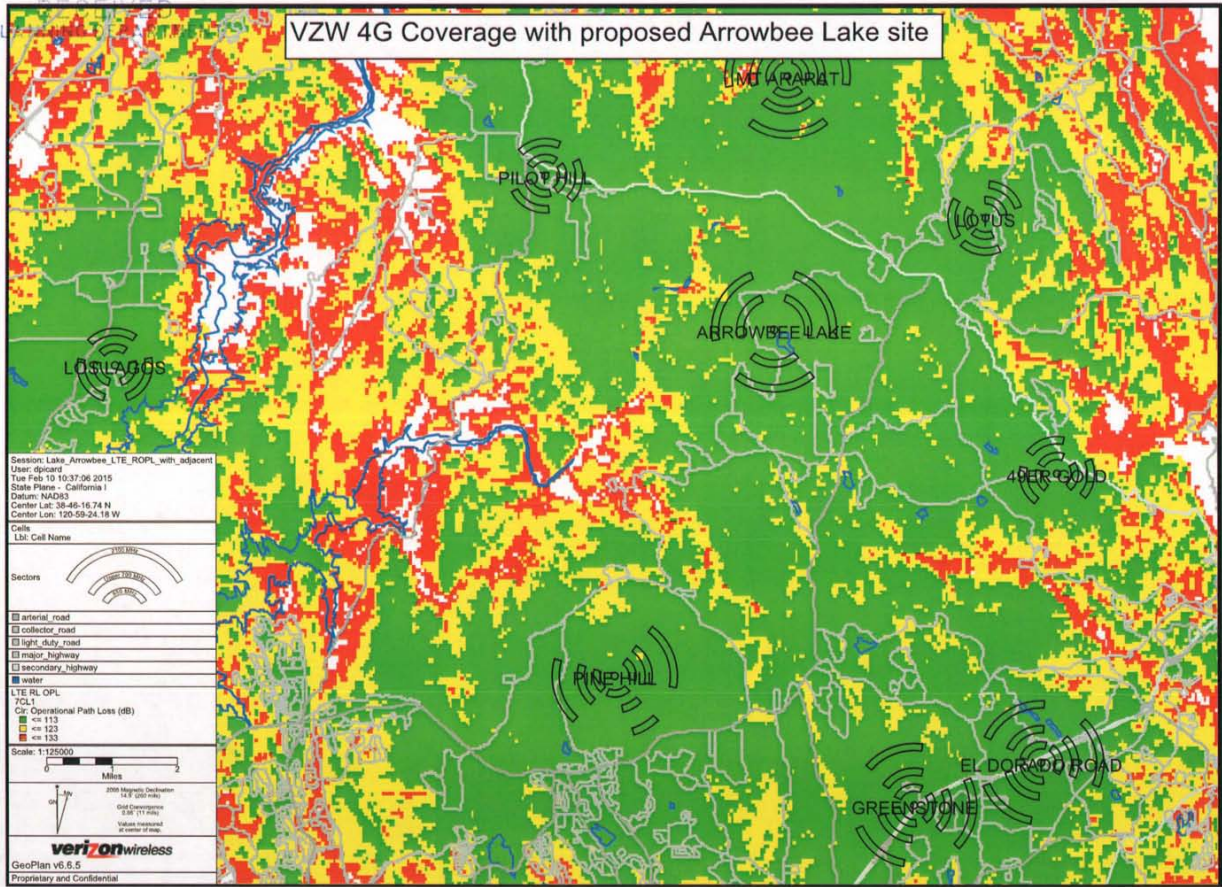


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Form completed by: \_\_\_\_\_ Date: \_\_\_\_\_ (revised 03/99)

15 FEB 12 PH 4:45

VZW 4G Coverage with proposed Arrowbee Lake site

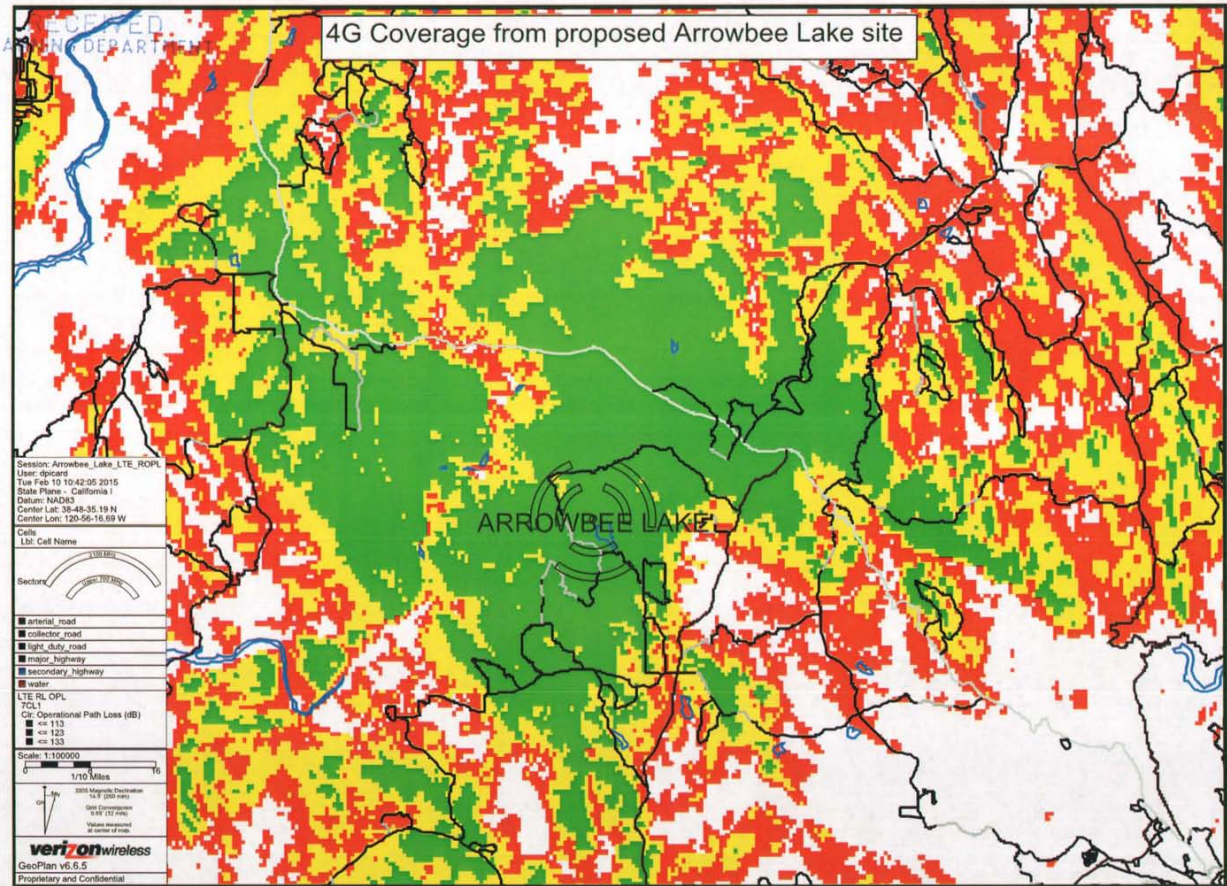


S 15-0004

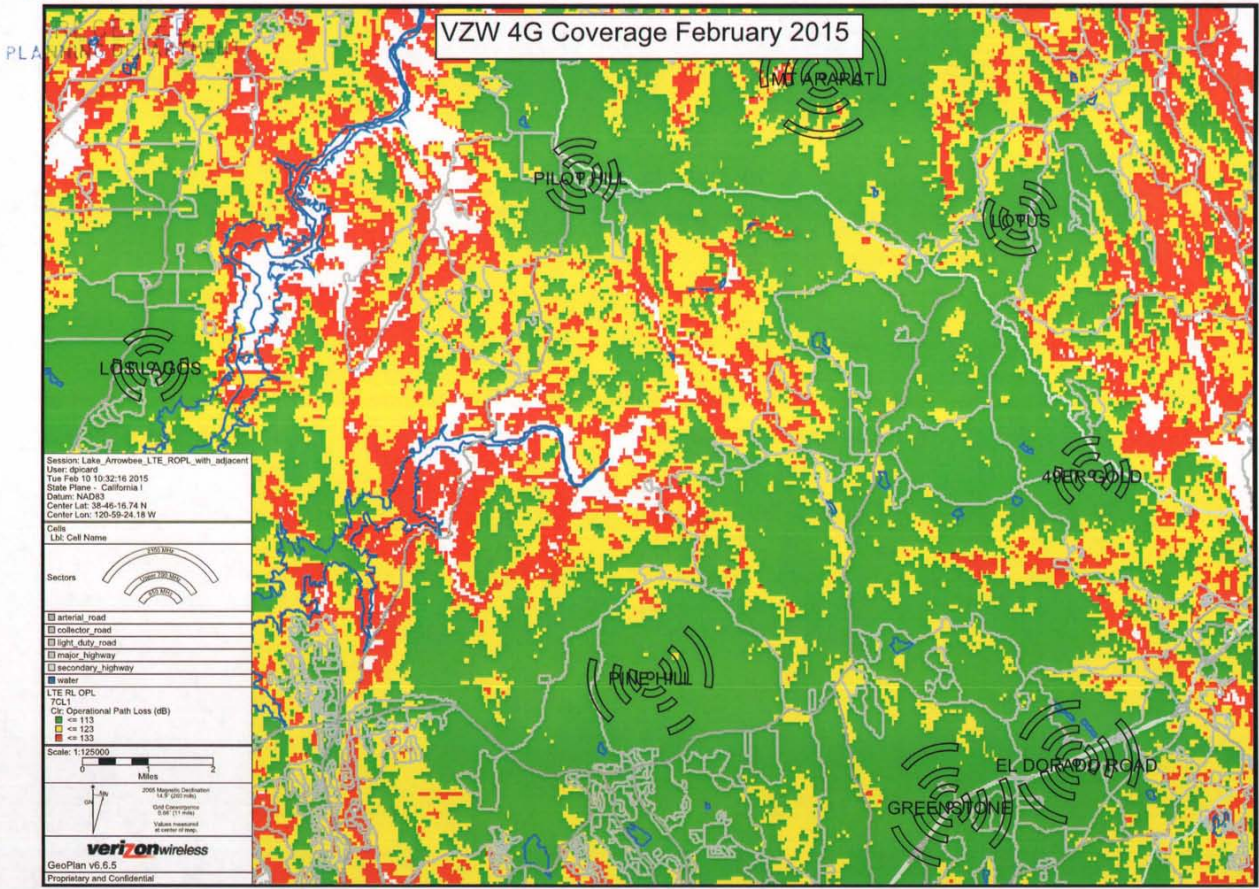
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PLANNING DEPARTMENT

4G Coverage from proposed Arrowbee Lake site



15 FEB 12 PH 4:46



Version Date: October 01, 2014



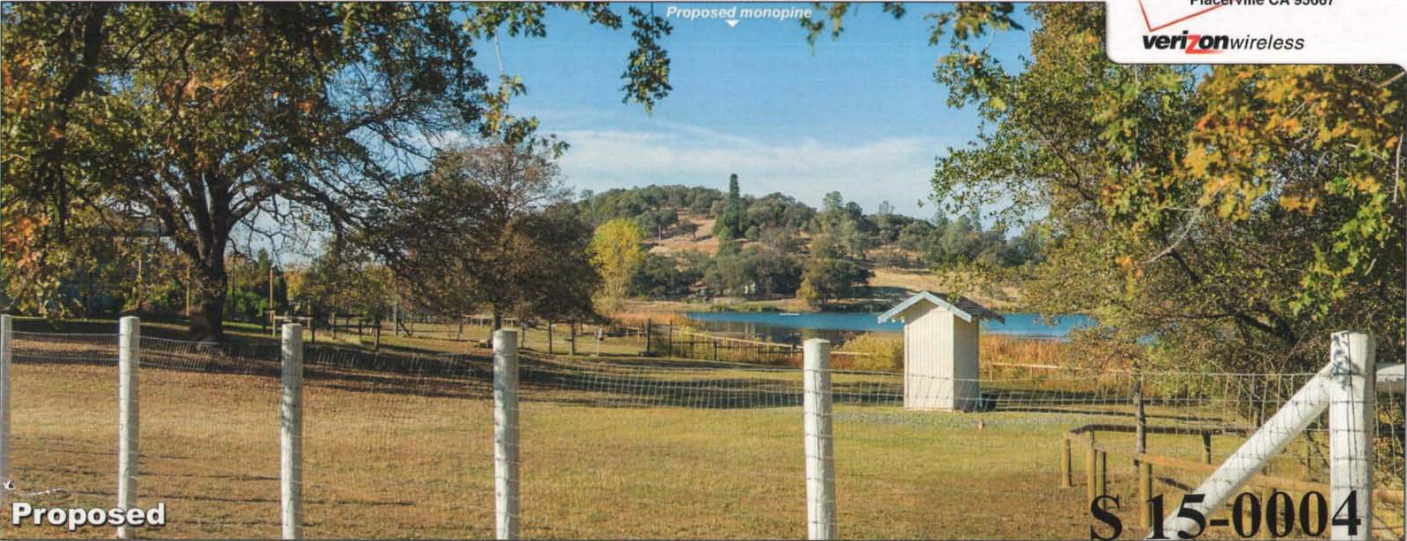
**Existing**

Photosimulation of the view looking northwest from Shoreline Drive approaching Wild Flower Lane.

**Arrowbee Lake**  
4131 Birdseye View Lane  
Placerville CA 95667



*Proposed monopine*



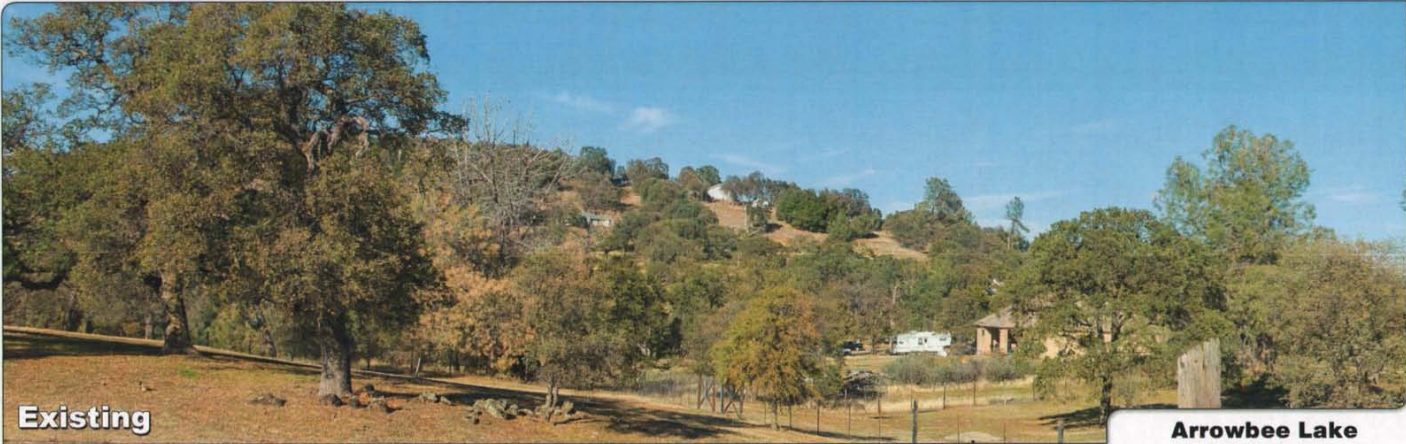
**Proposed**

**S 15-0004**

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Version Date: October 01, 2014



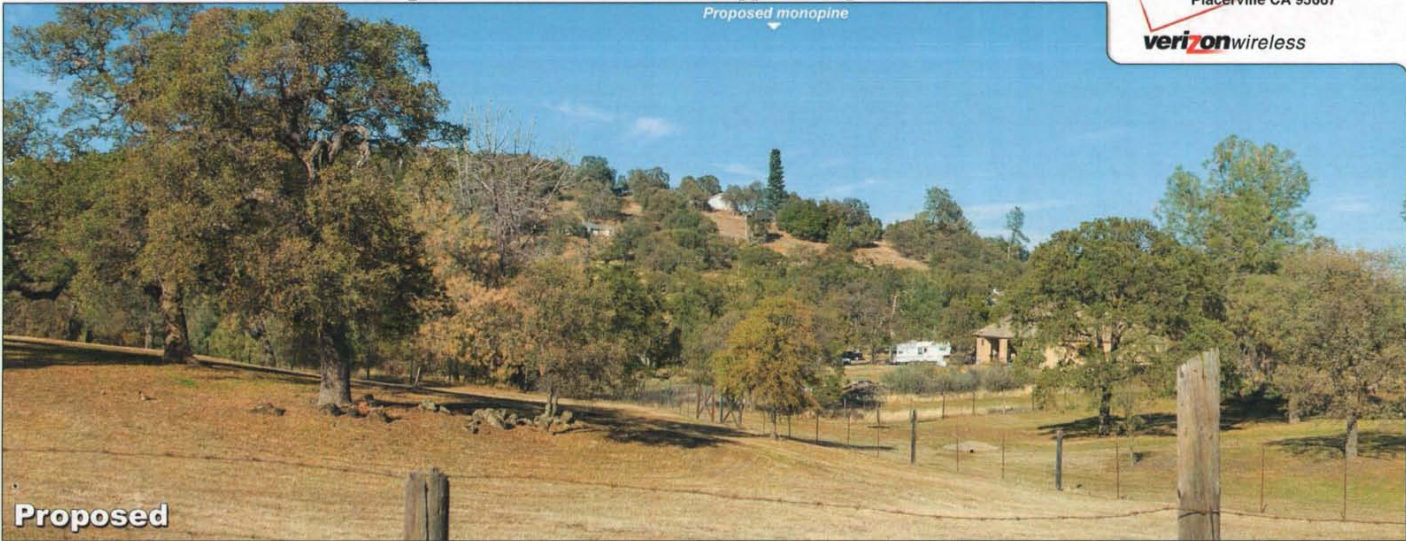
**Existing**

Photosimulation of the view looking north from Trail's End Road approaching Trails End Court.

**Arrowbee Lake**  
4131 Birdseye View Lane  
Placerville CA 95667



*Proposed monopine*



**Proposed**

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Version Date: October 01, 2014



**Existing**

Photosimulation of the view looking north-northwest from Shoreline Drive approaching Trails End Drive.

*Proposed monopine*

**Arrowbee Lake**  
 4131 Birdseye View Lane  
 Placerville CA 95667



**Proposed**

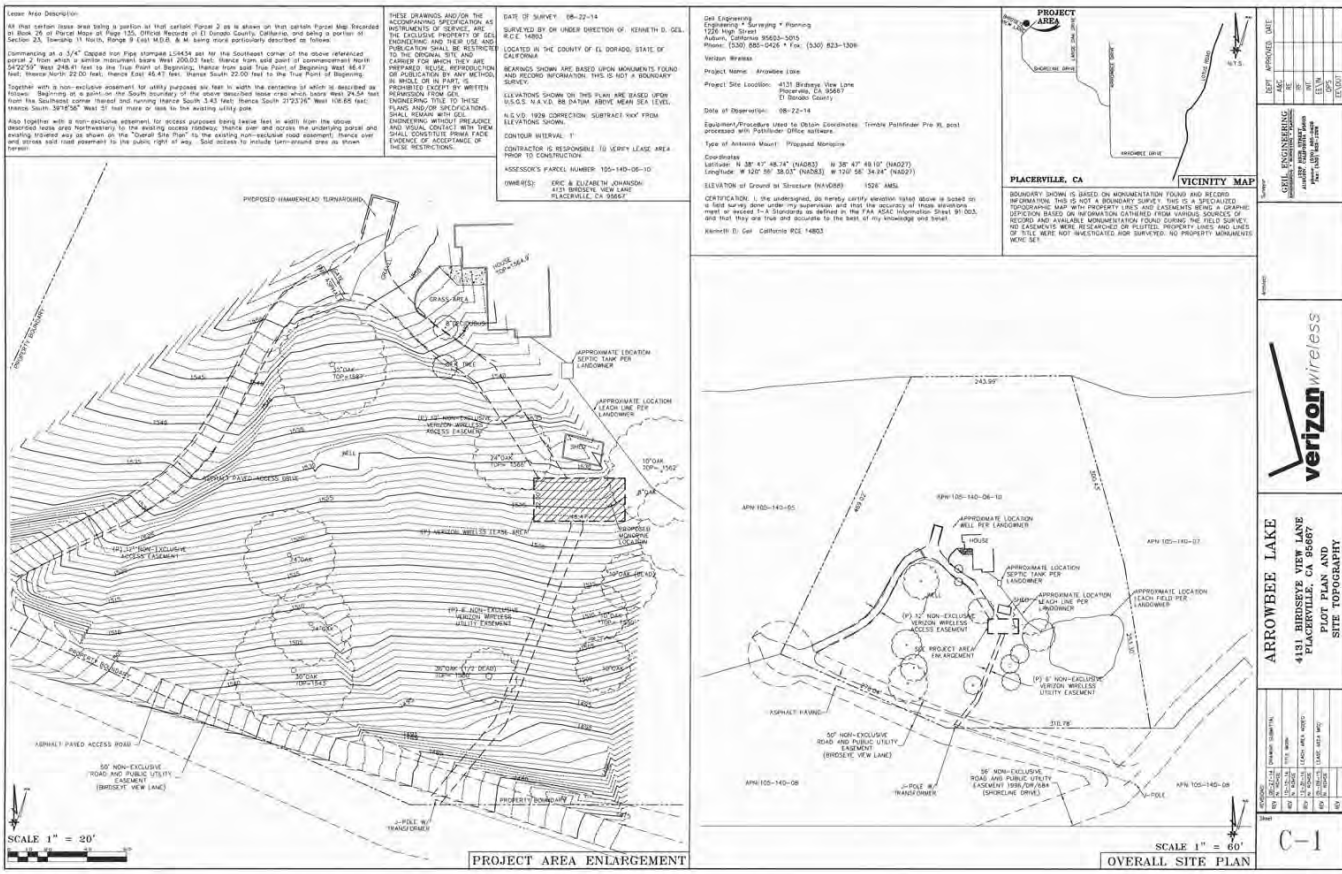
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SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

ZAB 06-27-19

Page 38 of 124



**Lease Area Description:**

All that certain lease was being a portion of that certain Parcel 2 as it shows on that certain Parcel Map Recoded as Parcel 2A of Parcel Map of Page 415, Official Records of El Dorado County, California, and which a portion of Section 25, Township 9 North, Range 9 East, T19S, R9E, S25E, and also more particularly described as follows:

Commencing at a 1/4" Closed Top Wire (NAD83) set for the Southeast corner of the above referenced parcel 2, from which a bearing monument bears West 206.03 feet; thence turn left point of commencement North 22°22'50" West 248.41 feet to the True Point of Beginning; thence from said True Point of Beginning West 46.41 feet; thence North 22.00 feet; thence East 45.41 feet; thence South 22.00 feet to the True Point of Beginning.

Together with a non-exclusive easement for utility purposes as hereinafter described in the description of which is described as follows: Beginning at a point on the South boundary of the above described lease area, which bears West 29.54 feet from the Southeast corner; thence and running thence South 1.83 feet; thence South 27°27'30" West 108.65 feet; thence South 38°18'50" West 51 feet more or less to the existing utility pole.

Also together with a non-exclusive easement for electric purposes being located here and there on the above described lease area northwesterly to the existing access roadway, thence and over and across the underlying parcel and existing roadway as hereinafter described in the description of which is described as follows: thence and over and across said road easement to the public right of way. Said section to include thereon and there as shown thereon.

THESE DRAWINGS AND/OR THE INSTRUMENTS SPECIFICALLY AS INSTRUMENTS OF SERVICE AND THIS EXCLUSIVE PROPERTY OF THE ENGINEER AND THESE ARE NOT TO BE REPRODUCED OR COPIED FOR ANY OTHER PURPOSES WITHOUT THE WRITTEN PERMISSION FROM THE ENGINEER. THESE TO BE USED IN CONNECTION WITH THESE PLANS AND/OR SPECIFICATIONS. SMALL REMAINS WHICH EXIST ON THE SITE SHALL BE REMOVED PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE TO VERIFY LEASE AREA PRIOR TO CONSTRUCTION.

ADDRESSOR'S PARCEL NUMBER: 105-140-08-10  
 OWNER: TERE & EILEEN W. JOHNSON  
 4151 BRUSSETTE VIEW LANE  
 PLACERVILLE, CA 95267

DATE OF SURVEY: 08-22-14  
 SURVEYED BY OR UNDER DIRECTION OF: KEVIN H. D. GEL, LICENSED SURVEYOR  
 PROJECT AREA: 1256 High Street  
 Auburn, California 95620-1000  
 Phone: (530) 885-0428 • Fax: (530) 823-1306  
 Verizon Wireless  
 Project Name: Arrowbee Lake  
 Project Site Location: 4151 Brusette View Lane  
 Placerville, CA 95267  
 El Dorado County

Date of Report: 08-22-14  
 Equipment/Procedure used to Obtain Elevations: Trimble Pathfinder Pro v2, prism attached with Pathfinder Office software  
 Type of Antenna Mount: Tripod-mounted  
 Coordinates:  
 Latitude: N 38° 47' 48.74" (NAD83)    W 120° 58' 38.03" (NAD83)  
 Longitude: W 120° 58' 38.03" (NAD83)    N 38° 47' 48.74" (NAD83)

ELEVATION OF Ground at Structure (NAD83): 1526 AMSL  
 CERTIFICATION: I, the undersigned, do hereby certify that the above is a true and correct copy of the original and that the accuracy of these elevations, measurements or information is based on the best of my knowledge and belief.

Sketch by: Gel, Catherine WCE 14823



NO.	REV.	DATE	DESCRIPTION

**BOUNDARY SHOWN IS BASED ON MONUMENTATION FOUND AND RECORD INFORMATION. THIS IS NOT A BOUNDARY SURVEY. THIS IS A SPECIALIZED TOPOGRAPHIC MAP WITH PROPERTY LINES AND ELEVATIONS BASED ON GRAPHIC INFORMATION BASED ON INFORMATION OBTAINED FROM VARIOUS SOURCES OF RECORD AND AVAILABLE MONUMENTATION FOUND DURING THE FIELD SURVEY. NO ELEVATIONS WERE RESEARCHED OR PLOTTED. PROPERTY LINES AND LINES OF TITLE WERE NOT INVESTIGATED NOR SURVEYED. NO PROPERTY MONUMENTS WERE SEEN.**



**ARROWBEE LAKE  
4151 BRUSSETTE VIEW LANE  
PLACERVILLE, CA 95267  
RIGHT PLAIN ANTI-  
SITE TOPOGRAPHY**

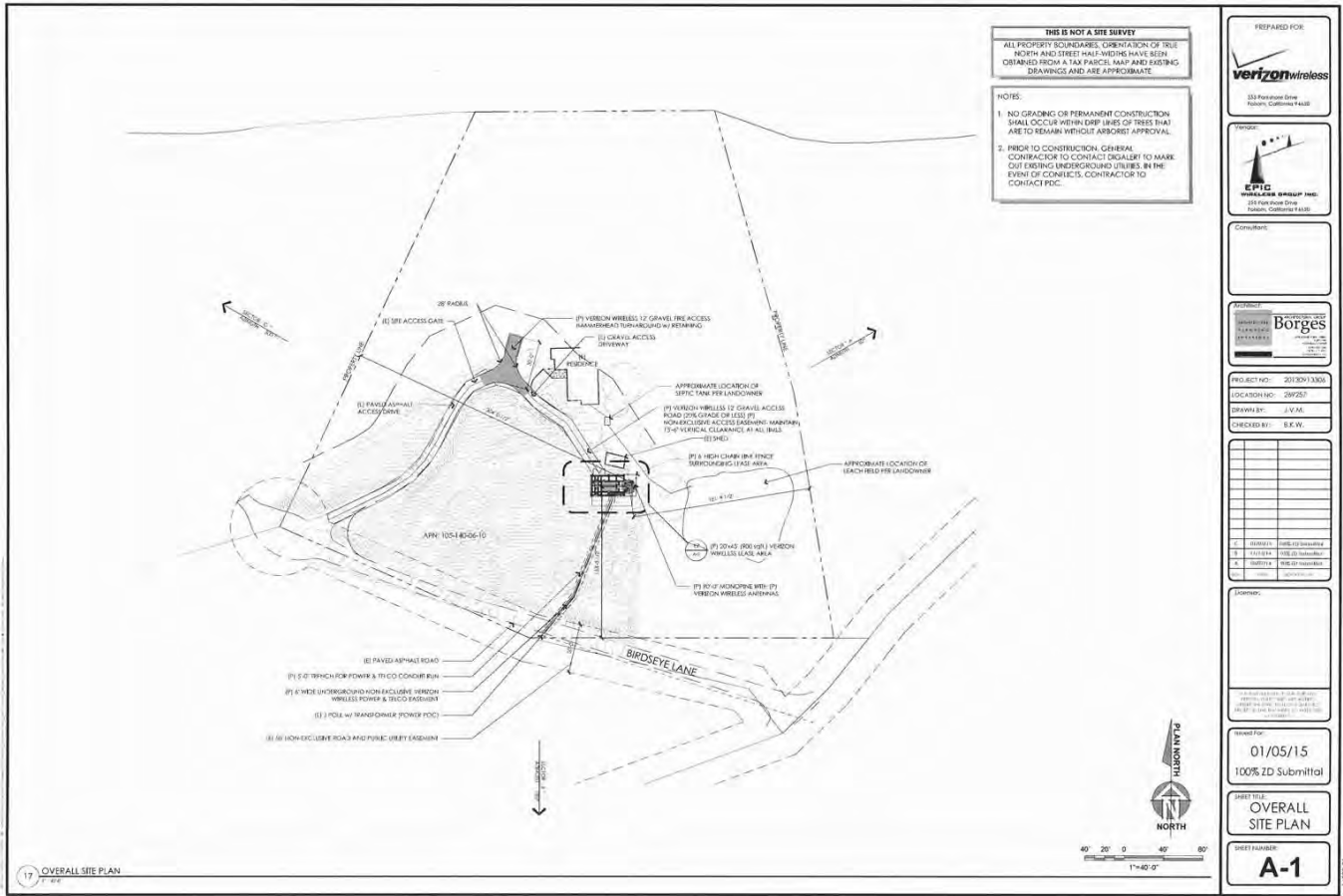
NO.	REV.	DATE	DESCRIPTION

**C-1**

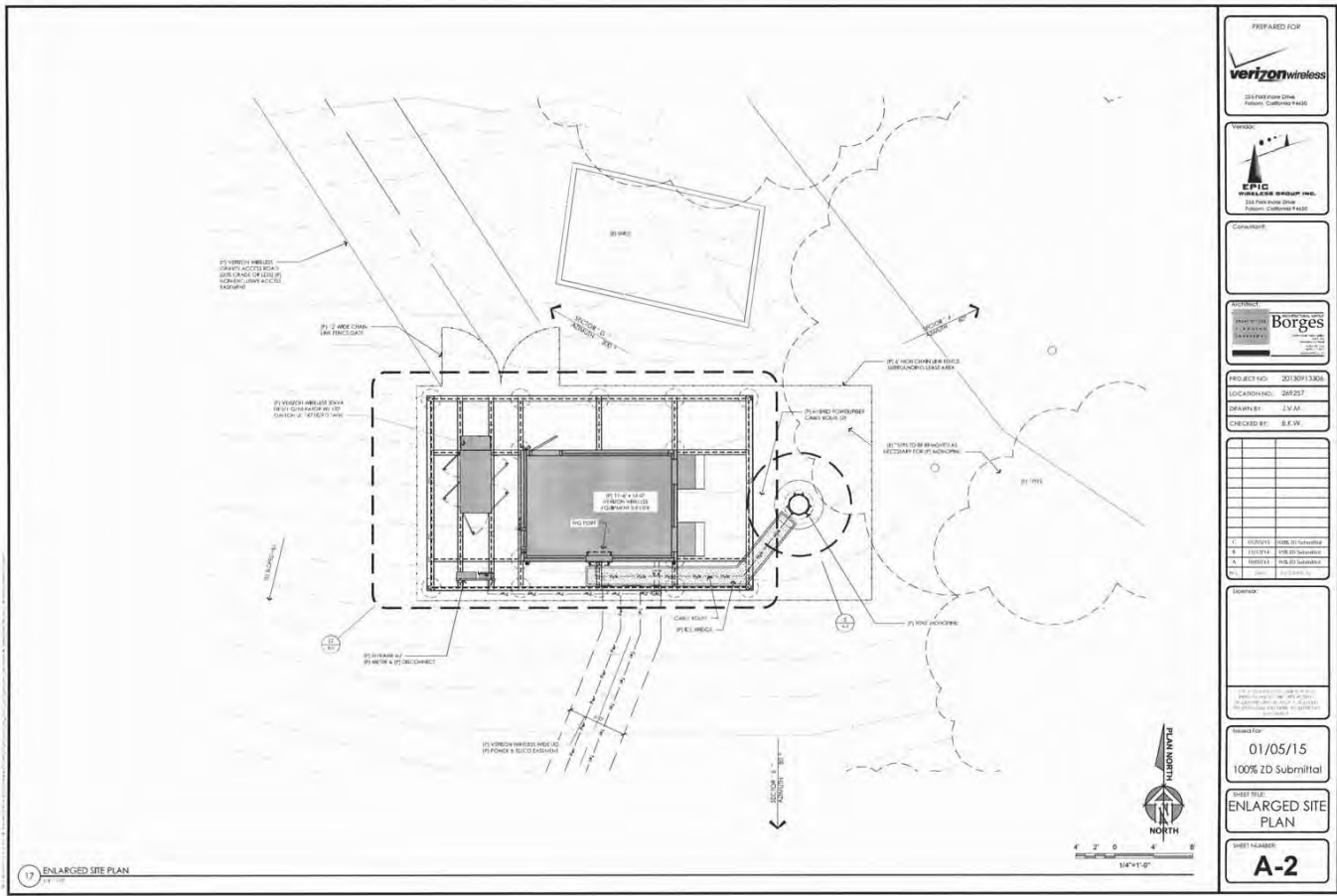
SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

ZAB 06-27-19

Page 39 of 124



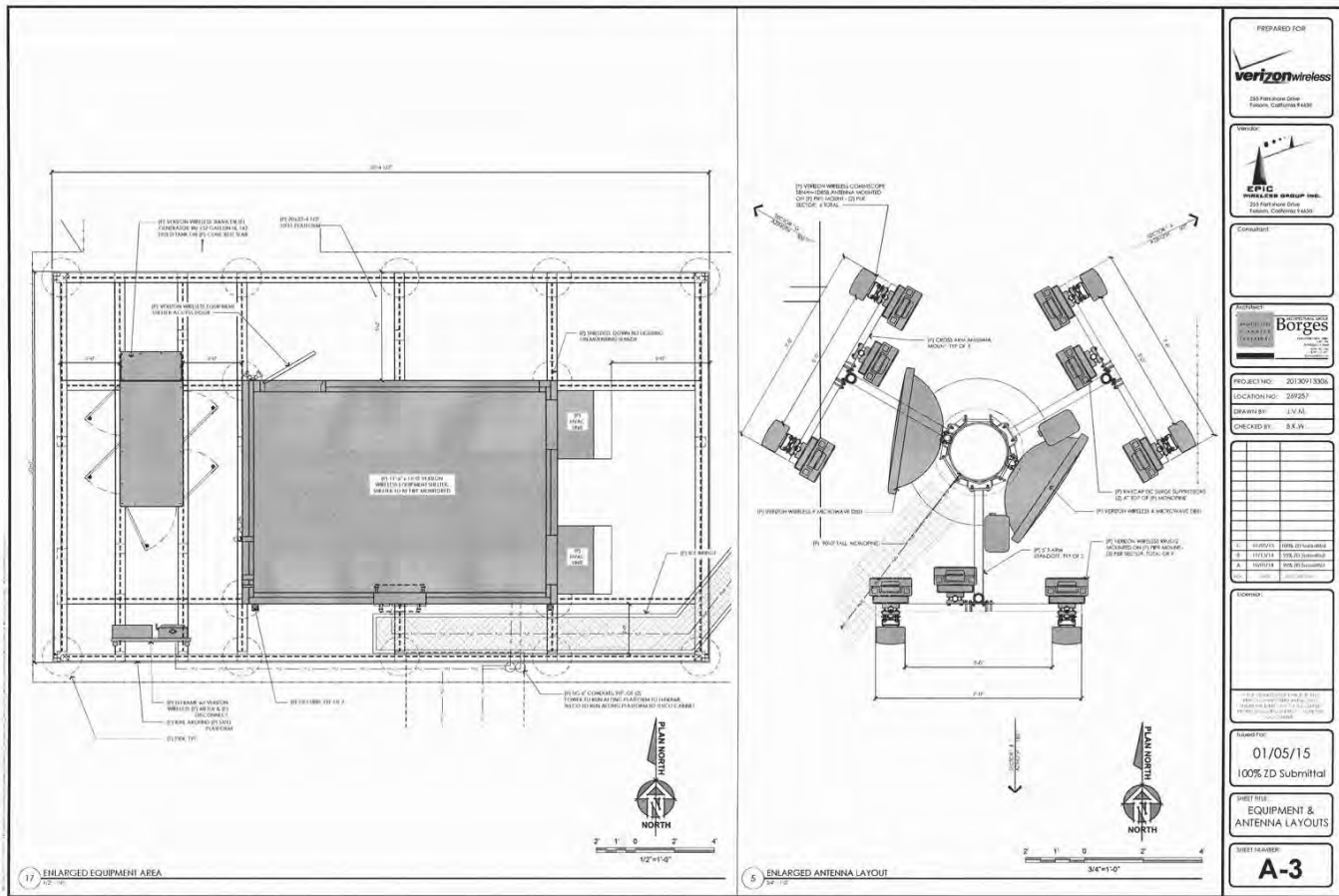
SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE  
ZAB 06-27-19  
Page 40 of 124



SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

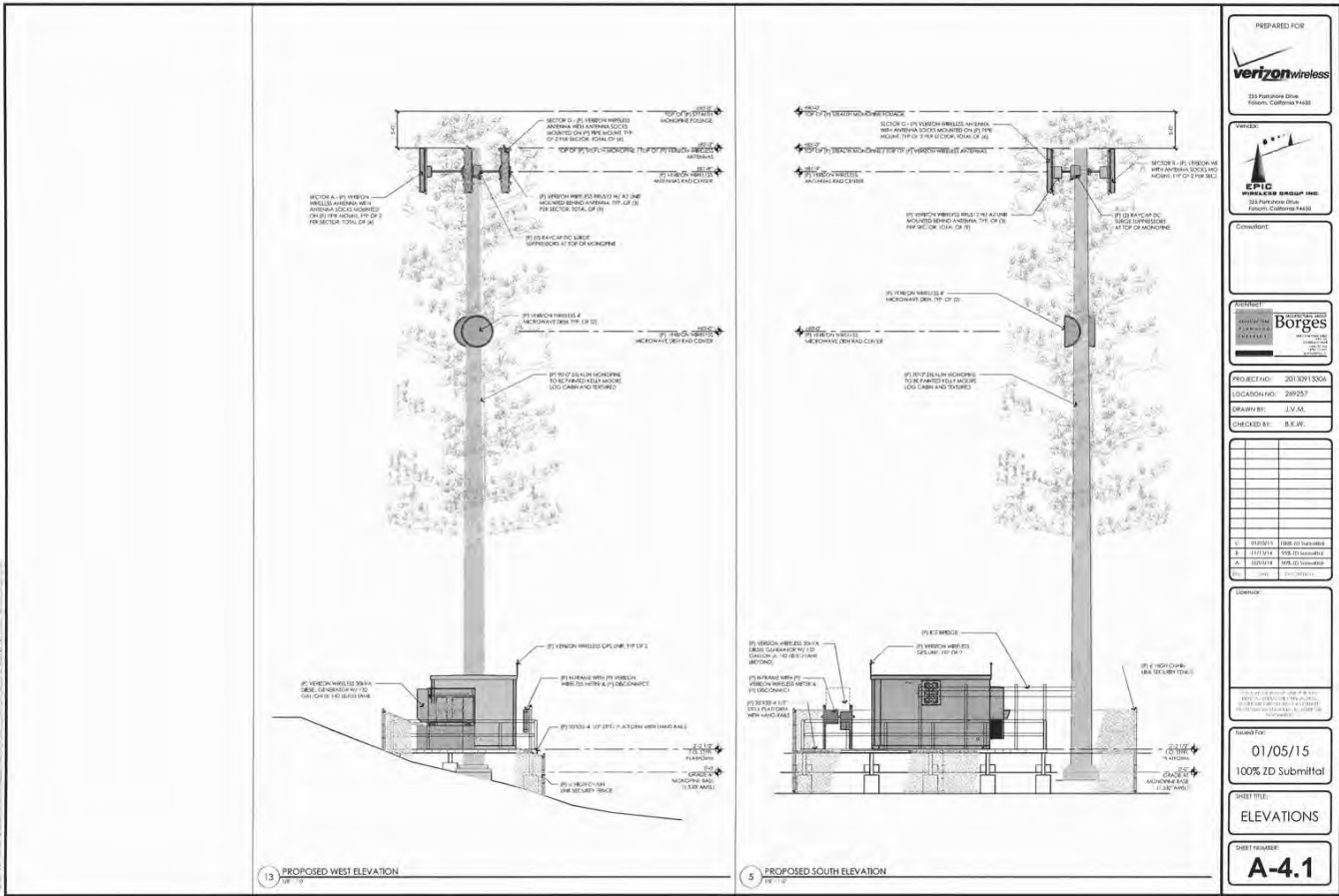
ZAB 06-27-19

Page 41 of 124

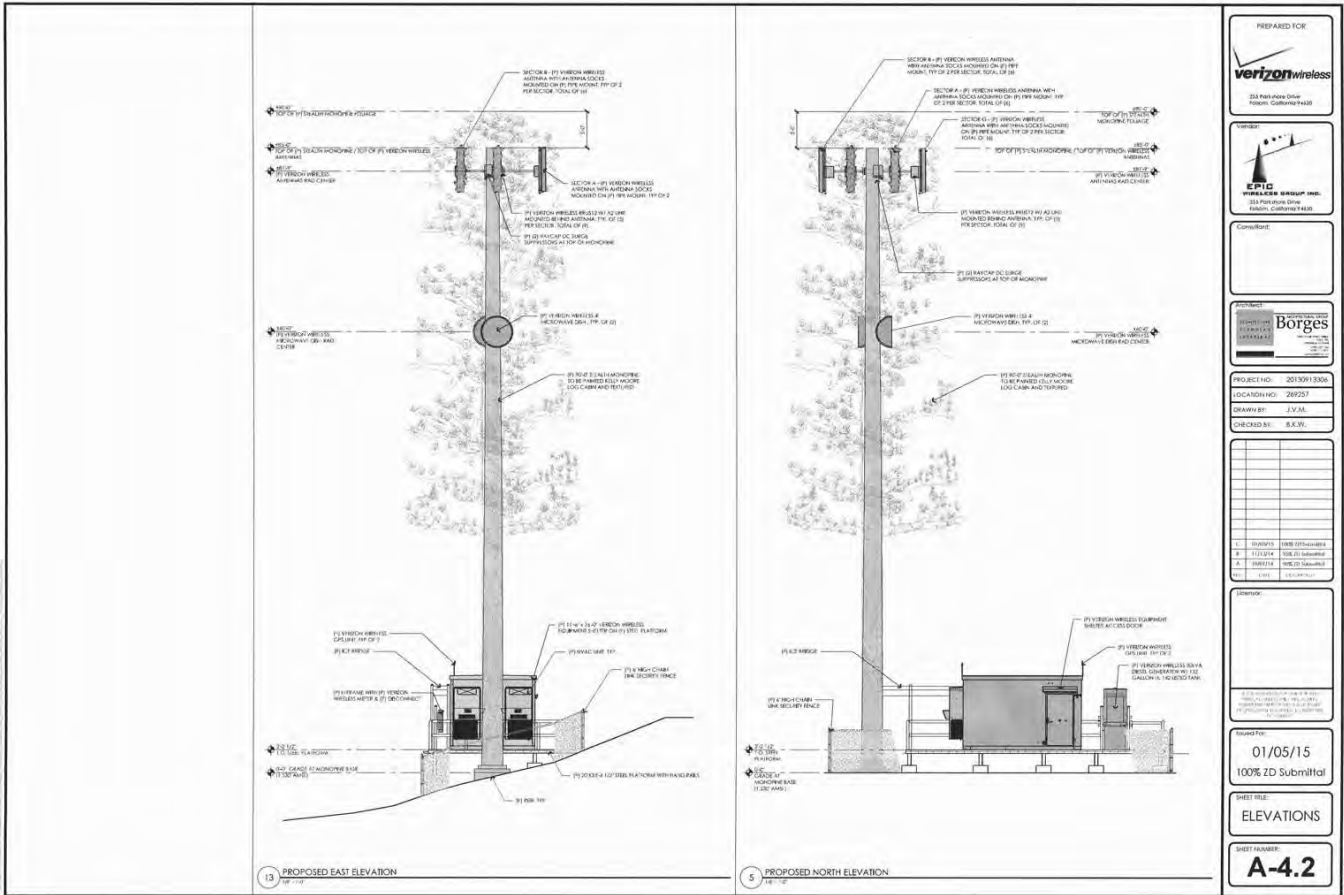


SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

ZAB 06-27-19







**SD030** Industrial Diesel Generator Set  
EPA Emission Certificate, Tier 4

Standby Power Rating  
37.5KVA 24KW 60 Hz

Prime Power Rating  
30KVA 24KW 60 Hz

**Features**

- Automatic Voltage Regulation
- Automatic Frequency Regulation
- Automatic Load Rejection
- Automatic Load Acceptance
- Automatic Load Shedding
- Automatic Load Transfer
- Automatic Load Restoration
- Automatic Load Rejection
- Automatic Load Acceptance
- Automatic Load Shedding
- Automatic Load Transfer
- Automatic Load Restoration

**Benefits**

- Low Total Cost of Ownership
- High Reliability
- Low Maintenance
- Low Fuel Consumption
- Low Noise
- Low Emissions
- Low Vibration
- Low Heat
- Low Water Consumption
- Low Air Consumption
- Low Oil Consumption
- Low Water Consumption
- Low Air Consumption
- Low Oil Consumption

PRIMARY CODES AND STANDARDS

**SD030** application and engineering data

**GENERAL INFORMATION**

Model	SD030
Rated Power (kW)	24
Rated Power (kVA)	37.5
Rated Voltage (V)	208/240
Rated Frequency (Hz)	60
Rated Speed (RPM)	1800
Rated Efficiency (%)	88
Rated Fuel Consumption (L/hr)	10.5
Rated Fuel Consumption (GPH)	2.8
Rated Fuel Consumption (kg/hr)	10.5
Rated Fuel Consumption (lb/hr)	23.1
Rated Fuel Consumption (gal/hr)	2.8
Rated Fuel Consumption (m <sup>3</sup> /hr)	0.035
Rated Fuel Consumption (m <sup>3</sup> /day)	0.84
Rated Fuel Consumption (m <sup>3</sup> /year)	306.6
Rated Fuel Consumption (m <sup>3</sup> /month)	25.55
Rated Fuel Consumption (m <sup>3</sup> /week)	5.88
Rated Fuel Consumption (m <sup>3</sup> /hour)	0.26
Rated Fuel Consumption (m <sup>3</sup> /minute)	0.0043
Rated Fuel Consumption (m <sup>3</sup> /second)	7.17E-05

**ENVIRONMENTAL INFORMATION**

Operating Altitude (m)	1000
Operating Altitude (ft)	3280
Operating Altitude (ft)	10000
Operating Altitude (ft)	15000
Operating Altitude (ft)	20000
Operating Altitude (ft)	25000
Operating Altitude (ft)	30000
Operating Altitude (ft)	35000
Operating Altitude (ft)	40000
Operating Altitude (ft)	45000
Operating Altitude (ft)	50000
Operating Altitude (ft)	55000
Operating Altitude (ft)	60000
Operating Altitude (ft)	65000
Operating Altitude (ft)	70000
Operating Altitude (ft)	75000
Operating Altitude (ft)	80000
Operating Altitude (ft)	85000
Operating Altitude (ft)	90000
Operating Altitude (ft)	95000
Operating Altitude (ft)	100000

**ENVIRONMENTAL INFORMATION (continued)**

Operating Altitude (ft)	105000
Operating Altitude (ft)	110000
Operating Altitude (ft)	115000
Operating Altitude (ft)	120000
Operating Altitude (ft)	125000
Operating Altitude (ft)	130000
Operating Altitude (ft)	135000
Operating Altitude (ft)	140000
Operating Altitude (ft)	145000
Operating Altitude (ft)	150000
Operating Altitude (ft)	155000
Operating Altitude (ft)	160000
Operating Altitude (ft)	165000
Operating Altitude (ft)	170000
Operating Altitude (ft)	175000
Operating Altitude (ft)	180000
Operating Altitude (ft)	185000
Operating Altitude (ft)	190000
Operating Altitude (ft)	195000
Operating Altitude (ft)	200000

**SD030** operating data (EHz)

**OPERATING DATA**

Parameter	Value	Unit
Rated Power (kW)	24	kW
Rated Power (kVA)	37.5	kVA
Rated Voltage (V)	208/240	V
Rated Frequency (Hz)	60	Hz
Rated Speed (RPM)	1800	RPM
Rated Efficiency (%)	88	%
Rated Fuel Consumption (L/hr)	10.5	L/hr
Rated Fuel Consumption (GPH)	2.8	GPH
Rated Fuel Consumption (kg/hr)	10.5	kg/hr
Rated Fuel Consumption (lb/hr)	23.1	lb/hr
Rated Fuel Consumption (gal/hr)	2.8	gal/hr
Rated Fuel Consumption (m <sup>3</sup> /hr)	0.035	m <sup>3</sup> /hr
Rated Fuel Consumption (m <sup>3</sup> /day)	0.84	m <sup>3</sup> /day
Rated Fuel Consumption (m <sup>3</sup> /year)	306.6	m <sup>3</sup> /year
Rated Fuel Consumption (m <sup>3</sup> /month)	25.55	m <sup>3</sup> /month
Rated Fuel Consumption (m <sup>3</sup> /week)	5.88	m <sup>3</sup> /week
Rated Fuel Consumption (m <sup>3</sup> /hour)	0.26	m <sup>3</sup> /hour
Rated Fuel Consumption (m <sup>3</sup> /minute)	0.0043	m <sup>3</sup> /minute
Rated Fuel Consumption (m <sup>3</sup> /second)	7.17E-05	m <sup>3</sup> /second

**ENVIRONMENTAL INFORMATION**

Operating Altitude (m)	1000
Operating Altitude (ft)	3280
Operating Altitude (ft)	10000
Operating Altitude (ft)	15000
Operating Altitude (ft)	20000
Operating Altitude (ft)	25000
Operating Altitude (ft)	30000
Operating Altitude (ft)	35000
Operating Altitude (ft)	40000
Operating Altitude (ft)	45000
Operating Altitude (ft)	50000
Operating Altitude (ft)	55000
Operating Altitude (ft)	60000
Operating Altitude (ft)	65000
Operating Altitude (ft)	70000
Operating Altitude (ft)	75000
Operating Altitude (ft)	80000
Operating Altitude (ft)	85000
Operating Altitude (ft)	90000
Operating Altitude (ft)	95000
Operating Altitude (ft)	100000

**SD030** standard features and options

**STANDARD FEATURES**

- Automatic Voltage Regulation
- Automatic Frequency Regulation
- Automatic Load Rejection
- Automatic Load Acceptance
- Automatic Load Shedding
- Automatic Load Transfer
- Automatic Load Restoration
- Automatic Load Rejection
- Automatic Load Acceptance
- Automatic Load Shedding
- Automatic Load Transfer
- Automatic Load Restoration

**OPTIONS**

- Automatic Voltage Regulation
- Automatic Frequency Regulation
- Automatic Load Rejection
- Automatic Load Acceptance
- Automatic Load Shedding
- Automatic Load Transfer
- Automatic Load Restoration
- Automatic Load Rejection
- Automatic Load Acceptance
- Automatic Load Shedding
- Automatic Load Transfer
- Automatic Load Restoration

**SD030** dimensions, weights and sound levels

**ENVIRONMENTAL INFORMATION**

Operating Altitude (m)	1000
Operating Altitude (ft)	3280
Operating Altitude (ft)	10000
Operating Altitude (ft)	15000
Operating Altitude (ft)	20000
Operating Altitude (ft)	25000
Operating Altitude (ft)	30000
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Operating Altitude (ft)	75000
Operating Altitude (ft)	80000
Operating Altitude (ft)	85000
Operating Altitude (ft)	90000
Operating Altitude (ft)	95000
Operating Altitude (ft)	100000

**GENERAC** SD030 2.4 Liter, Level 2A

**Outline Model Sound Data SD030 2.4 Liter Diesel**

Parameter	Value	Unit
Rated Power (kW)	24	kW
Rated Power (kVA)	37.5	kVA
Rated Voltage (V)	208/240	V
Rated Frequency (Hz)	60	Hz
Rated Speed (RPM)	1800	RPM
Rated Efficiency (%)	88	%
Rated Fuel Consumption (L/hr)	10.5	L/hr
Rated Fuel Consumption (GPH)	2.8	GPH
Rated Fuel Consumption (kg/hr)	10.5	kg/hr
Rated Fuel Consumption (lb/hr)	23.1	lb/hr
Rated Fuel Consumption (gal/hr)	2.8	gal/hr
Rated Fuel Consumption (m <sup>3</sup> /hr)	0.035	m <sup>3</sup> /hr
Rated Fuel Consumption (m <sup>3</sup> /day)	0.84	m <sup>3</sup> /day
Rated Fuel Consumption (m <sup>3</sup> /year)	306.6	m <sup>3</sup> /year
Rated Fuel Consumption (m <sup>3</sup> /month)	25.55	m <sup>3</sup> /month
Rated Fuel Consumption (m <sup>3</sup> /week)	5.88	m <sup>3</sup> /week
Rated Fuel Consumption (m <sup>3</sup> /hour)	0.26	m <sup>3</sup> /hour
Rated Fuel Consumption (m <sup>3</sup> /minute)	0.0043	m <sup>3</sup> /minute
Rated Fuel Consumption (m <sup>3</sup> /second)	7.17E-05	m <sup>3</sup> /second

**ENVIRONMENTAL INFORMATION**

Operating Altitude (m)	1000
Operating Altitude (ft)	3280
Operating Altitude (ft)	10000
Operating Altitude (ft)	15000
Operating Altitude (ft)	20000
Operating Altitude (ft)	25000
Operating Altitude (ft)	30000
Operating Altitude (ft)	35000
Operating Altitude (ft)	40000
Operating Altitude (ft)	45000
Operating Altitude (ft)	50000
Operating Altitude (ft)	55000
Operating Altitude (ft)	60000
Operating Altitude (ft)	65000
Operating Altitude (ft)	70000
Operating Altitude (ft)	75000
Operating Altitude (ft)	80000
Operating Altitude (ft)	85000
Operating Altitude (ft)	90000
Operating Altitude (ft)	95000
Operating Altitude (ft)	100000

PREPARED FOR

**verizon** wireless

333 Park Avenue Drive  
Newark, California 94633

**EPIC** ENGINEERING & DESIGN, INC.

333 Park Avenue Drive  
Newark, California 94633

**Borges**

PROJECT NO: 2013013000

LOCATION: 20027

DRAWN BY: J.V.M.

CHECKED BY: B.F.W.

DATE: 01/05/15

100% 2D Submittal

SHEET TITLE: GENERATOR SPECIFICATION

SHEET NUMBER: A-5.1

**Bard** THE WALL-MOUNT™ STEP CAPACITY AIR CONDITIONERS  
Refrigerant Part Load Value (PLV) Efficiency up To 1.3 EER@117

**W435 - W435 Right Side Control Panel**  
60-20 - 90-20 Low Side Control Panel  
2 to 3 Ton (25,000 to 36,000 Btu/h)

**Green Refrigerant R-410A**



The Bard W435™ is the world's most energy efficient air conditioner...  
 • 1.3 EER@117 (EER) PLV Efficiency  
 • 1.3 EER@117 (EER) PLV Efficiency  
 • 1.3 EER@117 (EER) PLV Efficiency

**Key Features:**  
 • 1.3 EER@117 (EER) PLV Efficiency  
 • 1.3 EER@117 (EER) PLV Efficiency  
 • 1.3 EER@117 (EER) PLV Efficiency

**Applications:**  
 • Residential  
 • Commercial  
 • Industrial

**Comparison of Features**

Model	W435	W435	W435	W435
Capacity (max/min)	36,000/18,000	36,000/18,000	36,000/18,000	36,000/18,000
PLV Efficiency	1.3	1.3	1.3	1.3
Refrigerant	R-410A	R-410A	R-410A	R-410A

**Comparison of Features**

Model	W435	W435	W435	W435
Capacity (max/min)	36,000/18,000	36,000/18,000	36,000/18,000	36,000/18,000
PLV Efficiency	1.3	1.3	1.3	1.3
Refrigerant	R-410A	R-410A	R-410A	R-410A

**Comparison of Features**

Model	W435	W435	W435	W435
Capacity (max/min)	36,000/18,000	36,000/18,000	36,000/18,000	36,000/18,000
PLV Efficiency	1.3	1.3	1.3	1.3
Refrigerant	R-410A	R-410A	R-410A	R-410A

PREPARED FOR

**verizon** wireless

25 Park Ave. Suite 200  
Piscataway, NJ 08854

**EPIC**  
ELECTRICAL PROJECTS INC.

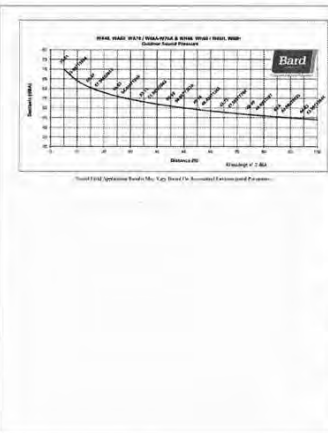
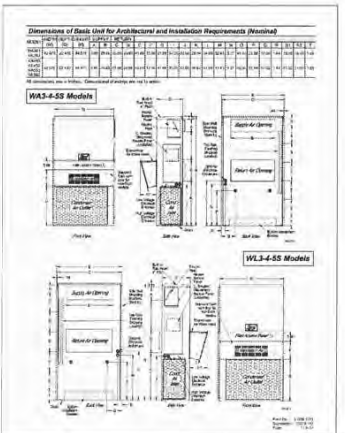
25 Park Ave. Suite 200  
Piscataway, NJ 08854

**Borges**

PROJECT NO.: 20130713005  
 LOCATION NO.: 30027  
 DRAWN BY: J.V.M.  
 CHECKED BY: B.Z.W.

**W435 Sound Data Matrix (dB @ 10 feet)**

Model	W435	W435	W435	W435
Capacity (max/min)	36,000/18,000	36,000/18,000	36,000/18,000	36,000/18,000
PLV Efficiency	1.3	1.3	1.3	1.3
Refrigerant	R-410A	R-410A	R-410A	R-410A



0. APPROVED: [Signature]

1. DATE: 01/05/15

2. 100% 2D Submittal

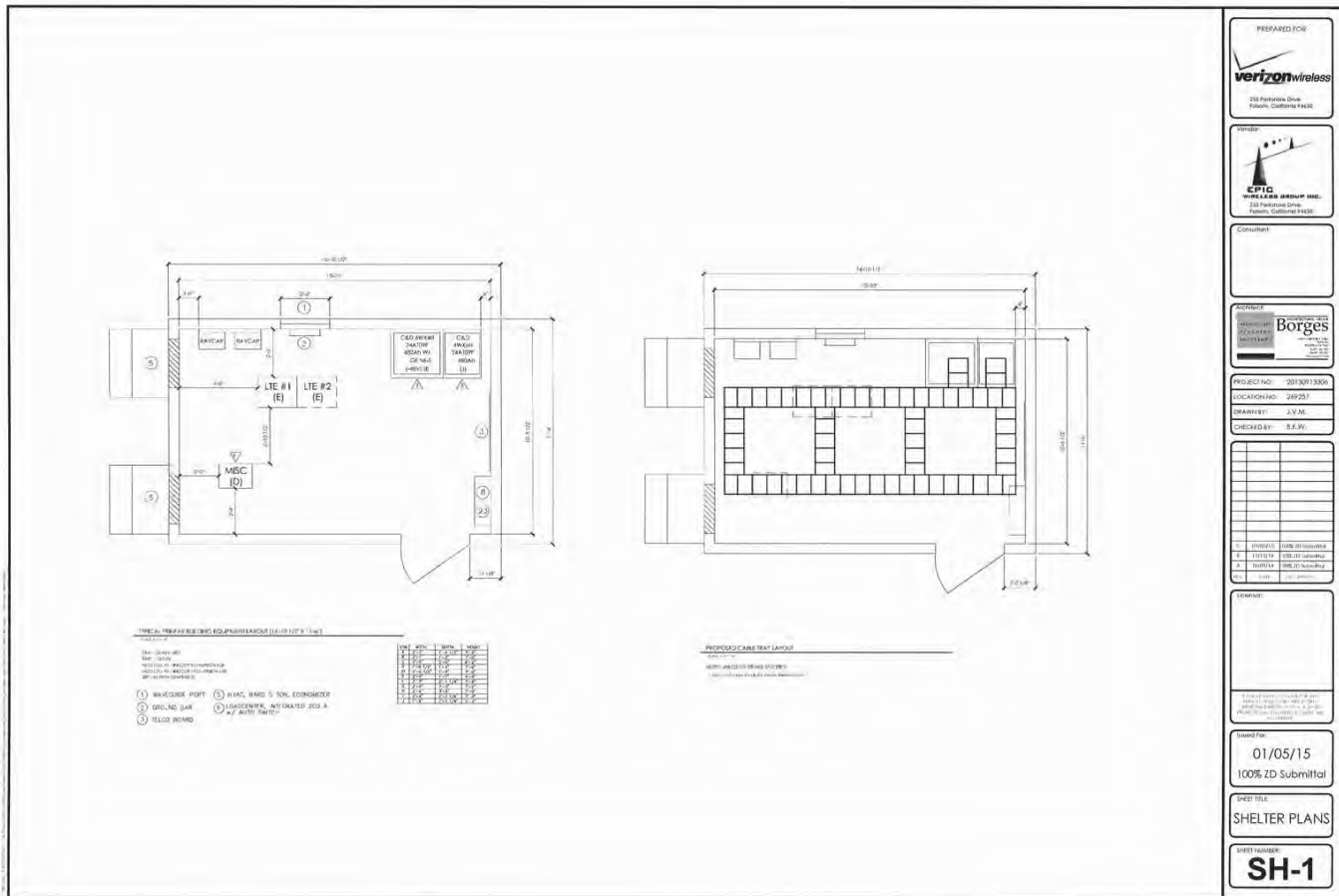
3. PROJECT: HVAC UNIT SPECIFICATION

4. SHEET NUMBER: A-5.2

SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

ZAB 06-27-19

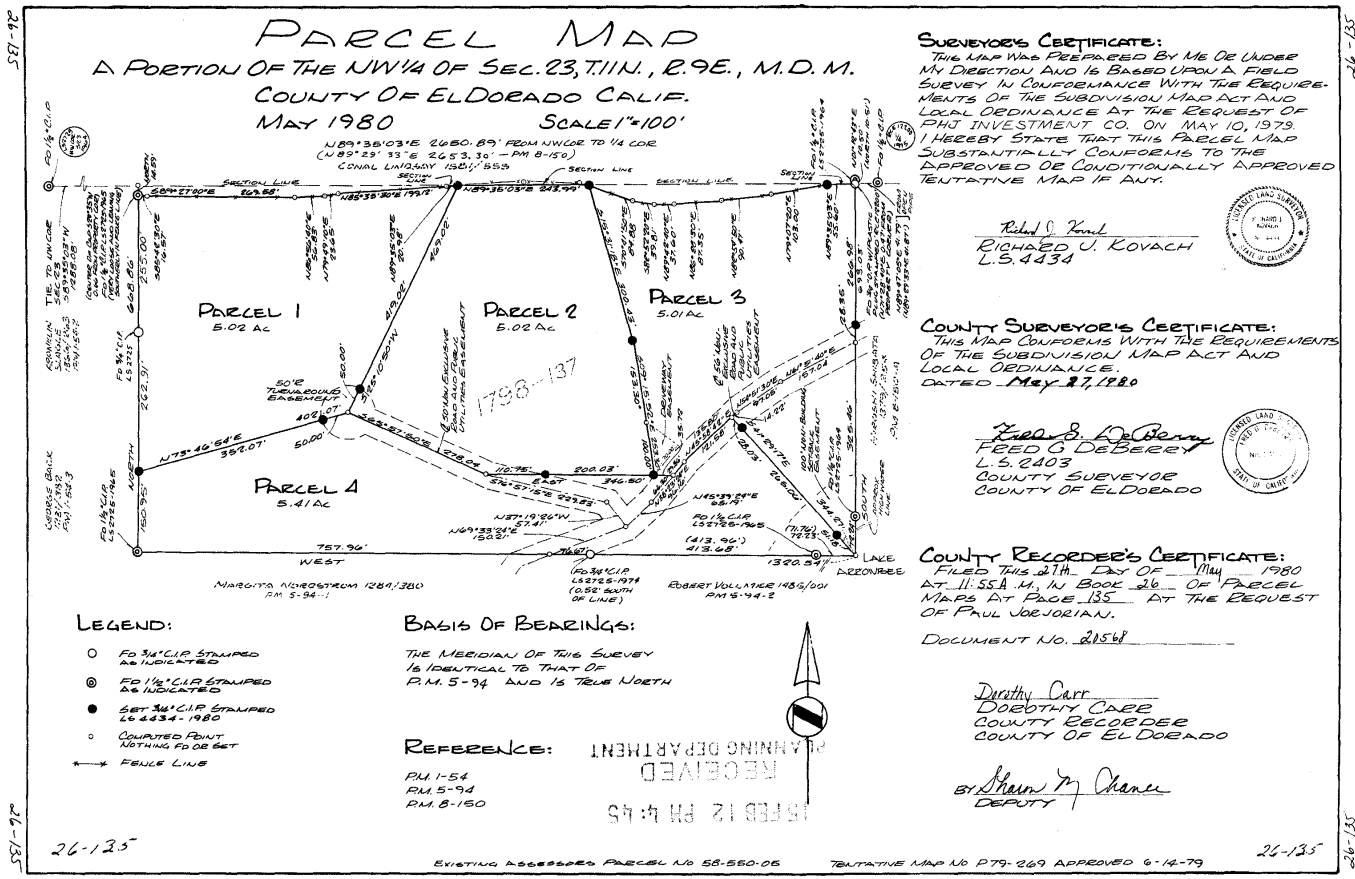
Page 46 of 124



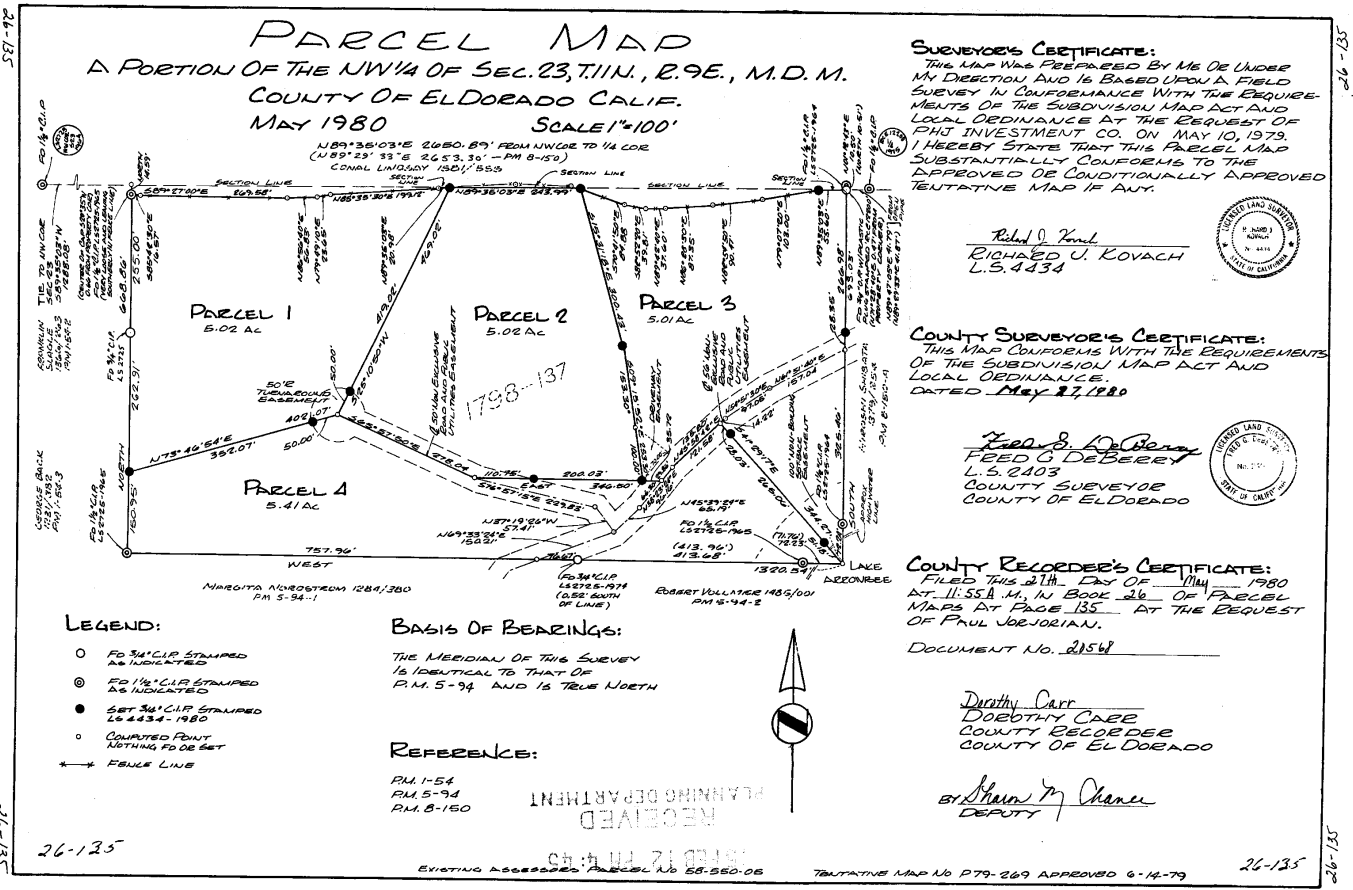
SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

ZAB 06-27-19

Page 47 of 124



S 15-0004



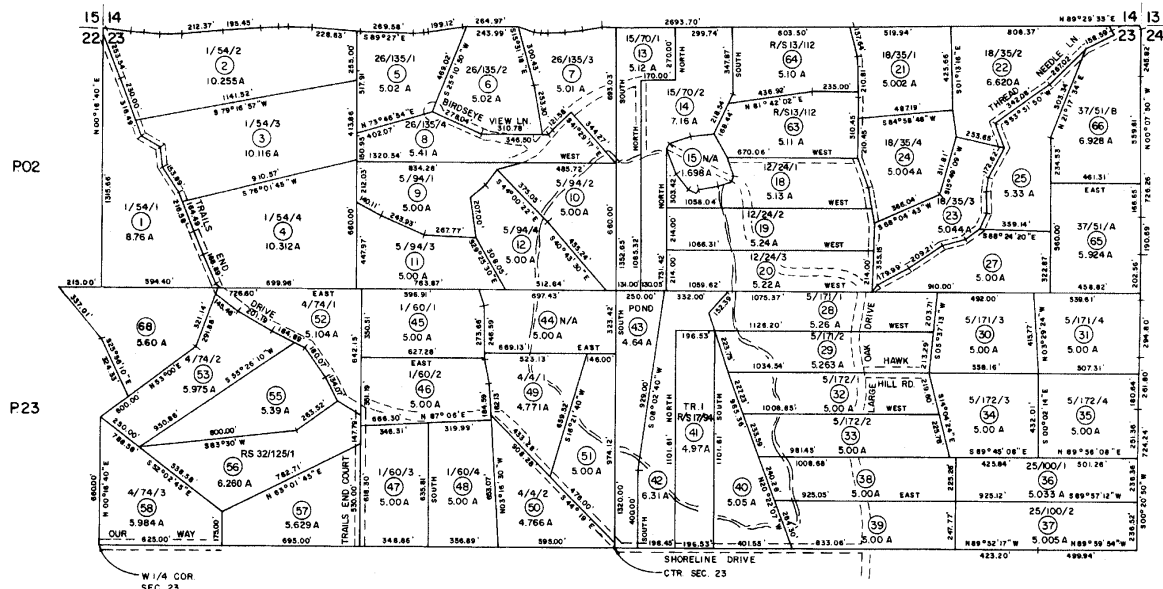
POR. SEC. 23, T.11N, R.9E, M.D.M.

Tax Area Code

105:14

15 FEB 12 PM 4:45  
RECEIVED  
PLANNING DEPARTMENT

P02



P16

P15

REV. 4/28/2011

Assessor's Map Bk. 105 - Pg. 14  
County of El Dorado, California

THIS MAP IS NOT A SURVEY; It is prepared by the El Dorado Co. Assessor's Office for assessment purposes only.

NOTE - Assessor's Block Numbers Shown in Ellipses  
Assessor's Parcel Numbers Shown in Circles



# PUBLIC NOTICE

Federal Communications Commission  
445 12<sup>th</sup> St., S.W.  
Washington, D.C. 20554

News Media Information 202 / 418-0500  
Internet: <http://www.fcc.gov>  
TTY: 1-888-835-5322

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## WIRELESS TELECOMMUNICATIONS BUREAU OFFERS GUIDANCE ON INTERPRETATION OF SECTION 6409(a) OF THE MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012

DA 12-2047  
January 25, 2013

On February 22, 2012, the Middle Class Tax Relief and Job Creation Act of 2012 (Tax Act)<sup>1</sup> became law. Section 6409(a) of the Tax Act provides that a state or local government “may not deny, and shall approve” any request for collocation, removal, or replacement of transmission equipment on an existing wireless tower or base station, provided this action does not substantially change the physical dimensions of the tower or base station.<sup>2</sup> The full text of Section 6409(a) is reproduced in the Appendix to this Public Notice.

To date, the Commission has not received any formal petition to interpret or apply the provisions of Section 6409(a). We also are unaware of any judicial precedent interpreting or applying its terms. The Wireless Telecommunications Bureau has, however, received informal inquiries from service providers, facilities owners, and state and local governments seeking guidance as to how Section 6409(a) should be applied. In order to assist interested parties, this Public Notice summarizes the Bureau’s understanding of Section 6409(a) in response to several of the most frequently asked questions.<sup>3</sup>

### What does it mean to “substantially change the physical dimensions” of a tower or base station?

Section 6409(a) does not define what constitutes a “substantial[] change” in the dimensions of a tower or base station. In a similar context, under the *Nationwide Collocation Agreement* with the Advisory Council on Historic Preservation and the National Conference of State Historic Preservation Officers, the Commission has applied a four-prong test to determine whether a collocation will effect a “substantial increase in the size of [a] tower.”<sup>4</sup> A proposed collocation that does not involve a substantial increase in

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<sup>1</sup> Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. 112-96, H.R. 3630, 126 Stat. 156 (enacted Feb. 22, 2012) (Tax Act).

<sup>2</sup> *Id.*, § 6409(a).

<sup>3</sup> Although we offer this interpretive guidance to assist parties in understanding their obligations under Section 6409(a), *see, e.g., Truckers United for Safety v. Federal Highway Administration*, 139 F.3d 934 (D.C.Cir. 1998), the Commission remains free to exercise its discretion to interpret Section 6409(a) either by exercising its rulemaking authority or through adjudication. With two exceptions not relevant here, the Tax Act expressly grants the Commission authority to “implement and enforce” this and other provisions of Title VI of that Act “as if this title is a part of the Communications Act of 1934 (47 U.S.C. 151 et seq.)” Tax Act § 6003.

<sup>4</sup> 47 C.F.R. Part 1, App. B, *Nationwide Programmatic Agreement for the Collocation of Wireless Antennas*, § I.C (*Nationwide Collocation Agreement*).



size is ordinarily excluded from the Commission's required historic preservation review under Section 106 of the National Historic Preservation Act (NHPA).<sup>5</sup> The Commission later adopted the same definition in the *2009 Declaratory Ruling* to determine whether an application will be treated as a collocation when applying Section 332(c)(7) of the Communications Act of 1934.<sup>6</sup> The Commission has also applied a similar definition to determine whether a modification of an existing registered tower requires public notice for purposes of environmental review.<sup>7</sup>

Under Section I.C of the *Nationwide Collocation Agreement*, a "substantial increase in the size of the tower" occurs if:

- 1) [t]he mounting of the proposed antenna on the tower would increase the existing height of the tower by more than 10%, or by the height of one additional antenna array with separation from the nearest existing antenna not to exceed twenty feet, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this paragraph if necessary to avoid interference with existing antennas; or
- 2) [t]he mounting of the proposed antenna would involve the installation of more than the standard number of new equipment cabinets for the technology involved, not to exceed four, or more than one new equipment shelter; or
- 3) [t]he mounting of the proposed antenna would involve adding an appurtenance to the body of the tower that would protrude from the edge of the tower more than twenty feet, or more than the width of the tower structure at the level of the appurtenance, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this paragraph if necessary to shelter the antenna from inclement weather or to connect the antenna to the tower via cable; or
- 4) [t]he mounting of the proposed antenna would involve excavation outside the current tower site, defined as the current boundaries of the leased or owned property surrounding the tower and any access or utility easements currently related to the site.

Although Congress did not adopt the Commission's terminology of "substantial increase in size" in Section 6409(a), we believe that the policy reasons for excluding from Section 6409(a) collocations that substantially change the physical dimensions of a structure are closely analogous to those that animated the Commission in the *Nationwide Collocation Agreement* and subsequent proceedings. In light of the Commission's prior findings, the Bureau believes it is appropriate to look to the existing definition of "substantial increase in size" to determine whether the collocation, removal, or replacement of equipment

---

<sup>5</sup> See 16 U.S.C. § 470f, *see also* 47 C.F.R. § 1.1307(a)(4) (requiring applicants to determine whether proposed facilities may affect properties that are listed, or are eligible for listing, in the National Register of Historic Places).

<sup>6</sup> See Petition for Declaratory Ruling to Clarify Provisions of Section 332(c)(7)(B) to Ensure Timely Siting Review and to Preempt Under Section 253 State and Local Ordinances that Classify All Wireless Siting Proposals as Requiring a Variance, WT Docket No. 08-165, *Declaratory Ruling*, 24 FCC Rcd. 13994, 14012, para. 46 & n.146 (2009) (*2009 Declaratory Ruling*), *recon. denied*, 25 FCC Rcd. 11157 (2010), *pet. for review denied sub nom. City of Arlington, Texas v. FCC*, 668 F.3d 229 (5<sup>th</sup> Cir.), *cert. granted*, 113 S.Ct. 524 (2012); 47 U.S.C. § 332(c)(7).

<sup>7</sup> See 47 C.F.R. § 17.4(c)(1)(B); National Environmental Policy Act Compliance for Proposed Tower Registrations, WT Docket No. 08-61, *Order on Remand*, 26 FCC Rcd. 16700, 16720-21, para. 53 (2011).

on a wireless tower or base station substantially changes the physical dimensions of the underlying structure within the meaning of Section 6409(a).

#### **What is a “wireless tower or base station”?**

A “tower” is defined in the *Nationwide Collocation Agreement* as “any structure built for the sole or primary purpose of supporting FCC-licensed antennas and their associated facilities.”<sup>8</sup> The Commission has described a “base station” as consisting of “radio transceivers, antennas, coaxial cable, a regular and backup power supply, and other associated electronics.”<sup>9</sup> Section 6409(a) applies to the collocation, removal, or replacement of equipment on a wireless tower or base station. In this context, we believe it is reasonable to interpret a “base station” to include a structure that currently supports or houses an antenna, transceiver, or other associated equipment that constitutes part of a base station.<sup>10</sup> Moreover, given the absence of any limiting statutory language, we believe a “base station” encompasses such equipment in any technological configuration, including distributed antenna systems and small cells.

Section 6409(a) by its terms applies to any “wireless” tower or base station. By contrast, the scope of Section 332(c)(7) extends only to facilities used for “personal wireless services” as defined in that section.<sup>11</sup> Given Congress’s decision not to use the pre-existing definition from another statutory provision relating to wireless siting, we believe the scope of a “wireless” tower or base station under Section 6409(a) is not intended to be limited to facilities that support “personal wireless services” under Section 332(c)(7).

#### **May a state or local government require an application for an action covered under Section 6409(a)?**

Section 6409(a) states that a state or local government “may not deny, and shall approve, any eligible facilities request. . . .” It does not say that a state or local government may not require an application to be filed. The provision that a state or local government must approve and may not deny a request to take a covered action, in the Bureau’s view, implies that the relevant government entity may require the filing of an application for administrative approval.

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<sup>8</sup> See *Nationwide Collocation Agreement*, § I.B.

<sup>9</sup> See Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, WT Docket No. 10-133, *Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services, Fifteenth Report*, 26 FCC Rcd. 9664, 9481, para. 308 (2011).

<sup>10</sup> See also 47 C.F.R. Part 1, App. C, Nationwide Programmatic Agreement Regarding the Section 106 National Historic Preservation Act Review Process, § II.A.14 (defining “tower” to include “the on-site fencing, equipment, switches, wiring, cabling, power sources, shelters, or cabinets associated with that Tower but not installed as part of an Antenna as defined herein”).

<sup>11</sup> 47 U.S.C. § 332(c)(7)(A). “Personal wireless services” is in turn defined to mean “commercial mobile services, unlicensed wireless services, and common carrier wireless exchange access services.” *Id.* § 332(c)(7)(C)(1).

**Is there a time limit within which an application must be approved?**

Section 6409(a) does not specify any period of time for approving an application. However, the statute clearly contemplates an administrative process that invariably ends in approval of a covered application. We believe the time period for processing these applications should be commensurate with the nature of the review.

In the *2009 Declaratory Ruling*, the Commission found that 90 days is a presumptively reasonable period of time to process collocation applications.<sup>12</sup> In light of the requirement of Section 6409(a) that the reviewing authority “may not deny, and shall approve” a covered request, we believe that 90 days should be the maximum presumptively reasonable period of time for reviewing such applications, whether for “personal wireless services” or other wireless facilities.

Wireless Telecommunications Bureau contact: Maria Kirby at (202) 418-1476 or by email: [Maria.Kirby@fcc.gov](mailto:Maria.Kirby@fcc.gov).

-FCC-

For more news and information about the Federal Communications Commission please visit: [www.fcc.gov](http://www.fcc.gov)

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<sup>12</sup> See *2009 Declaratory Ruling*, 24 FCC Rcd. at 14012-13, paras. 46-47.

**APPENDIX**

**SEC. 6409. WIRELESS FACILITIES DEPLOYMENT.**

**(a) FACILITY MODIFICATIONS.**

(1) IN GENERAL. Notwithstanding section 704 of the Telecommunications Act of 1996 (Public Law 104–104) or any other provision of law, a State or local government may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.

(2) ELIGIBLE FACILITIES REQUEST. For purposes of this subsection, the term “eligible facilities request” means any request for modification of an existing wireless tower or base station that involves —

(A) collocation of new transmission equipment;

(B) removal of transmission equipment; or

(C) replacement of transmission equipment.

(3) APPLICABILITY OF ENVIRONMENTAL LAWS. Nothing in paragraph (1) shall be construed to relieve the Commission from the requirements of the National Historic Preservation Act or the National Environmental Policy Act of 1969.

---

**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Supplement to my June 24, 2019 Opposition to Permit # ZP2018-0236  
**Attachments:** 2019.06.26 Zoning Board.pdf; s15-0004\_application\_packet El Dorado County.pdf; FCC Public Notice.pdf

**From:** Michael Burt [mailto:mb@michaelburtlaw.com]  
**Sent:** Thursday, June 27, 2019 12:10 AM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** Supplement to my June 24, 2019 Opposition to Permit # ZP2018-0236

Dear Board Members

Please consider the attached supplement to my letter in opposition sent to you on June 24, 2019.

Michael Burt  
Law Office of Michael Burt  
1000 Brannan Street, Suite 400  
San Francisco, California 94103-4888  
415-522-1508 phone  
415-522-1506 fax  
415-250-4541 cell  
[mb@michaelburtlaw.com](mailto:mb@michaelburtlaw.com)

**Law Office of Michael Burt**  
 1000 Brannan Street, Suite 400  
 San Francisco, California 94103  
 415-522-1508 phone; 415-522-1506 fax  
 mb@michaelburtlaw.com

June 24, 2019

Berkeley Zoning Adjustment Board  
 1231 Addison Street  
 Berkeley, CA 94708  
 Sent via email to: zab@cityofberkeley.info

*Re: Supplement to June 24, 2019 Opposition to Permit # ZP2018-0236 (Berryman Reservoir/Codornices Park cell tower)*

Dear Board Members:

This letter is a supplement to my June 24, 2019 letter opposing the above-referenced application by Verizon for a permit to build a 50 foot fake pine tree cell tower at the Berryman Reservoir. My further research into this issue has revealed additional evidence in support of the arguments I have already made, as well as two additional reasons why this project should not be allowed to go forth.

First, Verizon's application to build the Berryman cell tower stands in stark contrast to other applications Verizon has made in California to build these fake cell towers. As just one example, I attach an application filed by Verizon in El Dorado County. The differences between the two applications are striking and illustrate that Verizon apparently believes that the citizens of Berkeley are entitled to less protection than the citizens of El Dorado County:

Verizon El Dorado Permit Application	Verizon Berryman Permit Application
<p><b>Allegation of necessity:</b> "This tower will help alleviate an <i>area</i> of poor coverage and inadequate capacity within this service area"</p>	<p><b>Allegation of necessity:</b> "Verizon's objective is to <i>improve</i> coverage in the Berkeley Hills area, especially along Euclid Avenue north of EBMUD's Berryman Reservoir.... Verizon's coverage objectives for this project are to <i>improve</i> service in the area described above, and to <i>offload traffic from other nearby sites</i> that are often at or exceeding capacity.... Verizon coverage in the <i>immediate vicinity</i> of the proposed facility is poor."</p>

<p><b>Consideration of alternatives:</b>          “ALTERNATIVE LOCATIONS          REVIEWED BUT NOT SELECTED:          1310 Large Oak Drive          Landlord not interested in pursuing a lease          with Verizon          4590 Stoney Ridge Rd.          Rejected by Verizon, inadequate coverage          capability.          4540 Stoney Ridge Rd.          Rejected by Verizon, in adequate coverage          capability.          4541 Burnt Oak Dr.          Rejected by Verizon, in adequate coverage          capability.          1310 Large Oak Dr          Landlord not interested in pursuing a lease          with Verizon.          4101 Birds Eye Court          Landlord not interested in pursuing a lease          with Verizon.”</p>	<p><b>Consideration of alternatives:</b> None</p>
<p><b>Location:</b> “The proposed site is well          screened from public view by several large          mature trees and has been selected due to its          location on a hill top, adequately positioned          to provide coverage in the intended service          area.”</p>	<p><b>Location:</b> “This EBMUD parcel          is shaped like a bowl, with the lowest          elevations surrounded by an earthen berm.          Because <i>ground equipment</i> would be installed          at the bottom of this bowl, it would not be          visible from the street.” There is no allegation          that the tower itself will be “well screened          from public view” or that the chosen site is          “on a hill top, adequately positioned to          provide coverage in the intended service          area.”</p>

<p><b>Sharing with other carriers:</b> “This tower has been designed to accommodate future collocation by other carriers....The proposed site has been designed to allow for future co-location opportunities with other carriers. The land lease provides sufficient space for additional service providers and the tower and its foundation are designed for future equipment. This tower will eliminate the need for multiple towers within the same general vicinity as it has been designed to accommodate carriers should they come forward. Additional ground space would need to be leased from the landlord.”</p>	<p><b>Sharing with other carriers:</b> None. See, <i>Vertex Dev., LLC v. Manatee Cty.</i>, 761 F. Supp. 2d 1348, 1362 (M.D. Fla. 2011)(attached to June 24, 2019 letter)(“Aside from aesthetics and property values, the [permit board]also took issue with the lack of evidence to demonstrate why other sites, which are already developed as nonresidential, were not considered. Finding of Fact No. 6 states ‘The public hearing record does not sufficiently document the analysis by the applicant to demonstrate why other sites which are already developed as nonresidential, commercial and industrial uses and which are currently visually impacted by tall structures could not be utilized for the telecommunication tower siting in this instance...’”)</p>
<p><b>Assurance of compliance with county standards:</b> “This project has been carefully designed to comply with all applicable standards.”</p>	<p><b>Assurance of compliance with county standards:</b> None</p>
<p><b>Assurance of compliance with FCC standards:</b> “This project will not interfere with any TV, radio, telephone, satellite, or any other signals. Any interference would be against the Federal Law and would be a violation Verizon Wireless' FCC License. In addition, this project will conform to all FCC standards.”</p>	<p><b>Assurance of compliance with FCC standards:</b> None</p>
<p><b>Assurance of limited use of diesel equipment:</b> “The standby generator will be operated for approximately 15 minutes per week for maintenance purposes, and during power outages and disasters.”</p>	<p><b>Assurance of limited use of diesel equipment:</b> None</p>
<p><b>Hazardous Materials Business Plan:</b> “A Hazardous Material Business Plan will also be submitted upon project completion, and stored on site after construction.”</p>	<p><b>Hazardous Materials Business Plan:</b> None</p>



<p><b>Services provided:</b> “This unmanned facility will provide service to area travelers, residents and businesses 24 hours a day, 7 days a week. This site will also serve as a back up to the existing landline service in the area and will provide improved mobile communications.”</p>	<p><b>Services provided:</b> “Verizon is proposing to provide LTE service from this facility. Please note that LTE is a ]data only’ service, for which the term ‘minutes of use’ has no meaning....While voice telephone service will ultimately be provided from the proposed site, that service is just any other service that uses data, like e-mail or web browsing, or video.”</p>
<p><b>Construction schedule:</b> “The construction of the facility will be in compliance with all local rules and regulations. The typical duration is two months. The crew size will range from two to ten individuals.”</p>	<p><b>Construction schedule:</b> None</p>
<p><b>Assurance of Maintenance:</b> “A technician will visit the site approximately twice a month to check the facility and perform any necessary maintenance.”</p>	<p><b>Assurance of Maintenance:</b> None</p>

Again, the differences in these two permit applications are dramatic and underscore the fatal flaws in Verizon’s Berryman application.

I also call to your attention the important fact that The Tax Relief and Job Creation Act of 2012 would allow Verizon to increase the size of the tower. No one (not even the county) will be able to stop them from further degrading our neighborhood if this ugly and intrusive tower is approved. See, Federal Communications Commission, *Wireless Telecommunications Bureau Offers Guidance on Interpretation of Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012* (attached).

For all of the reasons stated above and in my June 24, 2019 letter I again urge you deny Verizon’s application.

Sincerely,

/s/ Michael N. Burt  
Michael N. Burt  
Attorney at Law

FILE # S15-0004

**EL DORADO COUNTY PLANNING DEPARTMENT**

**APPLICATION FOR Special Use Permit**

ASSESSOR'S PARCEL NO.(s) 105-140-06-10

PROJECT NAME/REQUEST: (Describe proposed use) Arrowbee Lake Verizon Wireless Cellular Tower Project

IF SUBDIVISION/PARCEL MAP: Create \_\_\_\_\_ lots, ranging in size from \_\_\_\_\_ to \_\_\_\_\_ acre(s) / SF

IF ZONE CHANGE: From \_\_\_\_\_ to \_\_\_\_\_ IF GENERAL PLAN AMENDMENT: From \_\_\_\_\_ to \_\_\_\_\_

IF TIME EXTENSION, REVISION, CORRECTION: Original approval date \_\_\_\_\_ Expiration date \_\_\_\_\_

APPLICANT/AGENT Verizon Wireless c/o Epic Wireless c/o Mark Lobaugh

Mailing Address 8700 Auburn Folsom Road

Phone ( 916 ) 203-4067 FAX ( 916 ) 781-5927

PROPERTY OWNER Eric and Elizabeth Johanson

Mailing Address 4131 Birdseye View Ln, Placerville, CA 95667

Phone ( 530 ) 626-6874 FAX ( \_\_\_\_\_ )

LIST ADDITIONAL PROPERTY OWNERS ON SEPARATE SHEET IF APPLICABLE

ENGINEER/ARCHITECT Borges Architectural Group, INC

Mailing Address 1478 Stone Point Dr, Roseville, CA 95661

Phone ( 916 ) 782-7200 FAX ( \_\_\_\_\_ )

LOCATION: The property is located on the North side of Birdseye View Ln  
N/E/W/S street or road

2.18 feet/miles North West of the intersection with Arrowbee Dr and Lotus Rd  
N/E/W/S major street or road

in the Placerville area. PROPERTY SIZE 5.02 acres  
acres / square footage

X Eric W. Johanson Date 2-11-15  
signature of property owner or authorized agent

**FOR OFFICE USE ONLY**

Date 2/12/15 Fee \$ 4,900.00 Receipt # 29238 Rec'd by MOJAVI Census \_\_\_\_\_

Zoning RF-10 GPD LDN Supervisor Dist 4 Sec/Twn/Rng 231 11N / 9E

- ACTION BY:  PLANNING COMMISSION
- ZONING ADMINISTRATOR
- PLANNING DIRECTOR

**ACTION BY BOARD OF SUPERVISORS**

Hearing Date \_\_\_\_\_

Hearing Date \_\_\_\_\_

Approved  Denied (findings and/or conditions attached)

Approved  Denied (findings and/or conditions attached)

APPEAL:  Approved  Denied

Executive Secretary \_\_\_\_\_

Executive Secretary \_\_\_\_\_

Revised 07/02  
**S 15-0004**

RECEIVED  
FEB 12 PM 4:45  
PLANNING DEPARTMENT

**PROJECT SUPPORT STATEMENT**

**DEVELOPMENT APPLICATION FOR VERIZON SITE "ARROWBEE LAKE"**

15 FEB 12 PM 4:4

**APN 105-140-06-10**

RECEIVED  
PLANNING DEPARTMENT

**4131 Birdseye View Ln, PLACERVILLE, CA. 95667**

**INTRODUCTION**

Verizon Wireless is seeking to improve communications service in the El Dorado County area near Lotus Road. Verizon would like to increase coverage and capacity in the area by constructing a new telecommunications facility in to improve service for both current and potential customers. Additionally, this network development will increase public safety within these areas and bring wireless service to areas that currently have poor capacity service.

This tower will help alleviate an area of poor coverage and inadequate capacity within this service area, which causes reoccurring lost calls and ineffective service. This site will relieve inadequate capacity in the area due to high cell phone and broadband usage in the greater Arrowbee Lake area. The proposed location of the tower is set within an unutilized portion of this parcel will be designed to comply with all County of El Dorado's wireless design guidelines. The proposed Verizon Communications facility will be located within a 33'x20' fenced compound including: (1) proposed 16' x 11'6" equipment shelter, a 30kw Diesel generator and a 90' stealth monopine, and is designed to blend in with the existing trees nearby. This tower will accommodate (3) sectors with (2) antennas per sector, (3) remote radio units (RRU's) per sector. This tower has been designed to accommodate future collocation by other carriers. This site is constructed atop a raised steel platform in order to minimize the amount of earth work needed to achieve a flat site. As such, very little soil will need to be graded for this site. This site lies in an area that is well screened from public views by se Rejected by Verizon, in adequate coverage capability. The proposed site is well screened from public view by several large mature trees and has been selected due to its location on a hill top, adequately positioned to provide coverage in the intended service area.

The parcel selected for this communication is owned by Eric and Elizabeth Johanson and totals 5.02 acres. The location for this project is situated approximately 1.77miles from Lotus Road.

This unmanned facility will provide service to area travelers, residents and businesses 24 hours a day, 7 days a week. This site will also serve as a back up to the existing landline service in the area and will provide improved mobile communications, essential to modern day commerce and recreation.

**ALTERNATIVE LOCATIONS REVIEWED BUT NOT SELECTED**

- 1310 Large Oak Drive Landlord not interested in pursuing a lease with Verizon
- 4590 Stoney Ridge Rd. Rejected by Verizon, in adequate coverage capability.
- 4540 Stoney Ridge Rd. Rejected by Verizon, in adequate coverage capability.
- 4541 Burnt Oak Dr. Rejected by Verizon, in adequate coverage capability.
- 1310 Large Oak Dr. Landlord not interested in pursuing a lease with Verizon
- 4101 Birds Eye Court Landlord not interested in pursuing a lease with Verizon

**SAFETY BENEFITS OF IMPROVED WIRELESS SERVICE**

Mobile phone use has become an extremely important system for public safety. Along roads and highways without public call boxes, mobile phones are often the only means for emergency roadside communication. Motorists with disabled vehicles (or worse) can use their phone to call in and request appropriate assistance. With good cellular coverage along important roadways, emergency response is

just a phone call away. Furthermore, as a back up system to traditional landline phone service, mobile phones have proven to be extremely important during natural disasters and other catastrophes.

Verizon has taken the responsibility for back-up service very seriously. As such, Verizon has incurred increased expense to install a standby diesel generator at this facility to insure quality communication for the surrounding community regardless of any disaster or catastrophe.

#### **CONVENIENCE BENEFITS OF IMPROVED WIRELESS SERVICE**

Modern day life has become increasingly dependent on instant communications. Whether it is a parent calling their child, spouse calling a spouse, or general contractor ordering materials to the jobsite, wireless phone service is no longer just a convenience. It has become a way of life and a way of business.

#### **COMPLIANCE WITH COUNTY DEVELOPMENT STANDARDS**

This project has been carefully designed to comply with all applicable standards.

#### **COMPLIANCE WITH FCC STANDARDS**

This project will not interfere with any TV, radio, telephone, satellite, or any other signals. Any interference would be against the Federal Law and would be a violation Verizon Wireless' FCC License. In addition, this project will conform to all FCC standards.

#### **TECHNOLOGY AND CONSUMER SERVICES THE CARRIER WILL PROVIDE ITS CUSTOMERS**

Verizon offers its customers multiple services such as, voice calls, text messaging, mobile email, picture/video messaging, mobile web, navigation, broadband access. Wireless service enhances public safety and emergency communications in the community. In rural areas such as the subject location, cellular phone service can cover much larger geographic areas than traditional landline phone service.

#### **FUTURE COLLOCATION OPPORTUNITIES**

The proposed site has been designed to allow for future co-location opportunities with other carriers. The land lease provides sufficient space for additional service providers and the tower and its foundation are designed for future equipment. This tower will eliminate the need for multiple towers within the same general vicinity as it has been designed to accommodate carriers should they come forward. Additional ground space would need to be leased from the landlord.

#### **LIGHTING**

Unless tower lighting is required by the FAA the only lighting on the facility will be a shielded motion sensor light by the door on the equipment shelter for servicing the equipment.

#### **NOISE**

The standby generator will be operated for approximately 15 minutes per week for maintenance purposes, and during power outages and disasters.

#### **HAZARDOUS MATERIAL**

A Hazardous Material Business Plan will also be submitted upon project completion, and stored on site after construction

#### **ENVIRONMENTAL SETTING**

The site is set within a parcel that is zoned LI and is consistent with application design standards in the area and environment.

#### **MAINTENANCE AND STANDY GENERATOR TESTING**

Verizon installs a standby diesel generator and batteries at many of its cell sites. The generator and batteries serve a vital role in Verizon emergency and disaster preparedness plan. In the event of a power outage, Verizon communications equipment will first transition over to the back-up batteries. The batteries can run the site for a few hours depending upon the demand placed upon the equipment. Should the power outage extend beyond the capacity of the batteries, the back-up generator will automatically start and continue to run the site. This two state back-up plan is an extremely important component of Verizon communications sites. Back-up batteries and generators allow Verizon communications sites to continue providing valuable communications services in the event of a power outage, natural disaster or other emergency.

A standby generator will be installed at the site to ensure quality and consistent coverage in the event of a power outage or disaster. This generator will be run for approximately 15 minutes per week for maintenance purposes, and during power outages and disasters.

A technician will visit the site approximately twice a month to check the facility and perform any necessary maintenance.

#### **CONSTRUCTION SCHEDULE**

The construction of the facility will be in compliance with all local rules and regulations. The typical duration is two months. The crew size will range from two to ten individuals.

Order No.  
Escrow No. 89829JT  
Loan No.

WHEN RECORDED MAIL TO:  
ERIC W. JOHANSON  
ELISABETH A. JOHANSON  
2151 Old Oakland Road, Space 527  
San Jose, CA 95131

043916

15 FEB 12 PM 4:47

EL DONADO COUNTY, CALIF.  
RECORD REQUESTED BY:

First American Title Co.  
AUG 9 9 17 AM '88

JIMMY CARR  
COUNTY RECORDER

RECEIVED  
PLANNING DEPARTMENT

MAIL TAX STATEMENTS TO:  
SAME AS ABOVE

PODS  
FILED

DOCUMENTARY TRANSFER TAX \$ 45.65  
Computed on the consideration or value of property conveyed; OR  
Computed on the consideration or value less debts or encumbrances  
remaining at time of sale.  
First American Title Insurance Co.  
Signature of Grantor or Agent (indemnify use) - Firm Name

APR: 105-140-06

GRANT DEED

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,  
BURL L. CALAHAN and DONNA G. CALAHAN, husband and wife

heraby GRANT(S) to  
ERIC W. JOHANSON and ELISABETH A. JOHANSON, husband and wife as Joint Tenants

the real property in the City of unincorporated area, State of California, described as  
County of El Dorado

A portion of the Northwest quarter of Section 23, Township 11 North, Range  
09 East, N.D.S.M., more particularly described as follows:

Parcel 2, as shown on that certain Parcel Map filed in the office of the  
County Recorder, County of El Dorado, State of California, on May 27, 1980,  
in Book 26 of Parcel Maps, at page 135.

Date: August 3, 1988

STATE OF CALIFORNIA  
COUNTY OF Orange  
On August 3, 1988

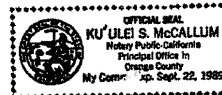
Before me, the undersigned, a Notary Public in and for said State, personally appeared Donna G. Calahan  
and Burl L. Calahan

personally known to me (or proved to me on the basis of satisfactory  
evidence) to be the person(s) whose name(s) appears subscribed to the  
within instrument and acknowledged to me that he/she/they executed  
the same.

WITNESS my hand and official seal.

Shirley McCallum

Donna G. Calahan  
DONNA G. CALAHAN



(This area for official recording)  
BOOK 2893 PAGE 17

END DOCUMENT  
MAIL TAX STATEMENTS AS DIRECTED ABOVE

S 15-0004

FILE # \_\_\_\_\_  
DATE FILED \_\_\_\_\_

**EL DORADO COUNTY PLANNING DEPARTMENT  
ENVIRONMENTAL QUESTIONNAIRE**

15 FEB 12 PM 4:47

RECEIVED  
PLANNING DEPARTMENT

Project Title Arrowbee Lake Verizon Wireless New Build  
Lead Agency El Dorado County Planning Department  
Name of Owner Eric and Elizabeth Johanson Telephone ( 530 ) 626-6874  
Address 4131 Birdseye View Ln, Placerville, CA 95667  
Name of Applicant Verizon Wireless c/o Epic Wireless c/o Mark Lobaugh Telephone ( 916 ) 203 - 4067  
Address 8700 Auburn Folsom Road Suite 400, Granite Bay, CA 95746  
Project Location 4131 Birdseye View Ln, Placerville, CA 95667  
Assessor's Parcel Number(s) 105-140-06-10  
Acreage 5.02 Zoning LI

**Please answer all of the following questions as completely as possible. Subdivisions and other major projects will require a Technical Supplement to be filed together with this form.**

1. Type of project and description: Verizon Wireless proposes to construct a 90' tall Stealth monopine tower which will include three sectors, with two antennas per sector and 3 RRU's per sector. There will also be an Equipment Shelter and 30kVa diesel generator.
2. What is the number of units/parcels proposed? 1

**GEOLOGY AND SOILS**

3. Identify the percentage of land in the following slope categories:  
xx 0 to 10%         11 to 15%         16 to 20%         21 to 29%         over 30%
4. Have you observed any building or soil settlement, landslides, rock falls or avalanches on this property or in the nearby surrounding area? No
5. Could the project affect any existing agriculture uses or result in the loss of agricultural land?  
No

**DRAINAGE AND HYDROLOGY**

6. Is the project located within the flood plain of any stream or river? No  
If so, which one? \_\_\_\_\_
7. What is the distance to the nearest body of water, river, stream or year-round drainage channel?  
0.13 miles    Name of the water body? Arrowbee Lake
8. Will the project result in the direct or indirect discharge of silt or any other particles in noticeable amount into any lakes, rivers or streams? No

**S 15-0004**

Environmental Questionnaire  
Page 2

- 9. Will the project result in the physical alteration of a natural body of water or drainage way?  
If so, in what way? none
- 10. Does the project area contain any wet meadows, marshes or other perennially wet areas?  
No

**VEGETATION AND WILDLIFE**

- 11. What is the predominant vegetative cover on the site (trees, brush, grass, etc.)? Estimate percentage of each: Grass
- 12. How many trees of 6-inch diameter will be removed when this project is implemented?  
0

**FIRE PROTECTION**

- 13. In what structural fire protection district (if any) is the project located? Pilot Hill
- 14. What is the nearest emergency source of water for fire protection purposes (hydrant, pond, etc.)? 0.13 miles
- 15. What is the distance to the nearest fire station? 4.28 miles
- 16. Will the project create any dead-end roads greater than 500 feet in length? No
- 17. Will the project involve the burning of any material including brush, trees and construction materials? No

**NOISE QUALITY**

- 18. Is the project near an industrial area, freeway, major highway or airport? No  
If so, how far? \_\_\_\_\_
- 19. What types of noise would be created by the establishment of this land use, both during and after construction? Generator operates once every month for 15 mins at 36 dB at 23 ft (equivalent to normal conversation at 3 ft.

**AIR QUALITY**

- 20. Would any noticeable amounts of air pollution, such as smoke, dust or odors, be produced by this project? Minimal, AQMD form to be filed. Equipment is exempt due to low HP engine.

**WATER QUALITY**

- 21. Is the proposed water source  public or  private,  treated or  untreated?  
Name the system: N/A



Environmental Questionnaire  
Page 3

22. What is the water use (residential, agricultural, industrial or commercial)? No water use.

**AESTHETICS**

23. Will the project obstruct scenic views from existing residential areas, public lands, public bodies of water or roads? No

**ARCHAEOLOGY/HISTORY**

24. Do you know of any archaeological or historical areas within the boundaries or adjacent to the project? (e.g., Indian burial grounds, gold mines, etc.) None known

**SEWAGE**

25. What is the proposed method of sewage disposal?  septic system  sanitation district  
Name of district: NA

26. Would the project require a change in sewage disposal methods from those currently used in the vicinity? NA

**TRANSPORTATION**

27. Will the project create any traffic problems or change any existing roads, highways or existing traffic patterns? No

28. Will the project reduce or restrict access to public lands, parks or any public facilities?  
No

**GROWTH-INDUCING IMPACTS**

29. Will the project result in the introduction of activities not currently found within the community?  
No

30. Would the project serve to encourage development of presently undeveloped areas, or increases in development intensity of already developed areas (include the introduction of new or expanded public utilities, new industry, commercial facilities or recreation activities)?  
No

31. Will the project require the extension of existing public utility lines? No  
If so, identify and give distances: \_\_\_\_\_

Environmental Questionnaire  
Page 4

**GENERAL**

- 32. Does the project involve lands currently protected under the Williamson Act or an Open Space Agreement? No
- 33. Will the project involve the application, use or disposal of potentially hazardous materials, including pesticides, herbicides, other toxic substances or radioactive material? Diesel fuel for generator.
- 34. Will the proposed project result in the removal of a natural resource for commercial purposes (including rock, sand, gravel, trees, minerals or top soil)? No
- 35. Could the project create new, or aggravate existing health problems (including, but not limited to, flies, mosquitos, rodents and other disease vectors)? No
- 36. Will the project displace any community residents? No

**DISCUSS ANY YES ANSWERS TO THE PREVIOUS QUESTIONS** (attached additional sheets if necessary)

Diesel generator included, see drawings for specifications.

**MITIGATION MEASURES** (attached additional sheets if necessary)

Proposed mitigation measures for any of the above questions where there will be an adverse impact:

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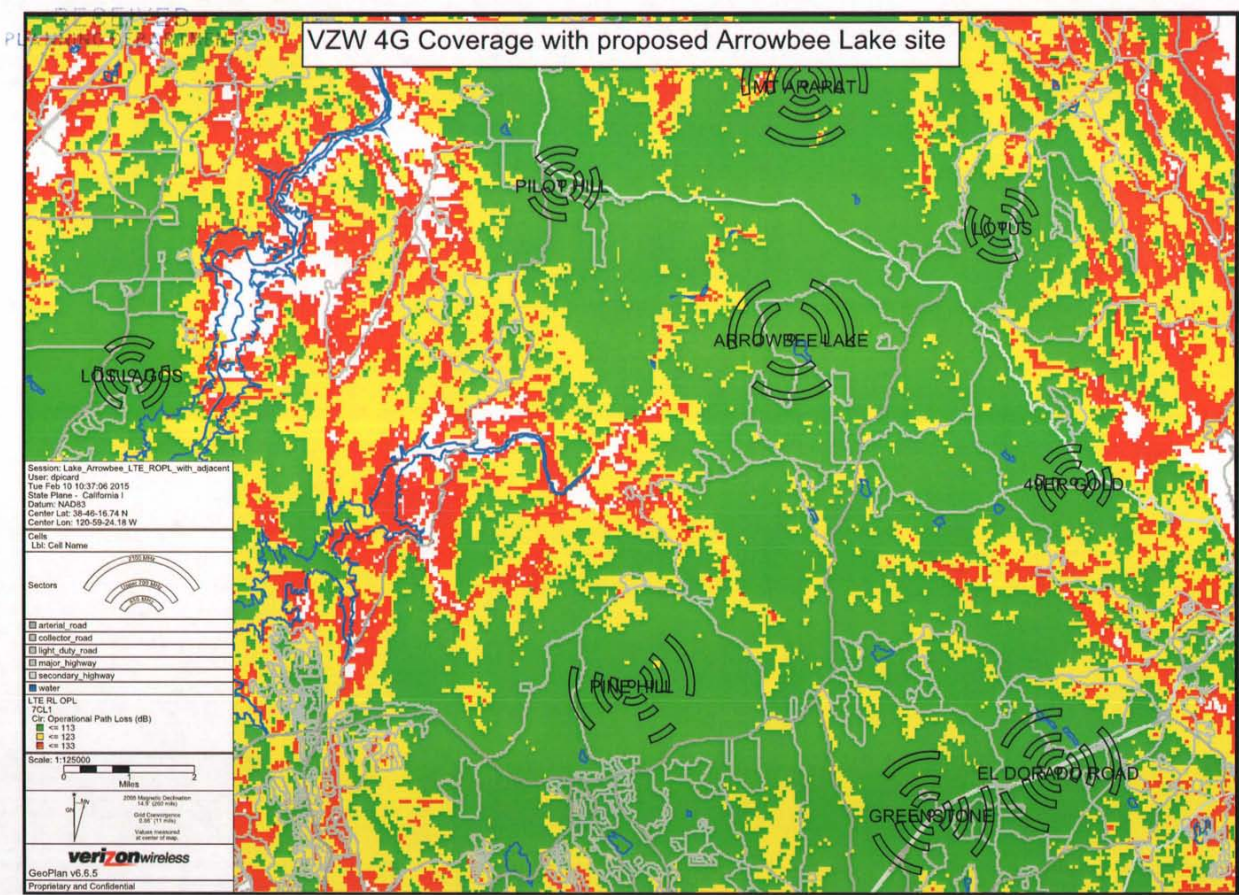
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Form completed by: \_\_\_\_\_ Date: \_\_\_\_\_ (revised 03/99)

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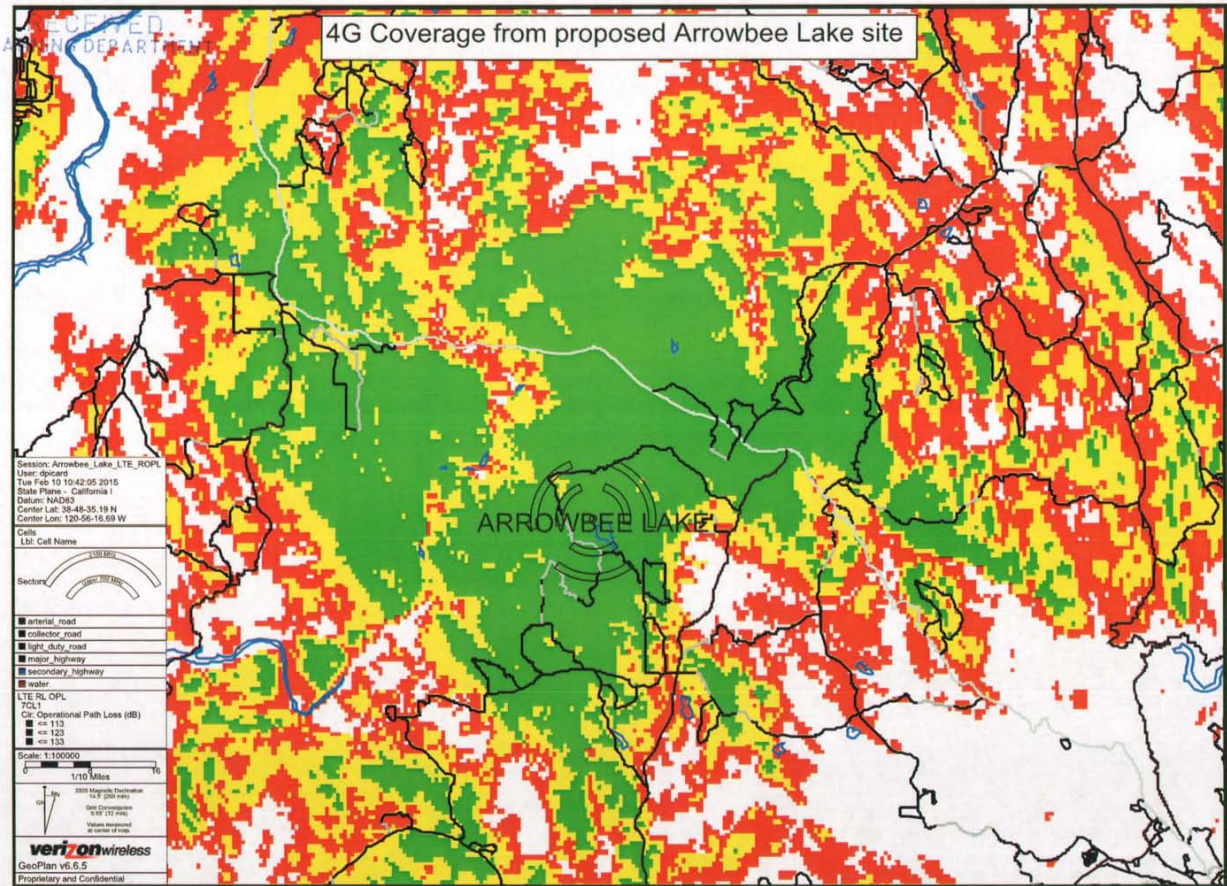


S 15-0004

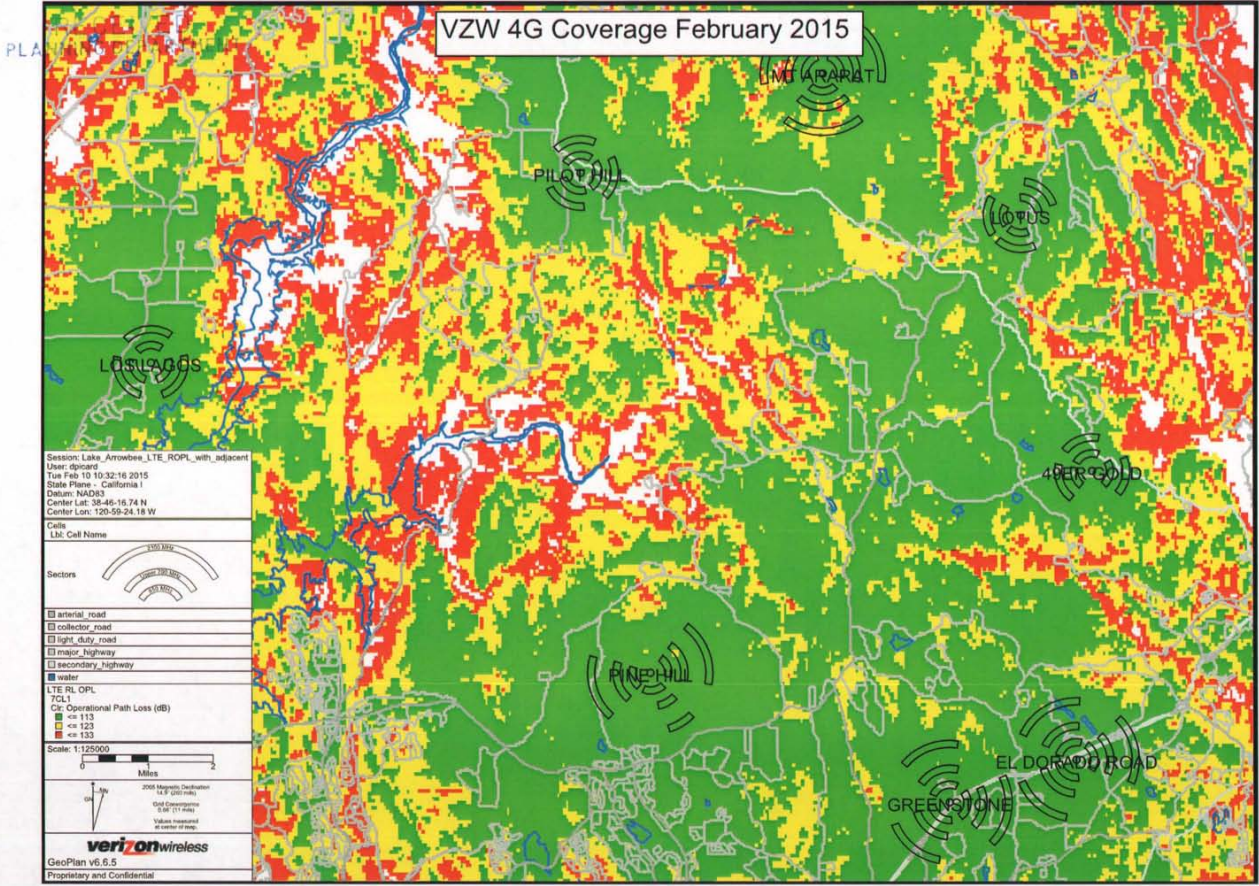
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PLANNING DEPARTMENT

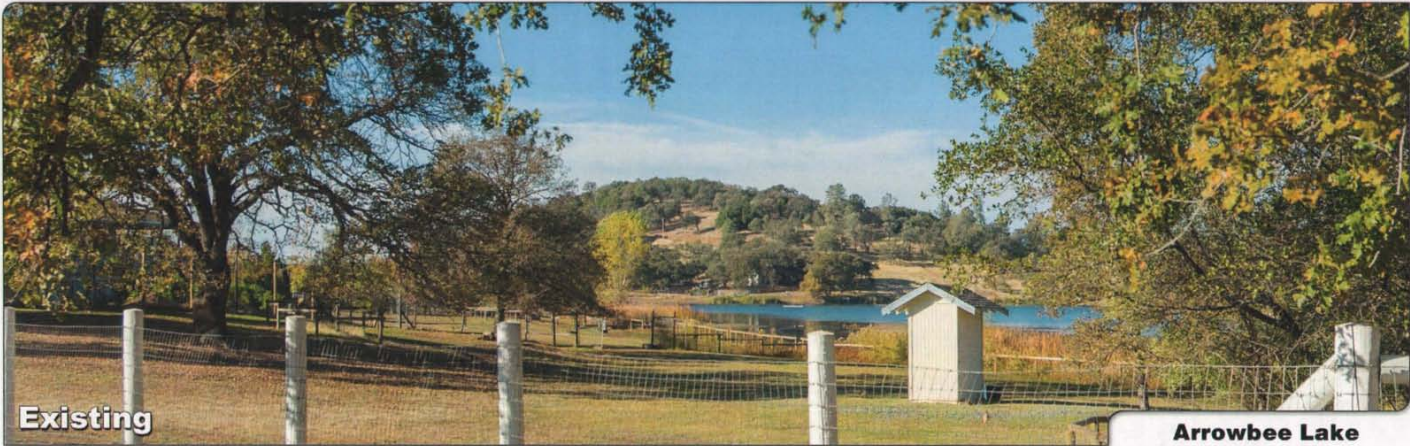
4G Coverage from proposed Arrowbee Lake site



15 FEB 12 PH 4:46



Version Date: October 01, 2014

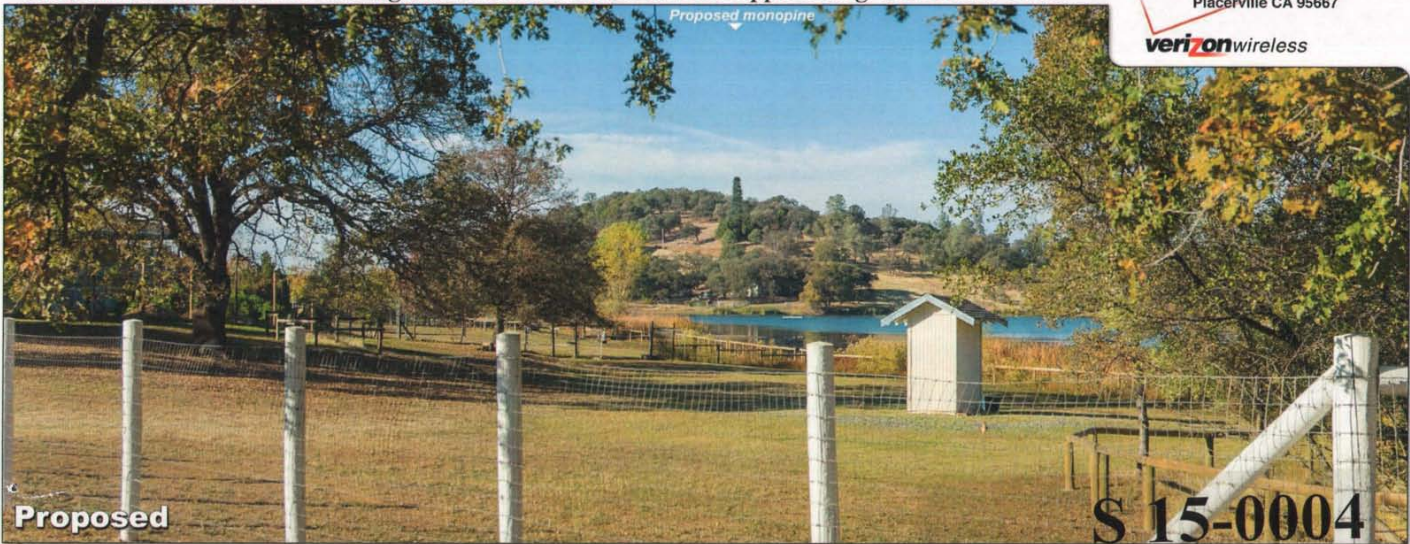


**Existing**

Photosimulation of the view looking northwest from Shoreline Drive approaching Wild Flower Lane.

**Arrowbee Lake**

4131 Birdseye View Lane  
Placerville CA 95667

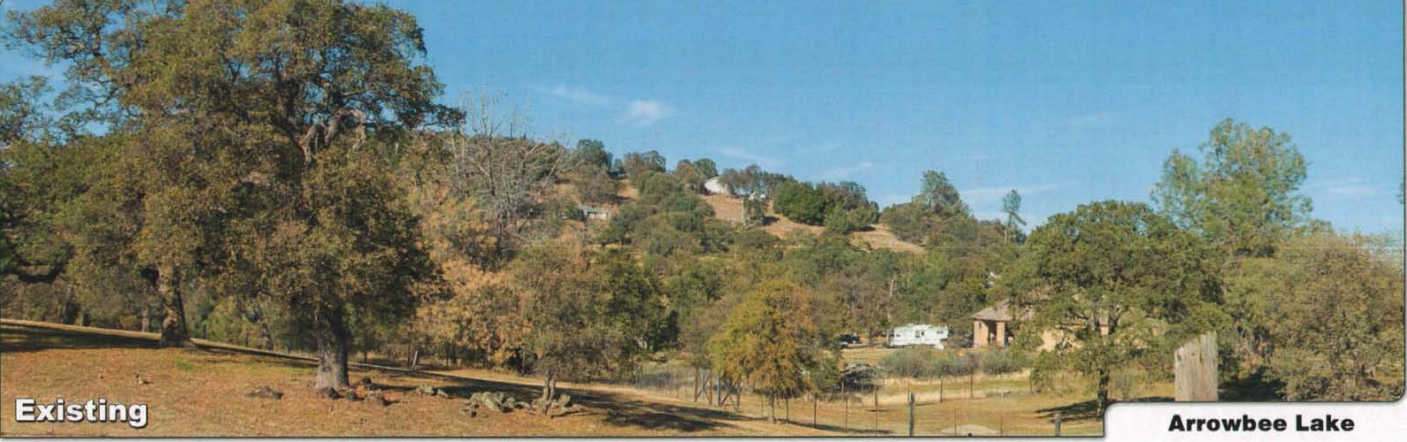


**Proposed**

**S 15-0004**

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Version Date: October 01, 2014



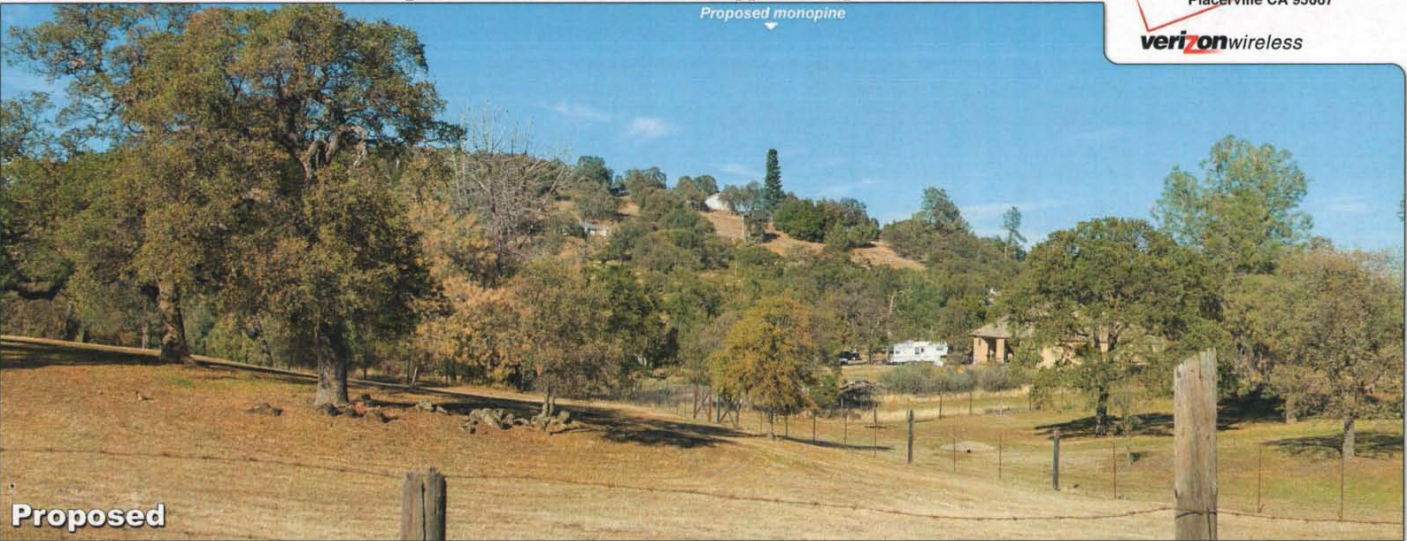
**Existing**

Photosimulation of the view looking north from Trail's End Road approaching Trails End Court.

**Arrowbee Lake**  
4131 Birdseye View Lane  
Placerville CA 95667



*Proposed monopine*



**Proposed**

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Version Date: October 01, 2014



**Existing**

Photosimulation of the view looking north-northwest from Shoreline Drive approaching Trails End Drive.

*Proposed monopine*

**Arrowbee Lake**  
 4131 Birdseye View Lane  
 Placerville CA 95667




**Proposed**

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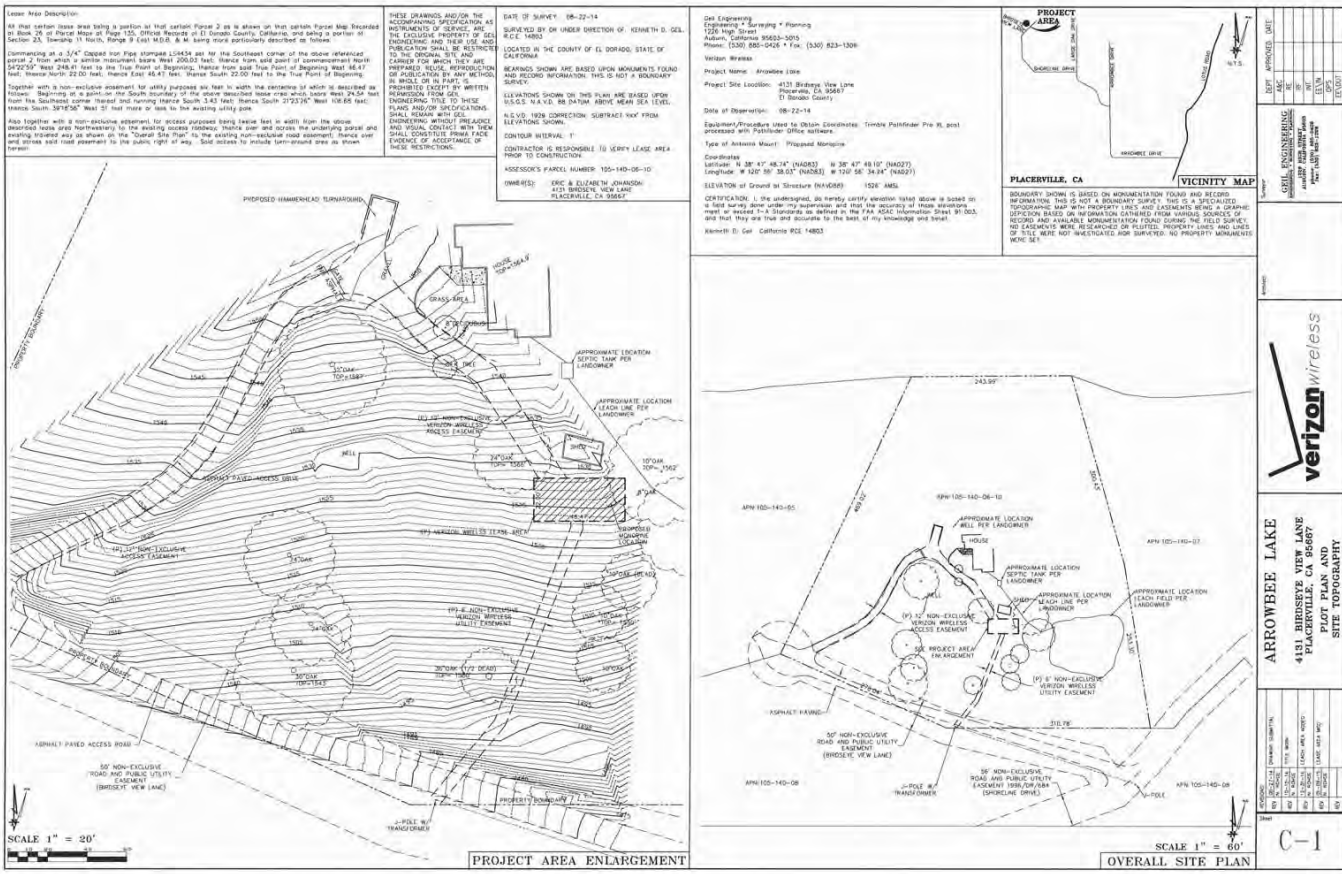




SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

ZAB 06-27-19

Page 76 of 124

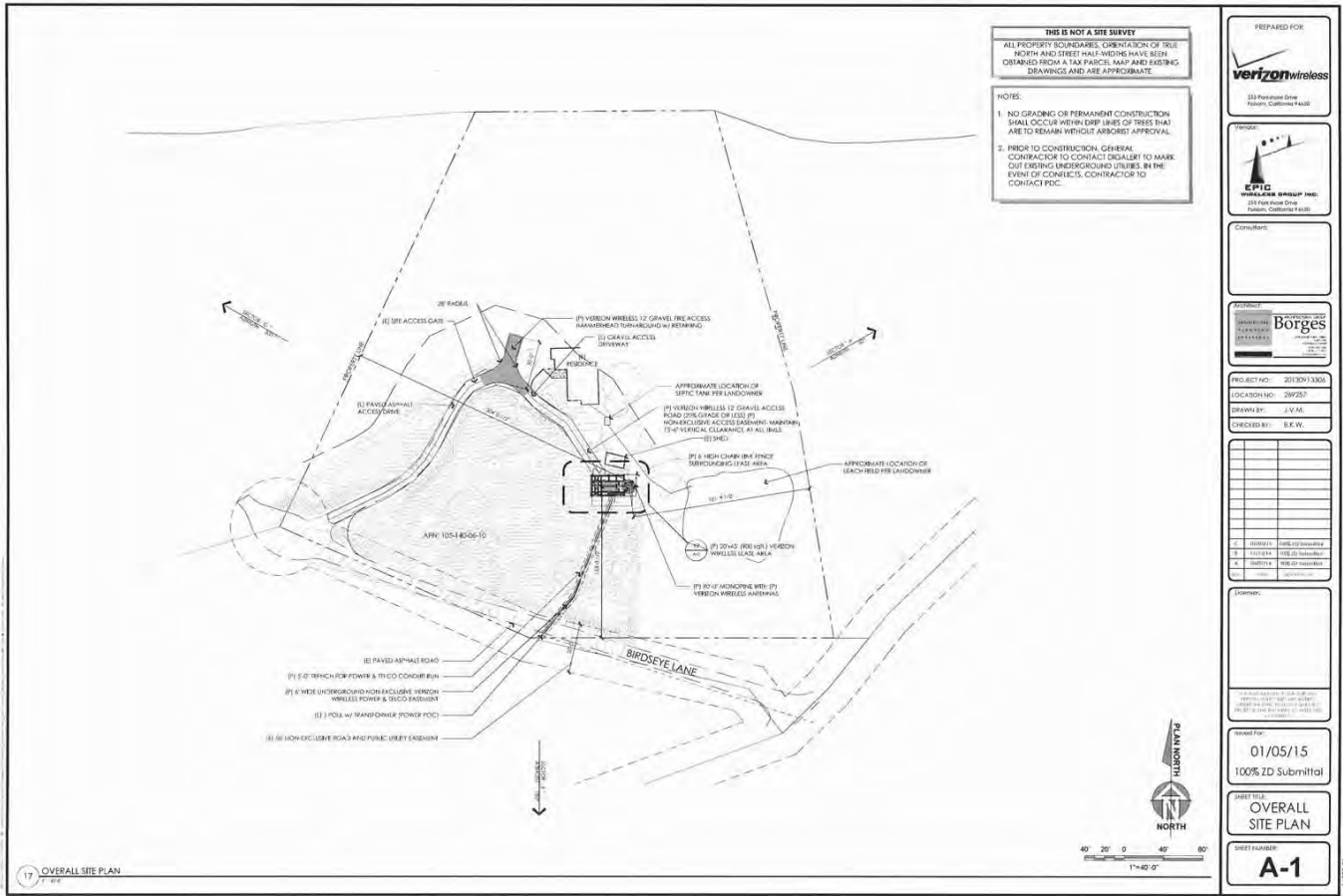


ARROWBEE LAKE  
4151 BRUSSETTE VIEW LANE  
PLACERVILLE, CA 95687  
RIGHT PLAIN ANTS  
SITE TOPOGRAPHY

NO.	DATE	DESCRIPTION	BY	CHKD.
1	08/22/14	ISSUED FOR PERMITTING	GE	GE
2	08/22/14	ISSUED FOR PERMITTING	GE	GE
3	08/22/14	ISSUED FOR PERMITTING	GE	GE
4	08/22/14	ISSUED FOR PERMITTING	GE	GE
5	08/22/14	ISSUED FOR PERMITTING	GE	GE
6	08/22/14	ISSUED FOR PERMITTING	GE	GE
7	08/22/14	ISSUED FOR PERMITTING	GE	GE
8	08/22/14	ISSUED FOR PERMITTING	GE	GE
9	08/22/14	ISSUED FOR PERMITTING	GE	GE
10	08/22/14	ISSUED FOR PERMITTING	GE	GE

C-1

SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE  
ZAB 06-27-19  
Page 77 of 124



**THIS IS NOT A SITE SURVEY**  
ALL PROPERTY BOUNDARIES, ORIENTATION OF TRUE NORTH AND DEED PLAT NUMBERS HAVE BEEN OBTAINED FROM A TAX PARCEL MAP AND EXISTING DRAWINGS AND ARE APPROXIMATE.

**NOTES:**

1. NO GRADING OR PERMANENT CONSTRUCTION SHALL OCCUR WITHIN 50 FT LINES OF TREES THAT ARE TO REMAIN WITHOUT AROBERT APPROVAL.
2. PRIOR TO CONSTRUCTION, GENERAL CONTRACTOR TO CONTACT CICALERT TO MARK OUT EXISTING UNDERGROUND UTILITIES. IN THE EVENT OF CONFLICTS, CONTRACTOR TO CONTACT PDC.

PREPARED FOR:  
**verizon wireless**  
333 Piedmont Drive  
Folsom, California 95630

Vendor:  
**EPIC**  
WIRELESS SERVICE PLAN  
25 Park Avenue Drive  
Folsom, California 95630

Consultant:  
**BORGES**  
25 Park Avenue Drive  
Folsom, California 95630

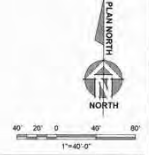
PROJECT NO: 2019013306  
LOCATION NO: 097257  
DRAWN BY: J.V.M.  
CHECKED BY: S.K.W.

NO.	DATE	DESCRIPTION
1	01/05/15	100% ZD Submittal

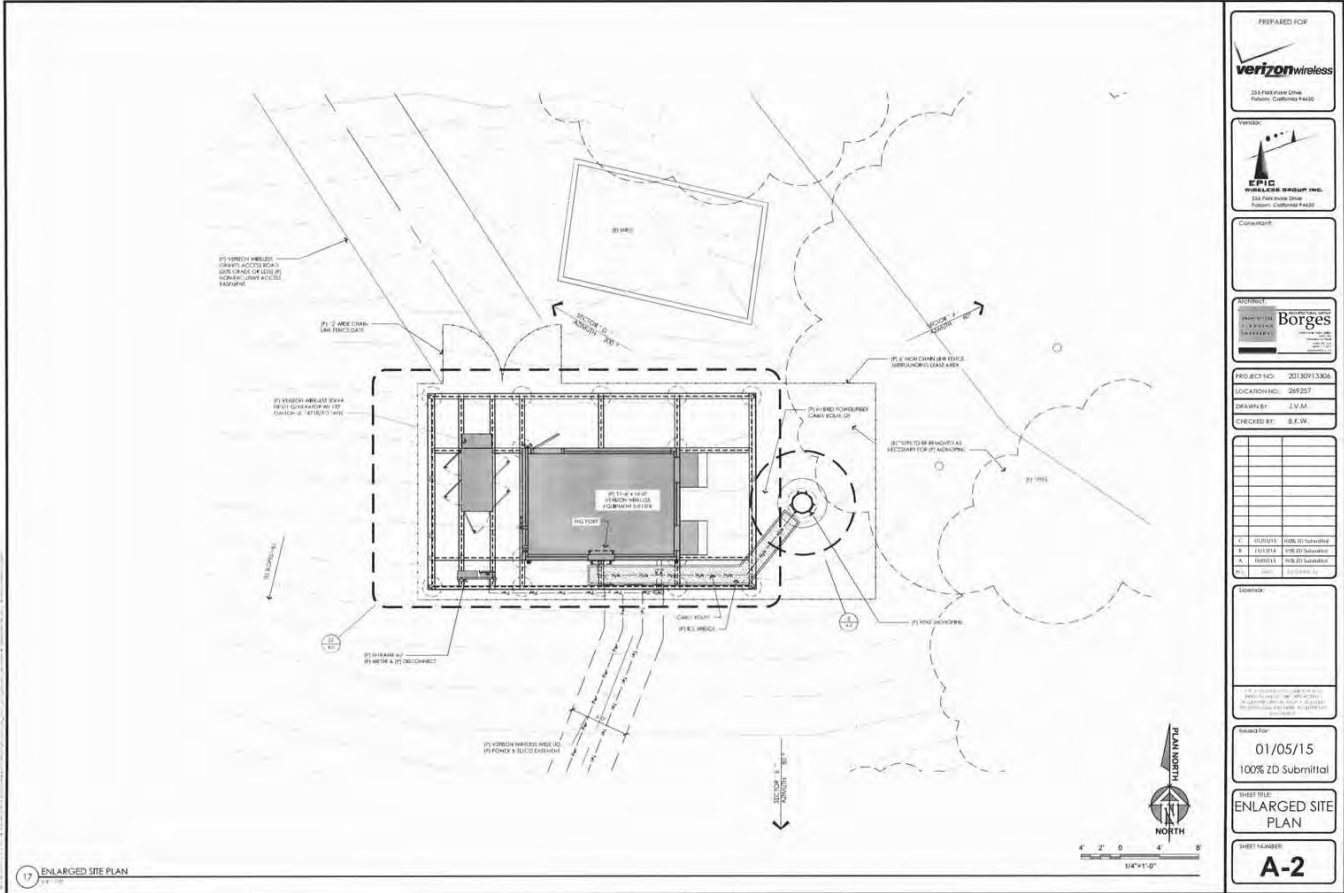
Sheet Title:  
**OVERALL SITE PLAN**

Sheet Number:  
**A-1**

17 OVERALL SITE PLAN



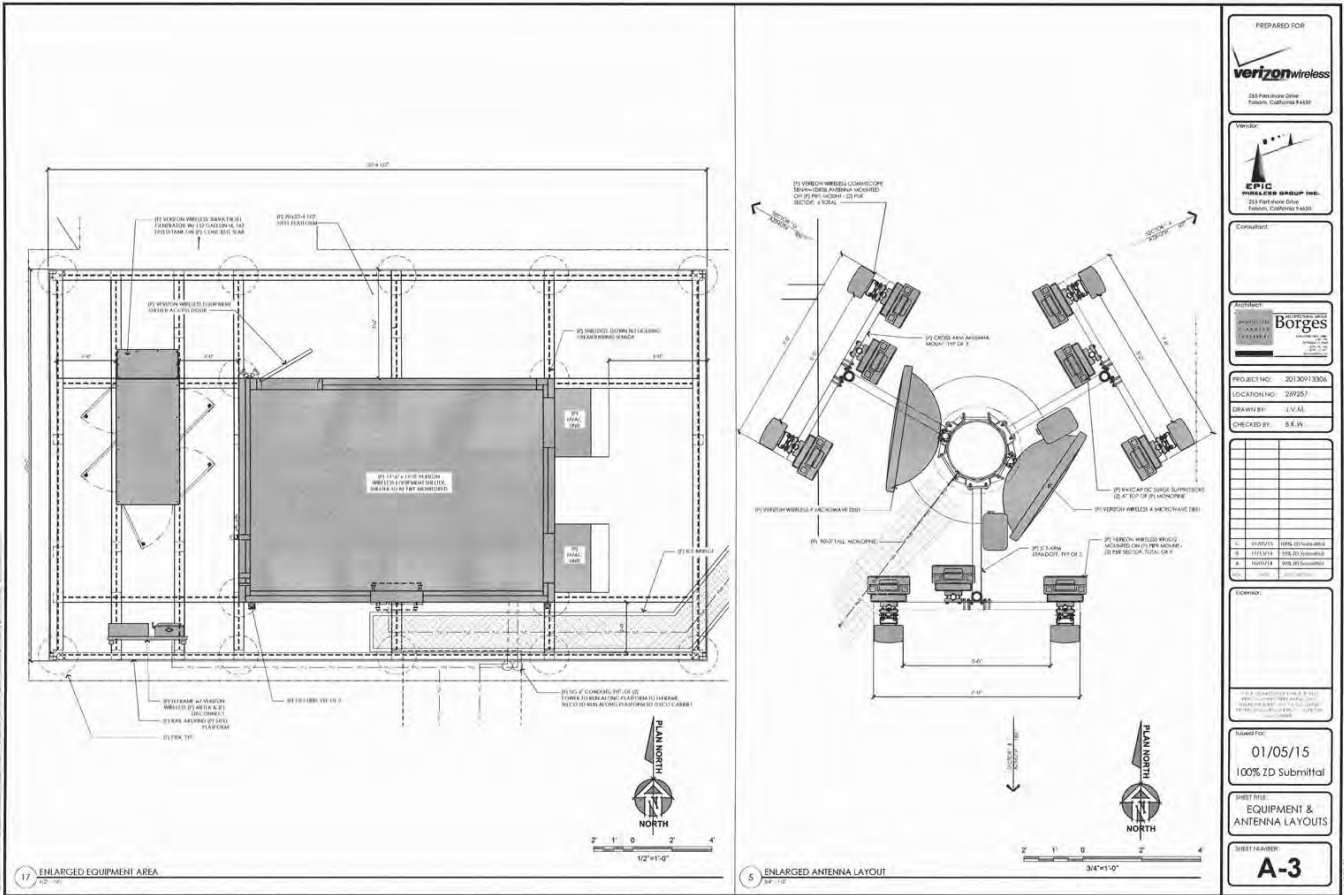
SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE  
ZAB 06-27-19  
Page 78 of 124



SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

ZAB 06-27-19

Page 79 of 124

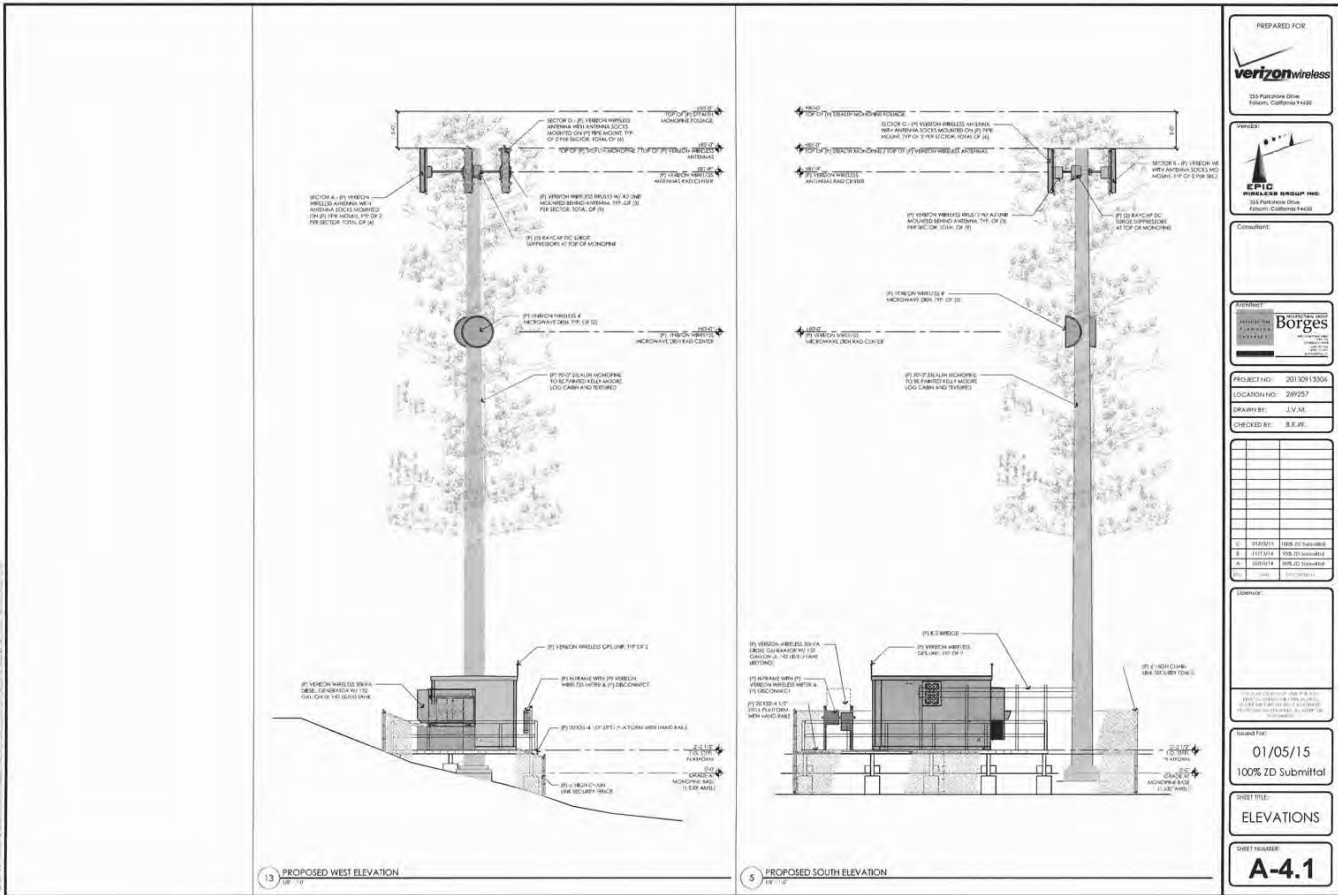


PREPARED FOR	<b>verizon</b> wireless
VERISOR	<b>EPIC</b> TELECOM GROUP, INC.
PROJECT	<b>Borges</b>
PROJECT NO.	2013013305
LOCATION NO.	209257
DRAWN BY	J. V. AL
CHECKED BY	S. K. J. W.
DATE	01/05/15
ISSUE NO.	100% ZD Submittal
SHEET TITLE	EQUIPMENT & ANTENNA LAYOUTS
SHEET NUMBER	<b>A-3</b>

SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

ZAB 06-27-19

Page 80 of 124



PREPARED FOR

225 Parkside Drive  
Folsom, California 95630

PROJECT

324 Parkside Drive  
Folsom, California 95630

CONTRACT

DESIGNER

PROJECT NO: 2013013004  
LOCATION NO: 20257  
DRAWN BY: J.V.M.  
CHECKED BY: R.K.W.

1	2/20/15	100% TO SUBMIT
2	3/17/15	100% TO SUBMIT
3	5/27/15	100% TO SUBMIT
4	6/23/15	100% TO SUBMIT
5	7/20/15	100% TO SUBMIT
6	8/17/15	100% TO SUBMIT
7	9/14/15	100% TO SUBMIT
8	10/12/15	100% TO SUBMIT
9	11/9/15	100% TO SUBMIT
10	12/7/15	100% TO SUBMIT

ISSUED FOR:

01/05/15  
100% TO SUBMIT

SHEET TITLE:

ELEVATIONS

SHEET NUMBER:

**A-4.1**







**Bard** THE WALL-MOUNT™ STEP CAPACITY AIR CONDITIONERS  
Refrigerant Part Load Value (PLV) Efficiency up To 1.8 EER@117

**W435 - W435 Right Side Control Panel**  
#10-20 - #16.50 LAR 5000 Control Panel  
2 to 3 Ton (25,000 to 36,000 Btu/h)

**Green Refrigerant R-410A**



The Bard W435™ is the world's most energy efficient air conditioner...  
 • 1.8 EER@117 (EER) PLV Efficiency  
 • 1.8 EER@117 (EER) PLV Efficiency  
 • 1.8 EER@117 (EER) PLV Efficiency

**Key Features:**  
 • 1.8 EER@117 (EER) PLV Efficiency  
 • 1.8 EER@117 (EER) PLV Efficiency  
 • 1.8 EER@117 (EER) PLV Efficiency

**Key Features:**  
 • 1.8 EER@117 (EER) PLV Efficiency  
 • 1.8 EER@117 (EER) PLV Efficiency  
 • 1.8 EER@117 (EER) PLV Efficiency

**Comparison of Product Features**

Model	W435	W435	W435	W435
Capacity (max/PLV)	36,000	36,000	36,000	36,000
PLV	1.8	1.8	1.8	1.8
Energy Efficiency Ratio (EER)	11.7	11.7	11.7	11.7
SEER	13.8	13.8	13.8	13.8
W435 (PLV)	1.8	1.8	1.8	1.8
W435 (EER)	11.7	11.7	11.7	11.7
W435 (SEER)	13.8	13.8	13.8	13.8

**Comparison of Product Features**

Model	W435	W435	W435	W435
Capacity (max/PLV)	36,000	36,000	36,000	36,000
PLV	1.8	1.8	1.8	1.8
Energy Efficiency Ratio (EER)	11.7	11.7	11.7	11.7
SEER	13.8	13.8	13.8	13.8
W435 (PLV)	1.8	1.8	1.8	1.8
W435 (EER)	11.7	11.7	11.7	11.7
W435 (SEER)	13.8	13.8	13.8	13.8

**Comparison of Product Features**

Model	W435	W435	W435	W435
Capacity (max/PLV)	36,000	36,000	36,000	36,000
PLV	1.8	1.8	1.8	1.8
Energy Efficiency Ratio (EER)	11.7	11.7	11.7	11.7
SEER	13.8	13.8	13.8	13.8
W435 (PLV)	1.8	1.8	1.8	1.8
W435 (EER)	11.7	11.7	11.7	11.7
W435 (SEER)	13.8	13.8	13.8	13.8

PREPARED FOR

**verizon**wireless

25 Park Ave. Suite 2000  
New York, NY 10022

**EPIC**  
ENERGY SERVICES INC.

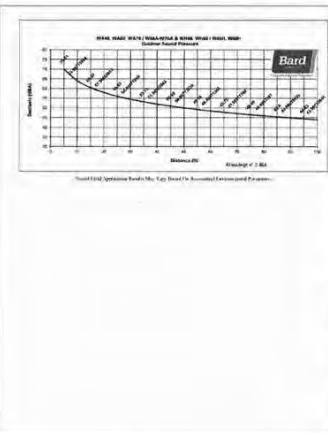
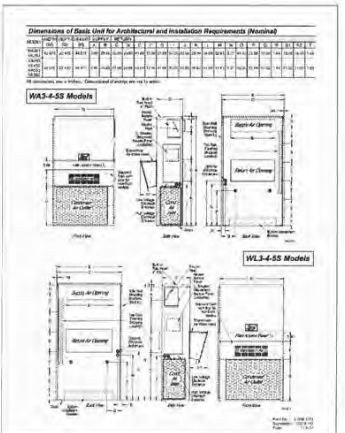
25 Park Ave. Suite 2000  
New York, NY 10022

**Borges**

PROJECT NO.: 2013011305  
LOCATION NO.: 30027  
DRAWN BY: J.V.M.  
CHECKED BY: B.Z.W.

**W435 Sound Data Matrix (dB @ 10 feet)**

Model	W435	W435	W435	W435
Capacity (max/PLV)	36,000	36,000	36,000	36,000
PLV	1.8	1.8	1.8	1.8
Energy Efficiency Ratio (EER)	11.7	11.7	11.7	11.7
SEER	13.8	13.8	13.8	13.8
W435 (PLV)	1.8	1.8	1.8	1.8
W435 (EER)	11.7	11.7	11.7	11.7
W435 (SEER)	13.8	13.8	13.8	13.8



01/05/15  
100% 2D Submittal

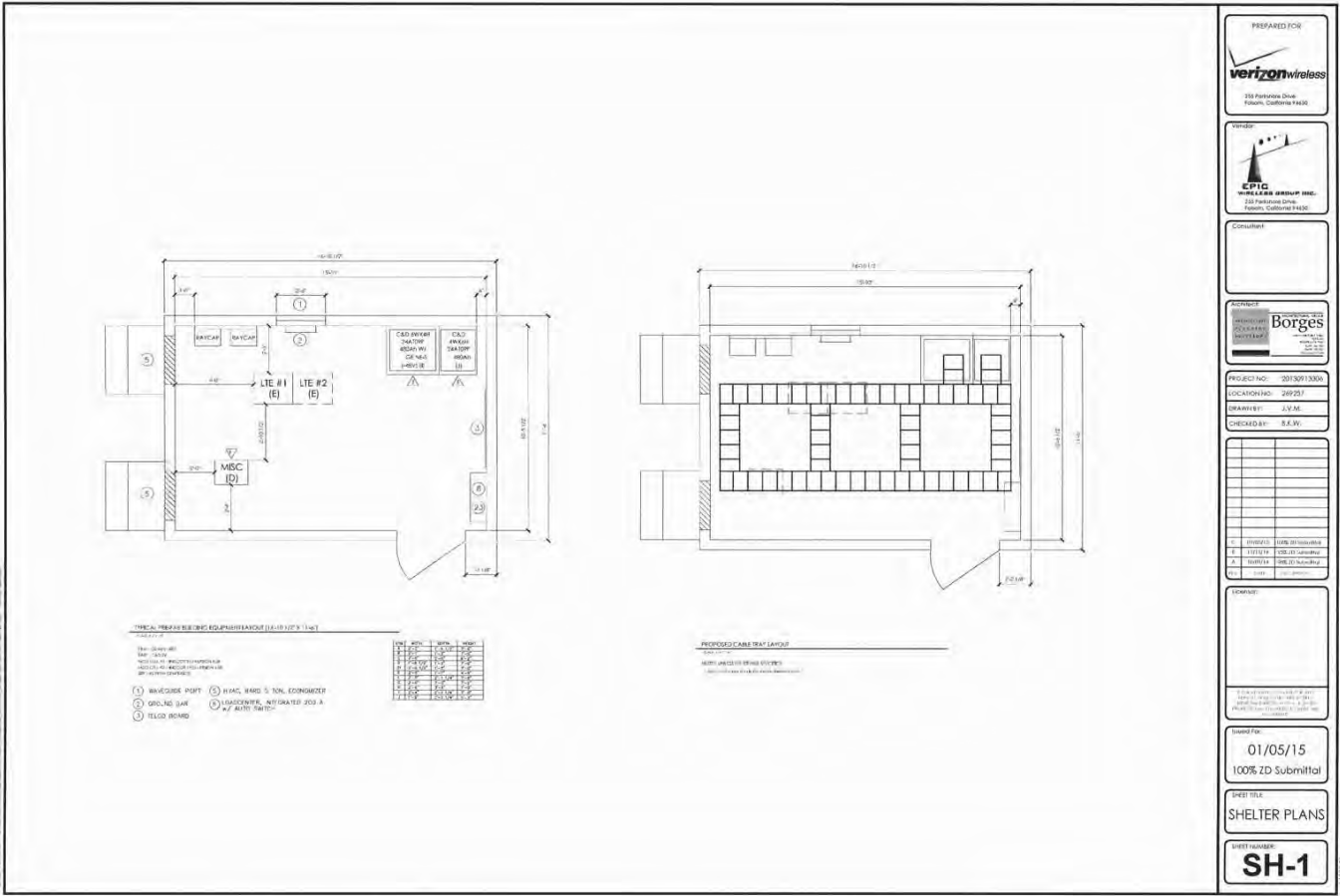
HVAC UNIT SPECIFICATION

**A-5.2**

SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

ZAB 06-27-19

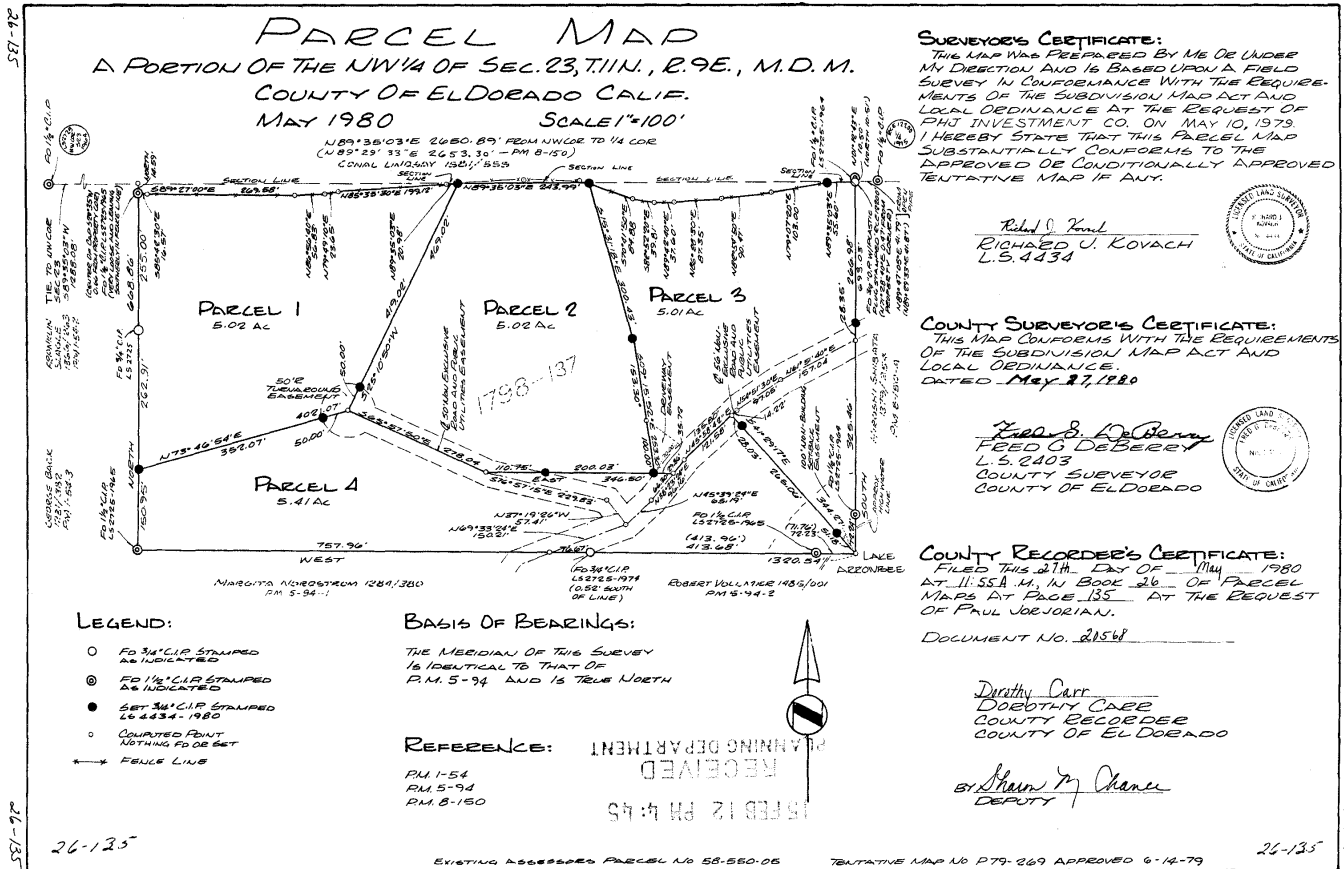
Page 84 of 124



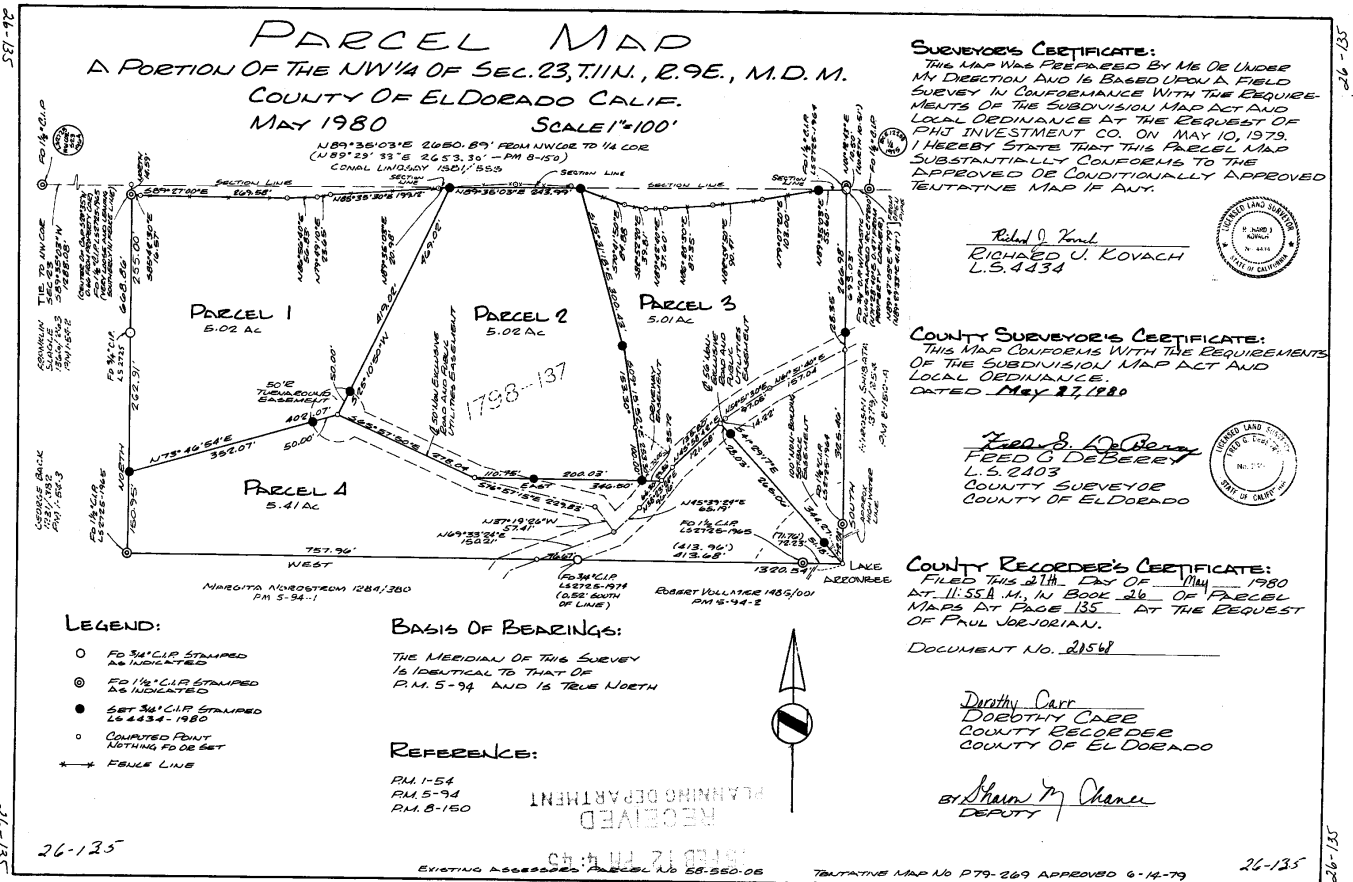
SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

ZAB 06-27-19

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S 15-0004



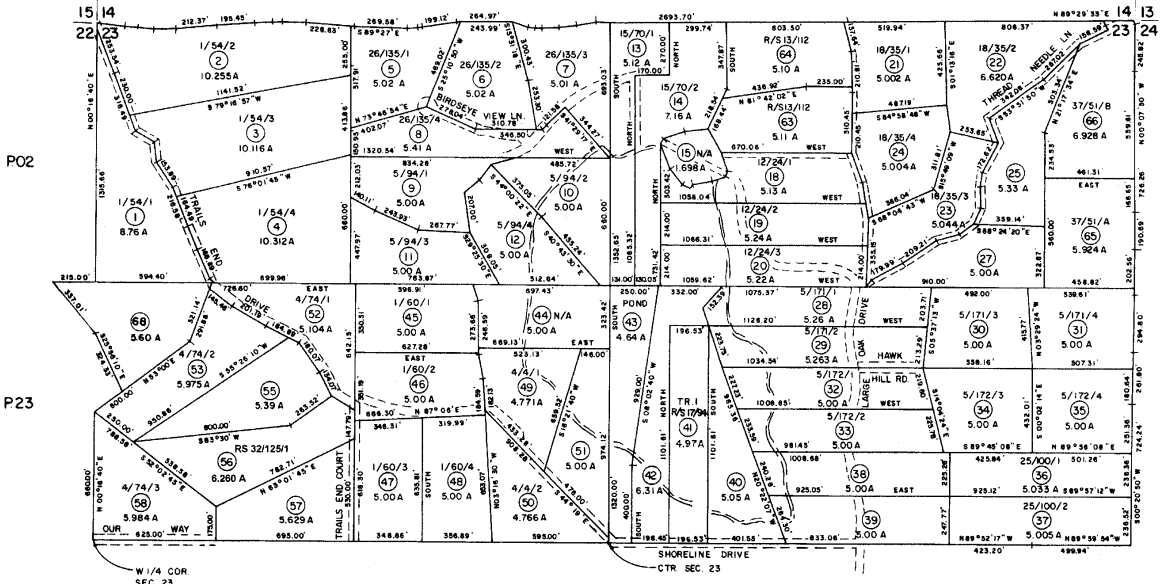
POR. SEC. 23, T.11N, R.9E, M.D.M.

Tax Area Code

105:14

15 FEB 12 PM 4:45  
RECEIVED  
PLANNING DEPARTMENT

P02



P16

REV. 4/28/2011 Assessor's Map Bk. 105 - Pg. 14

THIS MAP IS NOT A SURVEY; It is prepared by the El Dorado Co. Assessor's office for assessment purposes only.

NOTE - Assessor's Block Numbers Shown in Ellipses  
Assessor's Parcel Numbers Shown in Circles



# PUBLIC NOTICE

Federal Communications Commission  
445 12<sup>th</sup> St., S.W.  
Washington, D.C. 20554

News Media Information 202 / 418-0500  
Internet: <http://www.fcc.gov>  
TTY: 1-888-835-5322

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## WIRELESS TELECOMMUNICATIONS BUREAU OFFERS GUIDANCE ON INTERPRETATION OF SECTION 6409(a) OF THE MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012

DA 12-2047  
January 25, 2013

On February 22, 2012, the Middle Class Tax Relief and Job Creation Act of 2012 (Tax Act)<sup>1</sup> became law. Section 6409(a) of the Tax Act provides that a state or local government “may not deny, and shall approve” any request for collocation, removal, or replacement of transmission equipment on an existing wireless tower or base station, provided this action does not substantially change the physical dimensions of the tower or base station.<sup>2</sup> The full text of Section 6409(a) is reproduced in the Appendix to this Public Notice.

To date, the Commission has not received any formal petition to interpret or apply the provisions of Section 6409(a). We also are unaware of any judicial precedent interpreting or applying its terms. The Wireless Telecommunications Bureau has, however, received informal inquiries from service providers, facilities owners, and state and local governments seeking guidance as to how Section 6409(a) should be applied. In order to assist interested parties, this Public Notice summarizes the Bureau’s understanding of Section 6409(a) in response to several of the most frequently asked questions.<sup>3</sup>

### What does it mean to “substantially change the physical dimensions” of a tower or base station?

Section 6409(a) does not define what constitutes a “substantial[] change” in the dimensions of a tower or base station. In a similar context, under the *Nationwide Collocation Agreement* with the Advisory Council on Historic Preservation and the National Conference of State Historic Preservation Officers, the Commission has applied a four-prong test to determine whether a collocation will effect a “substantial increase in the size of [a] tower.”<sup>4</sup> A proposed collocation that does not involve a substantial increase in

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<sup>1</sup> Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. 112-96, H.R. 3630, 126 Stat. 156 (enacted Feb. 22, 2012) (Tax Act).

<sup>2</sup> *Id.*, § 6409(a).

<sup>3</sup> Although we offer this interpretive guidance to assist parties in understanding their obligations under Section 6409(a), *see, e.g., Truckers United for Safety v. Federal Highway Administration*, 139 F.3d 934 (D.C.Cir. 1998), the Commission remains free to exercise its discretion to interpret Section 6409(a) either by exercising its rulemaking authority or through adjudication. With two exceptions not relevant here, the Tax Act expressly grants the Commission authority to “implement and enforce” this and other provisions of Title VI of that Act “as if this title is a part of the Communications Act of 1934 (47 U.S.C. 151 et seq.)” Tax Act § 6003.

<sup>4</sup> 47 C.F.R. Part 1, App. B, *Nationwide Programmatic Agreement for the Collocation of Wireless Antennas*, § I.C (*Nationwide Collocation Agreement*).

size is ordinarily excluded from the Commission's required historic preservation review under Section 106 of the National Historic Preservation Act (NHPA).<sup>5</sup> The Commission later adopted the same definition in the *2009 Declaratory Ruling* to determine whether an application will be treated as a collocation when applying Section 332(c)(7) of the Communications Act of 1934.<sup>6</sup> The Commission has also applied a similar definition to determine whether a modification of an existing registered tower requires public notice for purposes of environmental review.<sup>7</sup>

Under Section I.C of the *Nationwide Collocation Agreement*, a "substantial increase in the size of the tower" occurs if:

- 1) [t]he mounting of the proposed antenna on the tower would increase the existing height of the tower by more than 10%, or by the height of one additional antenna array with separation from the nearest existing antenna not to exceed twenty feet, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this paragraph if necessary to avoid interference with existing antennas; or
- 2) [t]he mounting of the proposed antenna would involve the installation of more than the standard number of new equipment cabinets for the technology involved, not to exceed four, or more than one new equipment shelter; or
- 3) [t]he mounting of the proposed antenna would involve adding an appurtenance to the body of the tower that would protrude from the edge of the tower more than twenty feet, or more than the width of the tower structure at the level of the appurtenance, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this paragraph if necessary to shelter the antenna from inclement weather or to connect the antenna to the tower via cable; or
- 4) [t]he mounting of the proposed antenna would involve excavation outside the current tower site, defined as the current boundaries of the leased or owned property surrounding the tower and any access or utility easements currently related to the site.

Although Congress did not adopt the Commission's terminology of "substantial increase in size" in Section 6409(a), we believe that the policy reasons for excluding from Section 6409(a) collocations that substantially change the physical dimensions of a structure are closely analogous to those that animated the Commission in the *Nationwide Collocation Agreement* and subsequent proceedings. In light of the Commission's prior findings, the Bureau believes it is appropriate to look to the existing definition of "substantial increase in size" to determine whether the collocation, removal, or replacement of equipment

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<sup>5</sup> See 16 U.S.C. § 470f, *see also* 47 C.F.R. § 1.1307(a)(4) (requiring applicants to determine whether proposed facilities may affect properties that are listed, or are eligible for listing, in the National Register of Historic Places).

<sup>6</sup> See Petition for Declaratory Ruling to Clarify Provisions of Section 332(c)(7)(B) to Ensure Timely Siting Review and to Preempt Under Section 253 State and Local Ordinances that Classify All Wireless Siting Proposals as Requiring a Variance, WT Docket No. 08-165, *Declaratory Ruling*, 24 FCC Rcd. 13994, 14012, para. 46 & n.146 (2009) (*2009 Declaratory Ruling*), *recon. denied*, 25 FCC Rcd. 11157 (2010), *pet. for review denied sub nom. City of Arlington, Texas v. FCC*, 668 F.3d 229 (5<sup>th</sup> Cir.), *cert. granted*, 113 S.Ct. 524 (2012); 47 U.S.C. § 332(c)(7).

<sup>7</sup> See 47 C.F.R. § 17.4(c)(1)(B); National Environmental Policy Act Compliance for Proposed Tower Registrations, WT Docket No. 08-61, *Order on Remand*, 26 FCC Rcd. 16700, 16720-21, para. 53 (2011).

on a wireless tower or base station substantially changes the physical dimensions of the underlying structure within the meaning of Section 6409(a).

#### **What is a “wireless tower or base station”?**

A “tower” is defined in the *Nationwide Collocation Agreement* as “any structure built for the sole or primary purpose of supporting FCC-licensed antennas and their associated facilities.”<sup>8</sup> The Commission has described a “base station” as consisting of “radio transceivers, antennas, coaxial cable, a regular and backup power supply, and other associated electronics.”<sup>9</sup> Section 6409(a) applies to the collocation, removal, or replacement of equipment on a wireless tower or base station. In this context, we believe it is reasonable to interpret a “base station” to include a structure that currently supports or houses an antenna, transceiver, or other associated equipment that constitutes part of a base station.<sup>10</sup> Moreover, given the absence of any limiting statutory language, we believe a “base station” encompasses such equipment in any technological configuration, including distributed antenna systems and small cells.

Section 6409(a) by its terms applies to any “wireless” tower or base station. By contrast, the scope of Section 332(c)(7) extends only to facilities used for “personal wireless services” as defined in that section.<sup>11</sup> Given Congress’s decision not to use the pre-existing definition from another statutory provision relating to wireless siting, we believe the scope of a “wireless” tower or base station under Section 6409(a) is not intended to be limited to facilities that support “personal wireless services” under Section 332(c)(7).

#### **May a state or local government require an application for an action covered under Section 6409(a)?**

Section 6409(a) states that a state or local government “may not deny, and shall approve, any eligible facilities request. . . .” It does not say that a state or local government may not require an application to be filed. The provision that a state or local government must approve and may not deny a request to take a covered action, in the Bureau’s view, implies that the relevant government entity may require the filing of an application for administrative approval.

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<sup>8</sup> See *Nationwide Collocation Agreement*, § I.B.

<sup>9</sup> See Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, WT Docket No. 10-133, *Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services, Fifteenth Report*, 26 FCC Rcd. 9664, 9481, para. 308 (2011).

<sup>10</sup> See also 47 C.F.R. Part 1, App. C, Nationwide Programmatic Agreement Regarding the Section 106 National Historic Preservation Act Review Process, § II.A.14 (defining “tower” to include “the on-site fencing, equipment, switches, wiring, cabling, power sources, shelters, or cabinets associated with that Tower but not installed as part of an Antenna as defined herein”).

<sup>11</sup> 47 U.S.C. § 332(c)(7)(A). “Personal wireless services” is in turn defined to mean “commercial mobile services, unlicensed wireless services, and common carrier wireless exchange access services.” *Id.* § 332(c)(7)(C)(1).



**Is there a time limit within which an application must be approved?**

Section 6409(a) does not specify any period of time for approving an application. However, the statute clearly contemplates an administrative process that invariably ends in approval of a covered application. We believe the time period for processing these applications should be commensurate with the nature of the review.

In the *2009 Declaratory Ruling*, the Commission found that 90 days is a presumptively reasonable period of time to process collocation applications.<sup>12</sup> In light of the requirement of Section 6409(a) that the reviewing authority “may not deny, and shall approve” a covered request, we believe that 90 days should be the maximum presumptively reasonable period of time for reviewing such applications, whether for “personal wireless services” or other wireless facilities.

Wireless Telecommunications Bureau contact: Maria Kirby at (202) 418-1476 or by email: [Maria.Kirby@fcc.gov](mailto:Maria.Kirby@fcc.gov).

-FCC-

For more news and information about the Federal Communications Commission please visit: [www.fcc.gov](http://www.fcc.gov)

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<sup>12</sup> See *2009 Declaratory Ruling*, 24 FCC Rcd. at 14012-13, paras. 46-47.

**APPENDIX**

**SEC. 6409. WIRELESS FACILITIES DEPLOYMENT.**

**(a) FACILITY MODIFICATIONS.**

(1) IN GENERAL. Notwithstanding section 704 of the Telecommunications Act of 1996 (Public Law 104–104) or any other provision of law, a State or local government may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.

(2) ELIGIBLE FACILITIES REQUEST. For purposes of this subsection, the term “eligible facilities request” means any request for modification of an existing wireless tower or base station that involves —

(A) collocation of new transmission equipment;

(B) removal of transmission equipment; or

(C) replacement of transmission equipment.

(3) APPLICABILITY OF ENVIRONMENTAL LAWS. Nothing in paragraph (1) shall be construed to relieve the Commission from the requirements of the National Historic Preservation Act or the National Environmental Policy Act of 1969.

---

**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Cell Tower Removed After 4th Ripon Student Diagnosed with Cancer | Physicians for Safe Technology

-----Original Message-----

From: Vivian Warkentin [mailto:vivwark@sbcglobal.net]

Sent: Wednesday, June 26, 2019 4:35 PM

To: All Council <council@cityofberkeley.info>; Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>

Subject: Cell Tower Removed After 4th Ripon Student Diagnosed with Cancer | Physicians for Safe Technology

<https://mdsafetech.org/2019/03/25/cell-tower-to-be-removed-after-4th-ripon-student-diagnosed-with-cancer/>

---

**From:** Angelina DeAntonis <angelina@ocelotclothing.com>  
**Sent:** Wednesday, June 26, 2019 4:04 PM  
**To:** Zoning Adjustments Board (ZAB)  
**Cc:** Chris Raisner  
**Subject:** opposition to proposed cell tower at the border of Berryman Reservoir and Codornices Park; Permit# ZP2018-0236  
**Attachments:** letter against proposed cell tower.docx

To whom it may concern,

We are extremely concerned about the proposal for a cell tower at the border of Berryman Reservoir and Codornices Park. Please find our letter attached,

Sincerely,

The Raisner Household  
96 Tamalpais Rd.  
Berkeley, CA 94708

letter: (attached also)

Raisner Household  
96 Tamaplais Rd  
Berkeley, CA 94708  
510-655-9245

Re: Permit# ZP2018-0236

To whom it may concern,

We are deeply troubled by the proposal to put a cell tower on the border of Berryman Reservoir/ Codornices Park for so many reasons.

We just purchased a home on Tamalpais Rd in summer 2018. A primary concern of ours was to be located away from cellular towers, so we made this move from San Francisco to the tranquil hills of Berkeley.

Cellular towers pose many risks to health and safety, and this one in particular risks exposing children in the park and playing fields to higher levels of radiation than can proven to be safe. In addition everyone living around the area will be exposed.

The proposed cell tower heightens the risk of fire in an already heavily treed area, in an already high fire risk area. It also poses a hazard to safely accessing the reservoir, which is crucial for safely accessing water in case of a fire.

There will also be pollution from the diesel generator. Furthermore the tower may also exceed Berkeley's noise ordinance.

All of these factors jeopardize quality of life and are safety issues. We do not know the true impact of cellular technology on human health. The proposal has no plan for unbiased monitoring of radiation levels.

Why take this risk in one of Berkeley's adored and enjoyed by visitors from all of Berkeley and the greater Bay area? With the Rose Gardens, Codornices Park, historic walking paths, and Historic Maybeck architecture on the Rose Walk, there is so much to savor in this hillside neighborhood, and surely a cellular tower is a detriment to the entire area.

There are so many reasons to not build this cell tower; the city risks so much in terms of health, beauty, serenity of the neighborhood, and the proposed tower is simply unsightly, ruining views which will no doubt reduce surrounding property values at the very least.

Please oppose and strike down the permit for this unsafe project.

Sincerely,

Oliver Raisner  
Christian Raisner  
Jacobi Raisner  
Angelina DeAntonis

SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

ZAB 06-27-19

Page 96 of 124

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**From:** Vivian Warkentin <vivwark@sbcglobal.net>  
**Sent:** Wednesday, June 26, 2019 3:29 PM  
**To:** Zoning Adjustments Board (ZAB)  
**Subject:** Is A Cell Tower Causing Cancer In School Children? - CBS Sacramento

<https://sacramento.cbslocal.com/video/4045708-is-a-cell-tower-causing-cancer-in-school-children/>

---

**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Cordonices cell tower application

-----Original Message-----

From: Vivian Warkentin [mailto:vivwark@sbcglobal.net]  
Sent: Wednesday, June 26, 2019 3:25 PM  
To: Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
Subject: Cordonices cell tower application

Dear Zoning Board,

Please deny the application for a 50 foot cell tower at Berryman Reservoir.

It is time for our local representatives to stand up for the health and safety of the public, including humans plants animals insects, rather than hop to at the beck and call of the telecom industry. There is a lot of cheap talk going around about protecting nature, yet this travesty of corporate rule over us and our environment goes on.

More and more information is coming to the fore about the dire health dangers of wireless cell towers. Wireless is an incredibly inefficient use of energy and only benefits the monopoly desires of the telecom companies like ATT and Verizon. Please have the courage to stand for what is right.

Thank you.

Vivian Warkentin, Berkeley

---

**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Cell Tower in Codornices Park

**From:** LOIS FAIRLEY [mailto:slfairley@prodigy.net]  
**Sent:** Wednesday, June 26, 2019 3:01 PM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** Cell Tower in Codornices Park

Please do not allow construction of the Verizon cell tower in Codornices Park. The proposed size and placement of the tower is completely incongruous for the neighborhood. Not only will it be an unsightly blight but it poses a health and safety hazard to nearby residents as well as visitors, especially children, frequenting the park. I've lived here on Tamalpais Road since 1980 and I never thought I would see the day when the city would sacrifice the health and well being of residents and guests in our city in order to facilitate financial gain for a commercial business such as Verizon.



---

**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Letter for Thursday June 27  
**Attachments:** 1951-75 Shattuck Ave ZAB.pdf

**From:** Talie Paul [mailto:talieandpaul@gmail.com]  
**Sent:** Wednesday, June 26, 2019 12:28 PM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** Letter for Thursday June 27

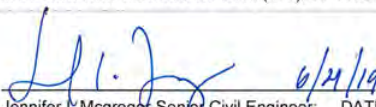
Hello Secretary,

Would you please circulate the attached letter to the Zoning Adjustments Board? This letter is in reference to 1951-75 Shattuck Ave which will be discussed Thursday June 27.

Thank you very much,  
Talie



**REVIEW OF AGENCY PLANNING APPLICATION**

THIS IS NOT A PROPOSAL TO PROVIDE WATER SERVICES			
The technical data supplied herein is based on preliminary information, is subject to revision and is to be used for planning purpose ONLY			
DATE: 06/19/2019	EBMUD MAP(S): 1491B508	EBMUD FILE: S-10809	
AGENCY: City of Berkeley Land Use Planning Division Attn: Zoning Board 1947 Center Street, 2nd Floor BERKELEY, CA 94704	AGENCY FILE: ZP2018-0236	FILE TYPE: Other	
APPLICANT: David Haddock / Verizon 12919 Alcosta Street, #1  San Ramon, CA 94563		OWNER: EBMUD, Robert Korn 375 11th Street, M/S 903 Oakland, CA 94607	
DEVELOPMENT DATA			
ADDRESS/LOCATION: 0 Euclid Avenue City: BERKELEY Zip Code: 94709			
ZONING: PREVIOUS LAND USE: Berryman Reservoir site			
DESCRIPTION: Establish a new 50' high "monopole" 4G LTE wireless facility operated by Verizon Wireless at East Bay Municipal Utility District site consisting of six antennas, six remote radio units and associated group equipment			TOTAL ACREAGE: 0.02 ac.
TYPE OF DEVELOPMENT:			
WATER SERVICES DATA			
PROPERTY: in EBMUD	ELEVATION RANGES OF STREETS: 500-500	ELEVATION RANGE OF PROPERTY TO BE DEVELOPED: 500-500	
None from existing main(s) Location of Main(s):		None from main extension(s) Location of Existing Main(s):	
PRESSURE ZONE	SERVICE ELEVATION RANGE	PRESSURE ZONE	SERVICE ELEVATION RANGE
COMMENTS			
The location and installation of the wireless antennas and associated equipment on EBMUD's Berryman Reservoir property is subject to the conditions and approval of EBMUD. EBMUD's Operations and Maintenance Department and Real Estate Services Division are currently reviewing the proposed project. The project sponsor should continue to work with EBMUD's Operation and Maintenance Department and Real Estate Services regarding the subject project.			
NL			
cc: Matt Elawady, Robert Korn			
CHARGES & OTHER REQUIREMENTS FOR SERVICE: Contact the EBMUD New Business Office at (510)287-1008.			
 Jennifer L. McGregor, Senior Civil Engineer; DATE 6/24/19 WATER SERVICE PLANNING SECTION			

Received

JUN 26 2019

Land Use Planning

---

**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Proposed Cell tower at Ebmud Berryman Reservoir  
**Attachments:** Letter to ZAB 06.25.19.docx; Verizon Wireless Facility Ebmud Berryman Reservoir.pdf

**From:** Justin Lombardelli [mailto:jlombardelli200@gmail.com]  
**Sent:** Tuesday, June 25, 2019 10:42 PM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>; Nawfal, Layal <LNawfal@cityofberkeley.info>  
**Subject:** Proposed Cell tower at Ebmud Berryman Reservoir

Please enter the attached letter and presentation into the record regarding Permit #ZP2018-0236

Please let me know if you have any questions. Thank you,  
Justin Lombardelli

June 25, 2019

Justin Lombardelli  
1350 Scenic Avenue Berkeley, CA 94708

Zoning Adjustments Board Land Use Planning Division  
1947 Center Street Berkeley, CA 94704  
RE: Proposed Cell Tower at 0 Euclid Avenue

Dear Members of the Board,

Let me start by posing a few questions: would you send your kids to a school with a cell tower on it? Would you send someone else's kids to a school with a cell tower on it? I would suggest talking with the parents of [kids that attend Weston Elementary School in Ripon](#) California. After a long fought battle, Sprint finally shut down a cell tower on the campus after a major revolt by the parents. Kellie Prime's son Kyle was 10 years old when he was diagnosed with kidney cancer in 2016. Five months later, Kyle's buddy Mason Ferruli, developed **brain cancer**.....brain cancer in a 10 year old. It took 14 hours to remove the tumor from his brain. He had to learn to walk, talk and to eat all over again, says his mom Monica Ferruli. She says, "its absolutely not worth the risk". Two more kids were diagnosed with cancer this year. CBS News medical contributor and Oncologist Dr David Agus said the number of cases warrants further investigation. In total 8 students and teachers have been diagnosed with cancer.

There is also the [prolonged opposition from](#) the California Firefighters Union who lobbied to get the cell phone towers removed from their fire stations. Firefighter groups in the United States have long opposed cell towers on their stations. Not only that, but in California they have gained an exemption from the forced placement of towers on their stations because of the strong opposition they have- due to health concerns from the radiation. Dr. Gunnar Heuser, **led brain studies on firefighters following a cell tower installation on their firestation and found that they were all abnormal** . His SPECT brain study on firefighters in 2004 who complained of neurological problems following a cell tower installation at their firestation 5 years prior found that they were abnormal. The symptoms they experienced, which were documented in an [affidavit](#) filed by Susan D Foster and Dr Heuser, were; headaches, memory problems, sleeping problems, depression, and anxiety. Disturbingly, **the SPECT scans revealed a pattern of abnormal change which was concentrated over a wider area than would normally be seen in brains of individuals exposed to toxic inhalation**, as might be expected from fighting fires. Dr. Heuser indicated the **only plausible explanation at this time would be RF radiation exposure**. Additionally, the TOVA testing revealed among the six firefighters delayed reaction time, lack of impulse control, and difficulty in maintaining mental focus. Because of increasing complaints among firefighters with cellular antennas on their stations coupled with the California study showing damage among the six firefighters tested, a group of five individuals spread across two provinces and three states worked with Southern California firefighters to draft the resolution put before the IAFF membership.

Quote from Dave Gillotte, Active Duty Firecaptain, President, LA Country Firefighters Local 1014,

“As firefighters and paramedics, we live in these firehouses. What effect will these towers have on us? What are the risks to our neighbors? It’s a no-brainer that LA County should at least have done a proper study before putting 200-foot high-power microwave antennas on top of our heads.”

LA County Firefighters Local 1014 posted a petition on Change.org to “Immediately STOP installation of cell towers at all LA County fire and lifeguard facilities! It states, LA-RICS is in the process of installing cell towers at LA County fire stations and lifeguard facilities WITHOUT first studying the impact on the first responders who live and work there or the residents who live or work adjacent to the facilities. PLEASE SIGN THIS PETITION TODAY to make sure that installation of cell towers STOPS unless and until all safeguards are followed and SAFETY IS PROVEN!

- Cell tower Radio Frequency radiation has been reported to cause debilitating symptoms including excessive fatigue, headaches, weakness, memory impairment, tinnitus, dizziness, irritability, sleep disturbances, vertigo, and balance problems (Carpenter, 2014).
- The LA-RICS project has been **poorly planned** and rushed in an **unsafe** manner. Without any actual Radio Frequency Radiation emission exposure studies done in advance of the construction of the cell towers. This is unacceptable and inaccurate in determining the radio frequency radiation **exposure levels of firefighters**, of the residents who live near the stations, and of the **children who attend the schools near the stations**.
  - There has only been one sample Radio Frequency Emission Analysis Report done for all 87 proposed Fire Station sites.
  - No site-specific studies have been completed prior to build out or the potential exposure of Local 1014 members.
  - The sample report that was done as a model for all Fire Stations shows excessive Radio Frequency Radiation exposure levels.
  - Post construction Radio Frequency Radiation measurements are unacceptable.
- FCC Compliance does not equal safety or lack of hazard to firefighters, and cumulative Radio Frequency Radiation exposure has not been considered. THE RULES TO PROTECT FIREFIGHTERS AND RESIDENTS MUST BE FOLLOWED!

Let me also quote from an [International EMF Scientist appeal](#) to the Secretary General of the UN - signed by **230 scientists from 41 countries**.

“We are scientists engaged in the study of biological and health effects of non-ionizing electromagnetic fields (EMF). Based upon peer-reviewed, published research, we have “serious concerns” regarding the ubiquitous and increasing exposure to EMF generated by electric and wireless devices. These include—but are not limited to—radiofrequency radiation (RFR) emitting devices, such as cellular and cordless phones and their base stations, Wi-Fi, broadcast antennas, smart meters, and baby monitors as well as electric devices and infra-structures used in the delivery of electricity that generate extremely-low frequency electromagnetic field (ELF

EMF). Numerous recent scientific publications have shown that EMF affects living organisms at levels well below most international and national guidelines. Effects include increased cancer risk, cellular stress, increase in harmful free radicals, genetic damages, structural and functional changes of the reproductive system, learning and memory deficits, neurological disorders, and negative impacts on general well-being in humans. Damage goes well beyond the human race, as there is growing evidence of harmful effects to both plant and animal life.

These findings justify our appeal to the United Nations (UN) and, all member States in the world, to encourage the World Health Organization (WHO) to exert strong leadership in fostering the development of more protective EMF guidelines, encouraging precautionary measures, and educating the public about health risks, **particularly risk to children and fetal development**. By not taking action, the WHO is failing to fulfill its role as the preeminent international public health agency.

**Collectively we also request that:**

1. children and pregnant women be protected;
2. guidelines and regulatory standards be strengthened;
3. manufacturers be encouraged to develop safer technology;
4. utilities responsible for the generation, transmission, distribution, and monitoring of electricity maintain adequate power quality and ensure proper electrical wiring to minimize harmful ground current;
5. the public be fully informed about the potential health risks from electromagnetic energy and taught harm reduction strategies;
6. medical professionals be educated about the biological effects of electromagnetic energy and be provided training on treatment of patients with electromagnetic sensitivity;
7. governments fund training and research on electromagnetic fields and health that is independent of industry and mandate industry cooperation with researchers;
8. media disclose experts' financial relationships with industry when citing their opinions regarding health and safety aspects of EMF-emitting technologies; and
9. white-zones (radiation-free areas) be established.

After the scientists' appeal was written in 2015 additional research has convincingly confirmed serious health risks from RF-EMF fields from wireless technology. [The world's largest study](#) (\$25M) from the National Toxicology Program (NTP), **shows statistically significant increase in the incidence of brain and heart cancer in animals exposed to EMF below the ICNIRP** (International Commission on Non-Ionizing Radiation Protection) guidelines followed by most countries. This study presents some of the strongest evidence to date that such exposure is associated with the formation of rare cancers in at least two cell types in the brains and hearts of rats. Christopher Portier, a retired head of the NTP, said that this is not just an associated finding—but that the relationship between radiation exposure and cancer is clear. "I would call it a causative study, absolutely. They controlled everything in the study. It's [the cancer] because of the exposure." These results support results in human epidemiological studies on RF radiation and brain tumour risk. A large number of peer-reviewed scientific reports demonstrate harm to human health from EMFs. The International Agency for Research on Cancer (IARC), the cancer agency of the World Health Organization (WHO), in 2011 concluded that EMFs of

frequencies 30 KHz – 300 GHz are possibly carcinogenic to humans (Group 2B). However, new studies like the NTP study mentioned above and several epidemiological investigations including the latest studies on mobile phone use and brain cancer risks confirm that RF-EMF radiation is carcinogenic to humans. The EUROPA EM-EMF Guideline 2016 states that "there is strong evidence that long-term exposure to certain EMFs is a risk factor for diseases such as certain cancers, Alzheimer's disease, and male infertility...Common EHS (electromagnetic hypersensitivity) symptoms include headaches, concentration difficulties, sleep problems, depression, lack of energy, fatigue, and flu-like symptoms."

On September 13, 2017 there was [an appeal](#) from 180 scientists and doctors from 35 countries recommending a moratorium on the rollout of 5G until potential hazards for human health and the environment have been fully investigated by scientists independent from industry. RF-EMF has been proven to be harmful for humans and the environment.

In a [Study](#) out of Germany called **The Influence of Being Physically Near to a Cell Phone Transmission Mast** they evaluated case histories of patients between 1994 and 2004. The result of the study shows that the proportion of newly developing cancer cases was significantly higher among those patients who had lived during the past ten years at a distance of up to 400 metres from the cellular transmitter site, which has been in operation since 1993, compared to those patients living further away, and that the patients fell ill on average 8 years earlier. In the years 1999-2004, ie after five years' operation of the transmitting installation, the **relative risk of getting cancer had trebled for the residents of the area in the proximity** of the installation compared to the inhabitants outside the area.

From a peer reviewed article in the [American Journal of Men's Health](#) published in December 2018. Two hundred and seventeen volunteer male students aged between 13 and 16 registered from two different intermediate schools: 124 students were from School 1 and 93 students were from School 2. The mobile phone base stations (MPBSTs) were located within 200 m from the school buildings. In School 1, RF-EMF was  $2.010 \mu\text{W}/\text{cm}^2$  with a frequency of 925 MHz and in School 2, RF-EMF was  $10.021 \mu\text{W}/\text{cm}^2$  with a frequency of 925 MHz. Students were exposed to EMFR for 6 hr a day, 5 days a week for a total period of 2 years. The Narda Safety Test Solution device SRM-3006 was used to measure RF-EMF in both schools, and cognitive functions tasks were measured by the Cambridge Neuropsychological Test Automated Battery (CANTAB). Significant impairment in Motor Screening Task (MOT;  $p = .03$ ) and Spatial Working Memory (SWM) task ( $p = .04$ ) was identified among the group of students who were exposed to high RF-EMF produced by MPBSTs. High exposure to RF-EMF produced by MPBSTs was associated with delayed fine and gross motor skills, spatial working memory, and attention in school adolescents compared to students who were exposed to low RF-EMF.

More than 50 expert scientists and doctors have made a [declaration to Health Canada](#) calling for protection for the public from radiofrequency radiation exposure. They say they have serious concerns regarding Health Canada's Safety Code 6 Guideline. Their Declaration states:

Many Canadians and people worldwide share a growing perception of risk due to the proliferation of RF sources encountered in daily life and reports of adverse health effects. Since the start of the Wireless Age in the 1990s, health studies show more people reacting adversely to electromagnetic fields and electromagnetic radiation. Epidemiological studies show links between RF exposure and cancers, neurological disorders, hormonal changes, symptoms of electrical hypersensitivity (EHS) and more. Laboratory studies show increased cancers, abnormal sperm, learning and memory deficits, and heart irregularities. People who suffer from functional impairment due to RF exposure and those who prefer to live, work and raise their children in a low EMF environment are increasingly unable to find such places. Worker productivity, even the capacity to make a living, is diminishing. Some people are being forced into an isolated, nomadic lifestyle, with few resources to sustain them. The medical community in North America is largely unaware of the biological responses to RF exposure and does not know how to treat those who have become ill. The typical methods to alleviate symptoms and promote healing are not working due, in part, to ubiquitous exposure. Our urgent call for public health protection. The public's health and the health of the environment are threatened by ever-evolving RF emitting technologies, without due consideration for what the potential cumulative impacts on biological systems are likely to be in the future. We urgently call upon Health Canada . . . i) to intervene in what we view as an emerging public health crisis; ii) to establish guidelines based on the best available scientific data including studies on cancer and DNA damage, stress response, cognitive and neurological disorders, impaired reproduction, developmental effects, learning and behavioural problems among children and youth, and the broad range of symptoms classified as EHS; and iii) To advise Canadiansto limit their exposure and especially the exposure of children.

Here is a quote from Barbara Sattler of the Alliance of Nurses for Healthy Environments in [opposition to SB 649](#) which would have made it easier to install microwave radiation antennas, "I am a Professor of Public Health at the University of San Francisco and a Board Member of the national Alliance of Nurses for Healthy Environments. I am very concerned about moving forward with expanding the use of small-scale wireless technologies at the same time that there is mounting evidence of the potential for health risks from the associated radio frequency energy and radiation, **particularly to children**. The Alliance of Nurses for Healthy Environments ascribes to the **precautionary principle** as it applies to human health. We firmly believe that early warnings in the scientific literature should be heeded and that our policy development should reflect the synthesis of the best and latest scientific evidence. At this point in time, we oppose SB 649 and believe that we need an exhaustive review of the science before we allow significant expansion of small cell wireless facilities, such as those to facilitate 5G networks. The results of the literature review should inform our policies. We must be sure that vulnerable populations such as pregnant women and young children will not be unduly harmed from their proximity to unnecessary radio frequency energy. It is important that we continue to examine what constitutes a safe distance and how we can continue to pivot when more information becomes available. We are concerned that the passage of SB 649 will entrench us in a policy for which we have insufficient assurances and which, if passed, will require the burden of effort to reverse.



From [USLegal.com](http://USLegal.com), the precautionary principle states that when an activity causes some threat or harm to the public or the environment, general precautionary measures should be taken. When a scientific investigation proves that there is a possible risk in doing some activity, then this principle should be applied.

Teacher unions and PTAs internationally are taking action on issues of wireless technology cases. June 25, 2018, [San Francisco educators](#) closed the school year with the passage of a safer technology resolution that aims to provide simple steps to reduce exposure to radio frequency wireless energy for children, adolescents and educators in San Francisco schools. Sarah Aminoff, a San Francisco educator who presented the resolution to the Executive Board of United Educators of San Francisco states, “published and peer-reviewed research has found cell phones and Wi-Fi can impact the brain”. The Cleveland Clinic recommends reducing exposure due to their research that found impacts to the reproductive system. “This is not just about educators, it is also about our students whose physiology is still developing”.

On November 15, 2017 [the Hillsmere PTA requested that the Board](#) reconsider its November 1, 2017 decision and rescind its approval of the proposed easement for placement and maintenance of a mini-cell at Hillsmere. The letter referenced the EMF Scientists, Environmental Health Trust, Physicians for Safe Technology and the Maryland State Children’s Environmental Health and Protection Advisory Councils expert recommendations to reduce radiofrequency radiation exposure to children and pregnant women.

Excerpts of the Letter:

“The installment of a mini-cell on a pole adjacent to Hillsmere poses significant health dangers to both students and staff at Hillsmere. While some argue that radiation emitted from a mini-cell, or any type of cell tower, is not a health danger, data from independently, nonpartisan sponsored studies, indicate the opposite. Scientists and health care professionals are increasingly expressing concerns regarding both the overall roll-out of the 5G network, and the presence of mini-cells and cell towers near schools specifically. According to findings by the Environmental Health Trust, radiation from mini-cells is not small. Wireless antennas emit microwaves — non-ionizing radiofrequency radiation — essentially functioning as cell towers — and that radiation is expected to typically travel from 10 meters up to several hundred meters.”

There is new [proposed legislation](#) from Oregon (Senate Bill 283) that has passed both houses of the legislature and awaits the governor’s signature which directs the Department of Education to prepare and make available a statement that discloses potential health risks of wireless network technology and requires public and private schools to distribute statement to employees, students and parents or guardians of students. Requires department to adopt by rule guidelines for including in school curricula, assemblies, open houses, meetings between parents and teachers and related settings information concerning hazards of exposure to microwave radiation and how to use wireless devices more safely to reduce risk. **Requires department and Oregon Health Authority to conduct review of peer-reviewed, independently funded studies of effects of exposure to microwave radiation in schools and similar environments**, particularly exposure that results from use of wireless network

technologies, to develop recommendations to schools in this state for practices and alternative technologies that would eliminate students' exposure to harmful microwave radiation and report results of review and recommendations to interim committee of Legislative Assembly related to education not later than September 15, 2020. **Declares emergency, effective on passage. They are declaring an emergency.**

The precautionary principle needs to be applied here. I will tell you for certain, that if you put a cell tower at 0 Euclid Avenue, I will not bring my child to that park, and we will probably move out of the neighborhood.

Sincerely,  
Justin Lombardelli

SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

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# Application for Verizon Wireless Facility

0 Euclid Avenue - Ebmud Berryman Reservoir

The Coverage Question:  
Why a Tower is **not needed**

SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

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## Does Verizon need improved coverage?

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Verizon's application statement related to **need**:

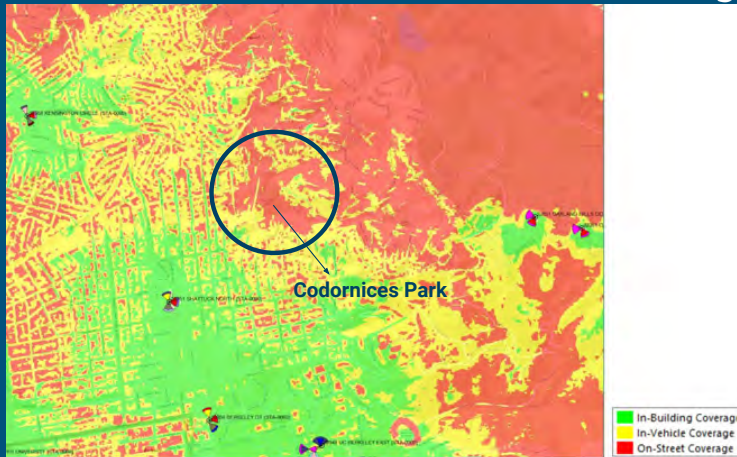
As shown on the coverage maps included with this application, **Verizon coverage in the immediate vicinity of the proposed facility is poor**. By building the proposed facility Verizon will dramatically improve coverage in the area, particularly inside of homes and other buildings. This will enable Verizon subscribers to more easily make contact with the world around them, including emergency services, such as law enforcement, fire departments, ambulances, etc.

SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

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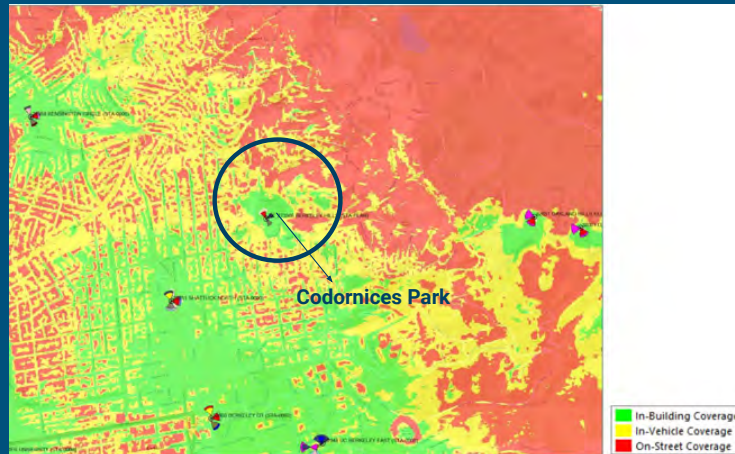
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## What is the evidence that coverage is poor?



- Simulated model from Verizon's permit application
- Reflects poor coverage in the area
- How is this simulation performed?

And here is the coverage with the tower



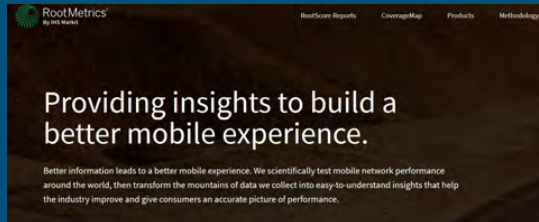
- Seems like an improvement in coverage

SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

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## RootMetrics is independent and unbiased



RootMetrics  
By 3G World

RootScore Reports CoverageMap Products Methodology

Providing insights to build a better mobile experience.

Better information leads to a better mobile experience. We scientifically test mobile network performance around the world, then transform the mountains of data we collect into easy-to-understand insights that help the industry improve and give consumers an accurate picture of performance.



The standard for mobile performance measurement.

We're independent in our testing, unbiased with our results, and cited by the industry, press, and consumers alike. With nation-to-neighborhood reporting, a dedicated analytics department to verify all results, and end-to-end insights that stretch beyond the network itself, our unique approach has changed the game.

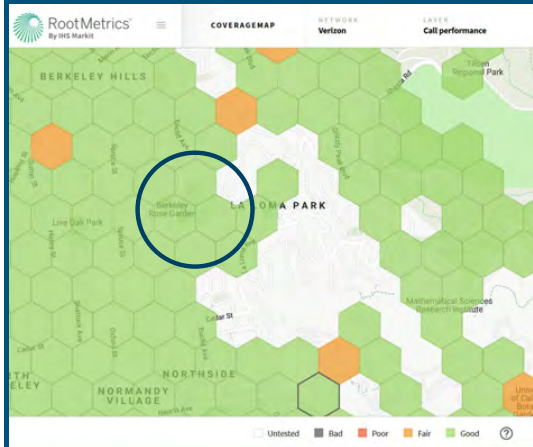
- RootMetrics is an **independent mobile analytics firm**
- Offers **scientific insights** into how users experience networks under real-world conditions
- Use off-the-shelf smartphones to test for calls, texts and data services, day and night
- Nation to neighborhood reporting with a dedicated analytics department to verify results
- Cited by **industry, press and consumers**

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## RootMetrics coverage map shows **good** coverage



- Coverage is **Good** all around
- White is **Untested**
- **No Bad or poor areas** at all anywhere on the map
- Only a few fair areas anywhere close by
- Scientifically **tested** mobile performance



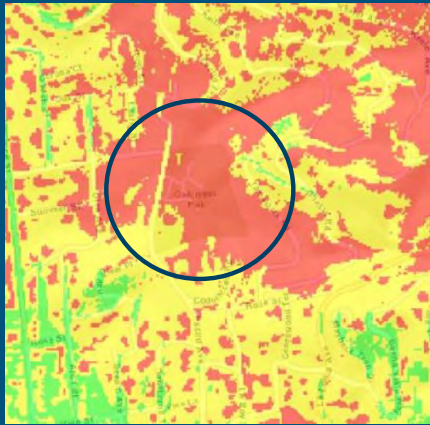
SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

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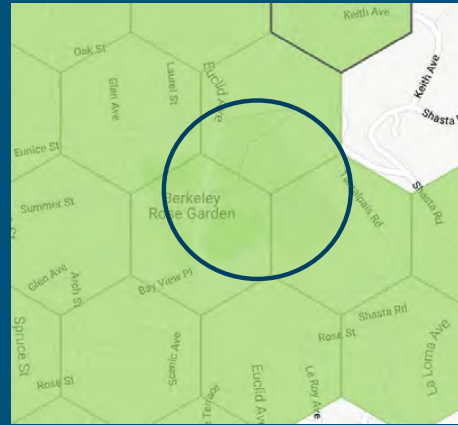
Page 115 of 124

## Direct coverage compare - **doesn't compute**

— Coverage in the **Red**



— Coverage in the **Green**

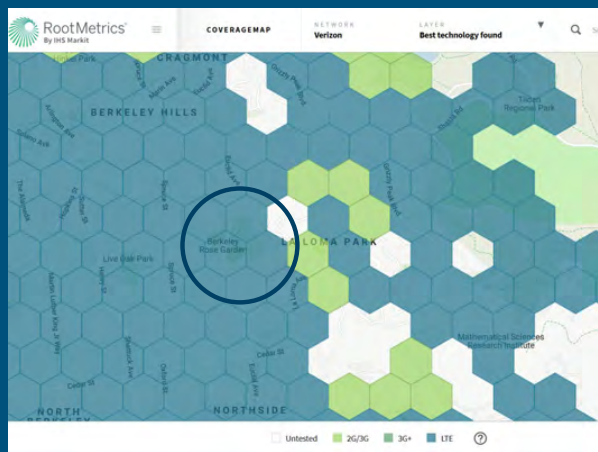


SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

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## The best technology is already in the area



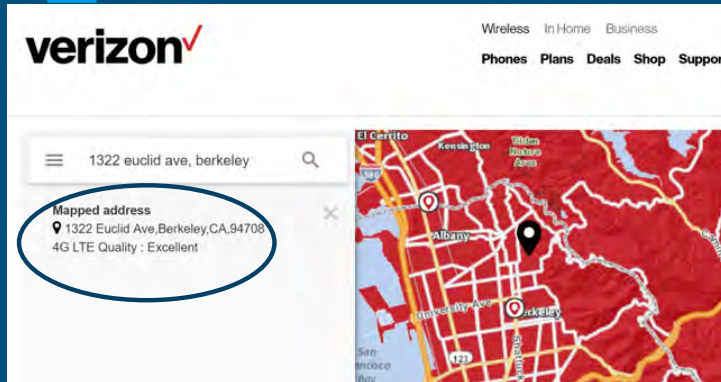
- Best Technology is already available
- LTE (4G) is nearly everywhere

SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

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## Verizon's interactive map shows **excellent** coverage



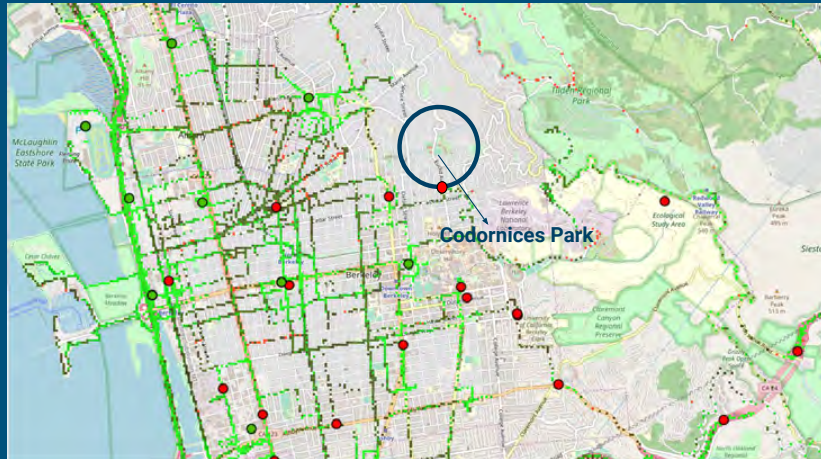
- 4G LTE **quality is excellent**
- Right across the street from 0 Euclid

SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

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We have plenty of Verizon cell towers in the area already



25 cell locations

# 18 existing cell locations within 1.5 miles

### Verizon

- 1. 1540 Shattuck; .547 miles
- 2. 1804 Euclid Ave; .58 mile (recently approved)
- 3. 2015 Shattuck; .91 mile (pending approv)
- 4. 2002 Acton; 1.58 mile

### Sprint

- 1. 1600 Shattuck; .599 miles

### AT&T

- 1. 1625 Shattuck; .61 miles
- 2. 1632 University; 1.34 mile
- 3. Hearst & Arch; .69 mile
- 4. 2116 Bancroft; 1.19 mile

### MetroPCS

- 1. 1936 University; 1.06 miles
- 2. 2150 Shattuck; 1.05 mile
- 3. Hearst & Arch; .69 mile
- 4. 2116 Bancroft; 1.19 mile

### T-Mobile

- 1. 2095 Rose; .47 miles
- 2. 2054 University; .96 mile
- 3. 1725 University; 1.22 mile
- 4. 1810 Euclid; .58 mile
- 5. 1330 Cedar; 1.47 mile
- 6. 2116 Bancroft; 1.19 mile

More than enough towers

SUPPLEMENTAL ITEM RD2 - 0 EUCLID AVE

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## Summary

1. Rootmetrics and Verizon's own online coverage maps **both indicate good or even excellent** coverage and call performance
2. Verizon's RF model included in their application **does not reflect** real world conditions at the proposed site and **has not been verified** by an independent third party consultant
3. The applicant's claim that "coverage in the immediate vicinity of the proposed facility is poor" **is not supported**
4. There are many existing towers very close to the proposed location and the applicant should have to prove why they can't co-locate on one of these existing towers before they can justify a new one, a point which should be substantiated by an independent consultant

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Opposition of Cell Tower

-----Original Message-----

From: Sarah Collins [mailto:sarahlou5000@gmail.com]

Sent: Tuesday, June 25, 2019 8:13 PM

To: Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>

Subject: Opposition of Cell Tower

To Whom it Concerns:

Please do not allow the proposed tower to be built at the Berryman Reservoir/Codornices Park above the Rose Garden. One of the reasons I left San Francisco and moved to this neighborhood in Berkeley was for what it had to offer. A sanctuary that feels healthy and safe. I walk to the garden and park on a nearly daily basis. I bring my family and infant niece. I come to relax and walk my dog. This is so disheartening to think of the very reasons I moved to this area being pulled out from underneath me.

I am an ICU nurse and I see people die of cancer and suffer from diseases of all kinds. People who are just trying to live a decent life. People whose lives are cut short. People who don't get to live out their life with those they love.

Isn't there a better solution? A better place for the towers to go? Somewhere away from where children and families go to spend time and live? Somewhere less populated?

I beg you to please look for alternate solutions.

Thank you.

Sarah Collins  
New Homeowner  
1188 Spruce Street  
Berkeley, CA 94707

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Permit#ZP2018-0236

**From:** Lee Bevis [mailto:leebee123@msn.com]  
**Sent:** Tuesday, June 25, 2019 5:38 PM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** Permit#ZP2018-0236

To whom it may concern:

I would like to voice my opposition to erecting a cell tower on the border of Berryman Reservoir/Codornices Park.

This is a very popular park for children of all ages, and my main concern is the radiation emissions from such a tower which might affect these children.

Sincerely,  
Lee Bevis  
1349 Arch Street  
Berkeley, CA 94708  
[leebee123@msn.com](mailto:leebee123@msn.com)



**Nawfal, Loyal**

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**Subject:** FW: Please, no cell phone tower in the park

**From:** Sarah Watson [mailto:spiveywatson@gmail.com]

**Sent:** Sunday, June 23, 2019 10:54 AM

**To:** Nawfal, Loyal <LNawfal@cityofberkeley.info>

**Subject:** Please, no cell phone tower in the park

Dear city officials:

A cell phone tower near a park where children play and adults go for and quiet relaxation would defeat the ideas of safety and health that the park implies. It is one of my favorite places to be, but will be no longer if I am exposed to radiation. Please deny Verizon or any company the right to place a cell phone tower near a public recreation area.

Sarah Watson

**Nawfal, Loyal**

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**Subject:** FW: Weighing in on proposed cell towers

**From:** Shawn Drost [mailto:sdrost@gmail.com]

**Sent:** Friday, June 21, 2019 3:55 PM

**To:** Nawfal, Loyal <LNawfal@cityofberkeley.info>; PWWorks <PWWorks@cityofberkeley.info>; Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>

**Subject:** Weighing in on proposed cell towers

Hi all,

My wife and I are homeowners at 1278 Campus Dr. She has lived in Berkeley her whole adult life and I'm new here after 8 years in SF. We live near by the planned cell towers in Barryman Reservoir / Codornices park as well as some others that I see under discussion on Next Door.

I am FOR cell towers in general. I am also FOR these specific towers. I am FOR any tower that your council is endorsing. Here are my reasons:

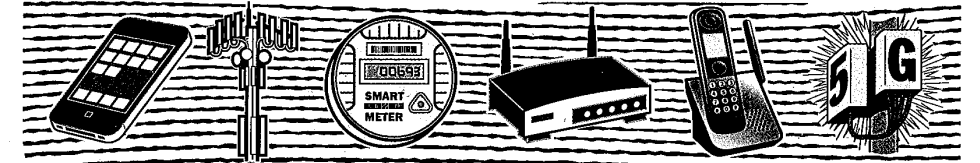
1. The people of Berkeley have overwhelmingly voted with their actions. We are all FOR cell towers. This debate is about where to put them. I hope you will disregard the vocal minorities saying "who needs cell service" or "who needs 5g".
2. It is my understanding that these towers are deemed safe after serious studies by relevant professionals. In fact I am under the impression that it is illegal to block their placement for health related reasons, because our duly elected representatives and their staff have decided these health questions are settled science. If all that is true I hope you will stick to the mandate. If you are like the public servants I know you will be looking for a way to make this work for everyone and I respect that, but I just want to add my voice as a representative of the silent majority.
3. I get that nobody likes an eyesore. But obviously there are smart people that have worked to minimize the outcry and maximize the upside. I respect that work and ask you not to bend to loud voices saying that this is the wrong backyard for the towers. Figure out the best place for them and be done with it, and if it's in Glendale La Loma park next time (my back yard) you won't hear me complaining. Put a homeless shelter here please.
4. I need some more bars y'all not to make light of something that many people are threatening to move about. But the simple fact needs to be said. We all use and live this infrastructure for everything including keeping in touch with our legislators. I am literally having trouble sending this right now (not making it up, I know it's hard to believe).

I think that's all I have to say. Thanks for reading!

-Shawn Drost

*ZAB - Why property values will plummet w/ 4G+ or 5G+*  
**PUBLIC HEALTH WARNING**

**WIRELESS DEVICES EMIT MICROWAVE RADIATION – a known biological hazard**



**EVERY TIME YOU USE A WIRELESS DEVICE, YOU ARE EXPOSED TO MICROWAVE RADIATION.**

The World Health Organization (WHO) labels this radiation a Class 2B possible carcinogen in the same category as lead, DDT and chloroform. Cell and cordless phones & other wireless devices, cell antennas and towers, "smart" meters, microwave ovens and Wi-Fi routers all create "electro-smog."

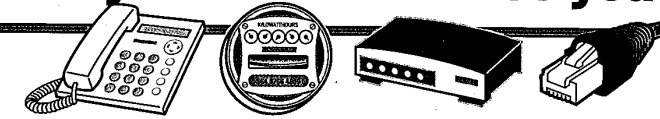
**MICROWAVE RADIATION IS HARMFUL.** Scientists link wireless radiation to health problems, both short and long term: cancer, infertility, damage to DNA and fetuses, sleep problems, memory and cognitive impairments, heart problems, immune deficiencies and many others.

**MANY PEOPLE SUFFER FROM ELECTROMAGNETIC SENSITIVITY (EHS)** and cannot tolerate common exposures, seriously impacting their health, jobs, housing, and social lives.

**GOVERNMENT REGULATIONS DO NOT PROTECT YOU.** FCC guidelines were written decades ago and ignore current science linking wireless radiation to adverse health effects. In 2015, Berkeley, CA passed a law requiring consumer safety warnings at cell phone retailers. The wireless industry is suing under the guise of "free speech."

Printed on 100% Recycled Paper with vegetable inks

## Protect yourself and those you love:



- **GET WIRED!** Ethernet cables provide faster, safer, more reliable internet connections.
- **USE A CORDED LANDLINE.** Cordless phones are as dangerous as cell phones.
- **KEEP YOUR DISTANCE. TURN IT OFF.** Ditch the cell phone! Manuals tell you to keep phones away from your body at all times. Turn it off or keep it on airplane mode.
- **DO NOT USE WIRELESS DEVICES INSIDE METAL ENCLOSURES,** like cars, elevators, buses, and trains, where radiation exposure is amplified for all onboard.
- **WIRELESS RADIATION IS ESPECIALLY BAD FOR CHILDREN AND PREGNANT WOMEN.** Prenatal and childhood exposure is linked to hyperactivity, brain changes, and autism.
- **DITCH THE "SMART" METER—IT PULSES MICROWAVE RADIATION 24/7.** Demand a non-electronic, electromechanical analog meter—no dirty electricity or RF radiation.
- **AVOID SMALL AND LARGE CELL TOWERS.** Fight to stop their proliferation.
- **ALERT YOUR FRIENDS AND FAMILY — GET ORGANIZED.** Inform and mobilize your community and kick cell towers and other wireless infrastructure out of your neighborhood!

**References, Resources & EMF Meters at: [StopSmartMeters.Org](http://StopSmartMeters.Org)**  
info@stopsmartmeters.org • PO Box 682 Portola, CA 96122 • Toll-Free Hotline (888) 965-6435

# Risk of Exposure to Radio Frequency Radiation from Cell Phones, Wi-Fi, Base Stations and More: Published Peer Review Science (58 studies and counting<sup>1</sup>)

## Brain cancer, 14 studies

- USA, 1
- 5-countries, 1
- 4-countries—children,<sup>2</sup> 1
- Sweden, 5
- Israel, 1
- France, 2
- Germany, 1
- 13-countries, 2

Late Communications  
Zoning Adjustments Board

JUN 28 2019

RECEIVED  
at Meeting

## Tumors of the meninges<sup>3</sup> (meningioma), 6 studies

- 5-countries, 1
- Israel, 1
- Sweden 3
- France, 1

## Hearing nerve tumors<sup>4</sup>, 5 studies

- Israel, 1
- United Kingdom, 1
- Sweden, 2
- South Korea, 1



Hearing nerve tumor  
Impinging on brain

<sup>1</sup> Published since 2011 when International Agency on Cancer classified Radio Frequency Radiation a "Possible Carcinogen. A complete list of these papers is available upon request.

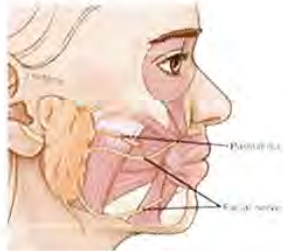
<sup>2</sup> Children absorb twice the radiation in the brain, and 10 times the radiation in bone marrow, compared to adults.

<sup>3</sup> The meninges surround the brain and spinal cord

<sup>4</sup> Also called: Vestibular Schwannoma, Acoustic Neuroma

**Parotid Gland<sup>5</sup> Cancers, 5 studies**

Israel, 3  
Brazil, 1  
Saudi Arabia, 1



Parotid gland

**Eye Cancer—Melanoma, 4 studies**

Germany, 2  
Israel, 1  
United States, 1

**Breast Cancer (male and female), 4 studies**

United States, 2  
Israel, 1  
China, 1

**Leukemia, 4 studies**

Thailand, 1  
England, 1  
Israel, 2

**Lymphoma, 2 studies**

United States, 1  
Israel, 1

**Thyroid Cancer, 4 studies**

United States, 3  
Nordic Countries, 1

**Multiple Cancers, 4 studies**

Israel, 3 (Belgium, Israel, Poland military)  
United States, 1 (Middle school teachers)

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<sup>5</sup> Salivary gland located in cheeks

## **DNA Repair Gene Damage**

Besides these peer-reviewed science studies, there is substantial evidence that DNA damaged repair genes are inhibited by radio frequency radiation (RFR) and inhibited by 5<sup>th</sup> generation (5G) millimeter wave radiation (MWR).

Since our DNA is often damaged there DNA repair genes are essential.

## **5G Millimeter Wave Radiation (5G MWR) Impact on Insects**

A recently published science paper indicates potential damage to insects.<sup>6</sup>

In a rational world, prior to introduction, 5G MWR would be tested prior to release to access if there is damage to insects and humans.

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<sup>6</sup> Thielens, Bell, Mortimore, Greco, Martens & Joseph. Exposure of Insects to Radio-Frequency Electromagnetic Fields from 2 to 120 GHz. Scientific Reports (2018) 8:3924 DOI:10.1038/s41598-018-22271-3

# Application for Verizon Wireless Facility

0 Euclid Avenue - Ebmud Berryman Reservoir

The Coverage Question:  
**Why a Tower is not needed**



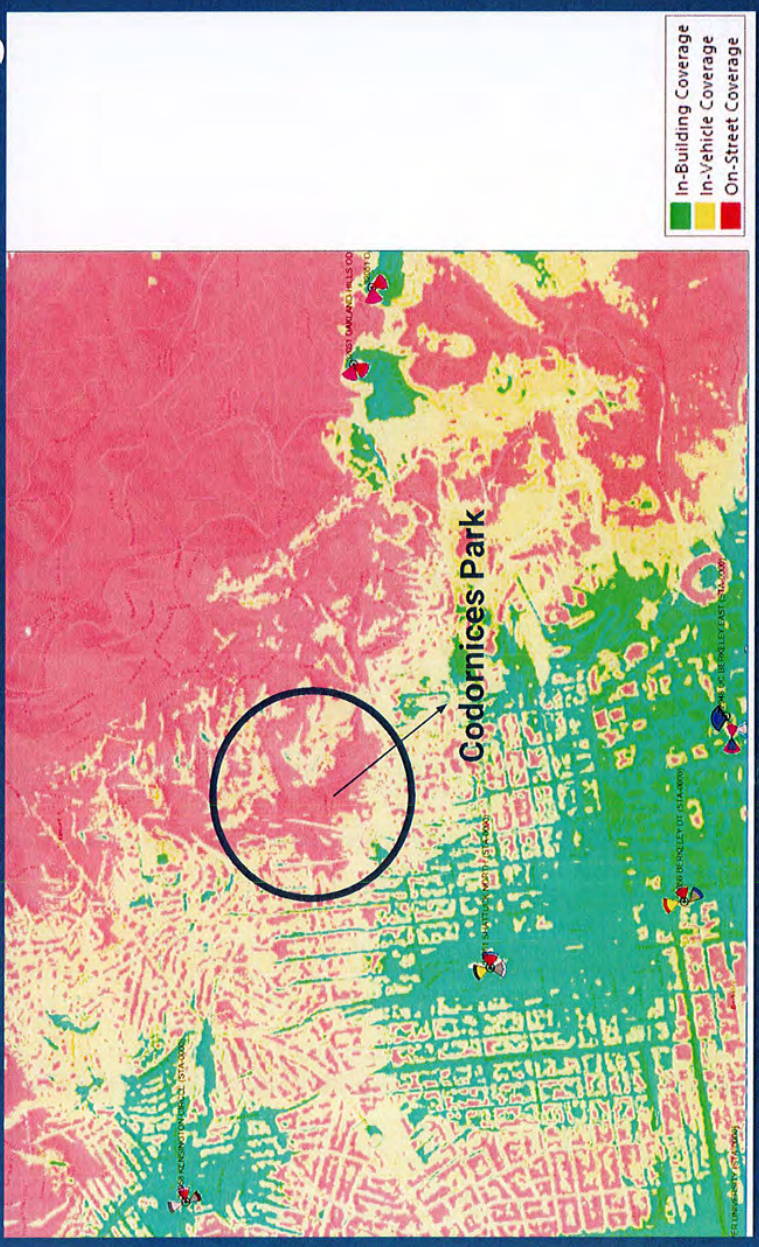
## Does Verizon need improved coverage?

Verizon's application statement related to **need**:

As shown on the coverage maps included with this application, **Verizon coverage in the immediate vicinity of the proposed facility is poor**. By building the proposed facility Verizon will dramatically improve coverage in the area, particularly inside of homes and other buildings. This will enable Verizon subscribers to more easily make contact with the world around them, including emergency services, such as law enforcement, fire departments, ambulances, etc.

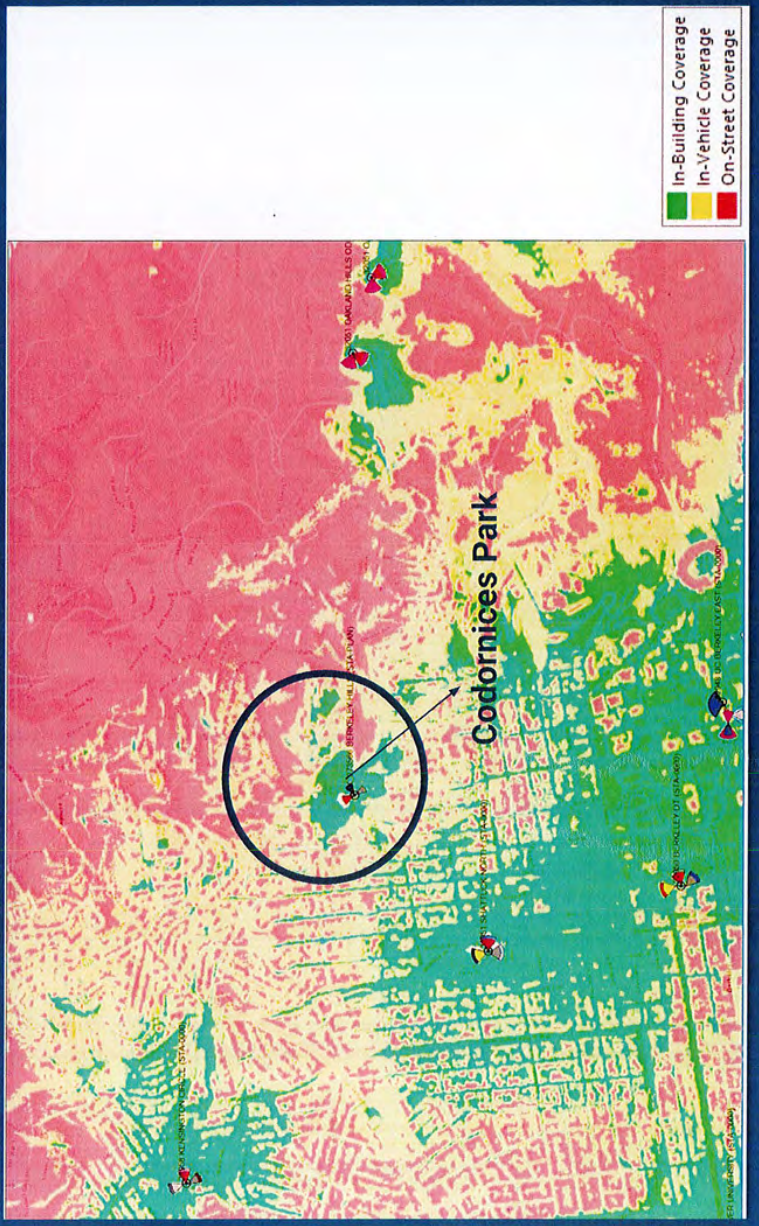
# What is the evidence that coverage is poor?

- Simulated model from Verizon's permit application
- Reflects poor coverage in the area
- How is this simulation performed?



# And here is the coverage with the tower

- Seems like an improvement in coverage



# RootMetrics is independent and unbiased



RootMetrics  
by nms swast

RootScore Reports    CrowdsMap    Products    Methodology

Providing insights to build a better mobile experience.

Better information leads to a better mobile experience. We scientifically test mobile network performance around the world, then transform the mountains of data we collect into easy-to-understand insights that help the industry improve and give consumers an accurate picture of performance.

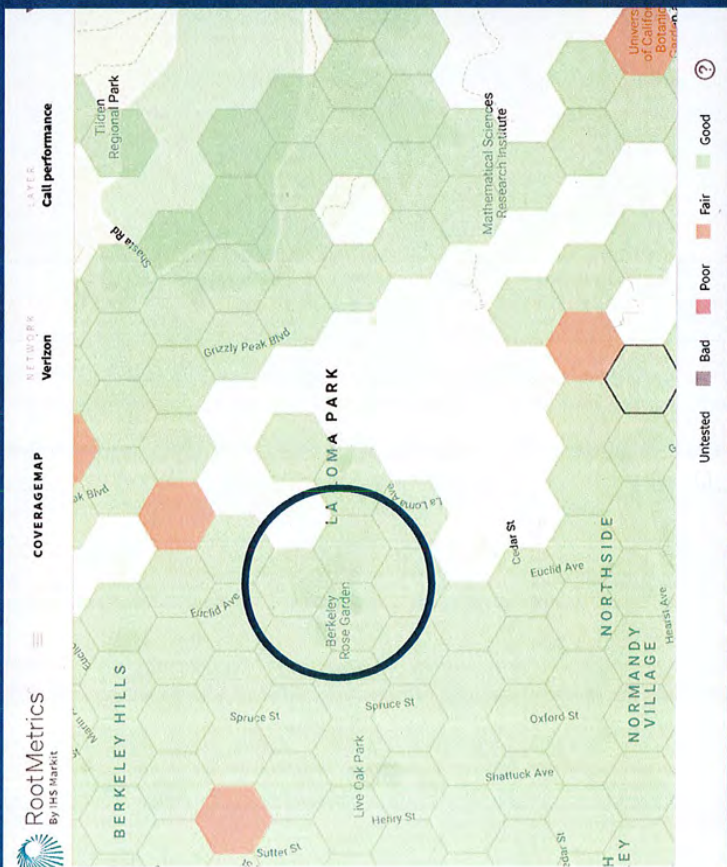
## The standard for mobile performance measurement.

We're independent in our testing, unbiased with our results, and cited by the industry, press, and consumers alike. With nation-to-neighbourhood reporting, a dedicated analytics department to verify all results, and end-to-end insights that stretch beyond the network itself, our unique approach has changed the game.

- RootMetrics is an **independent mobile analytics firm**
- Offers **scientific insights** into how users experience networks under real-world conditions
- Use off-the-shelf smartphones to test for calls, texts and data services, day and night
- Nation to neighborhood reporting with a dedicated analytics department to verify results
- Cited by **industry, press and consumers**

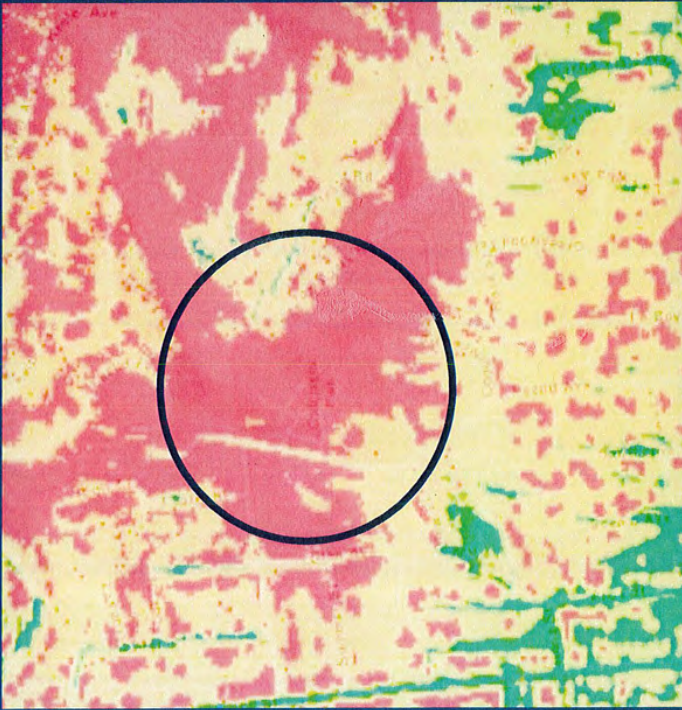
# RootMetrics coverage map shows good coverage

- Coverage is **Good** all around
- White is **Untested**
- **No Bad or poor areas** at all anywhere on the map
- Only a few fair areas anywhere close by
- Scientifically **tested** mobile performance



# Direct coverage compare - doesn't compute

Coverage in the **Red**

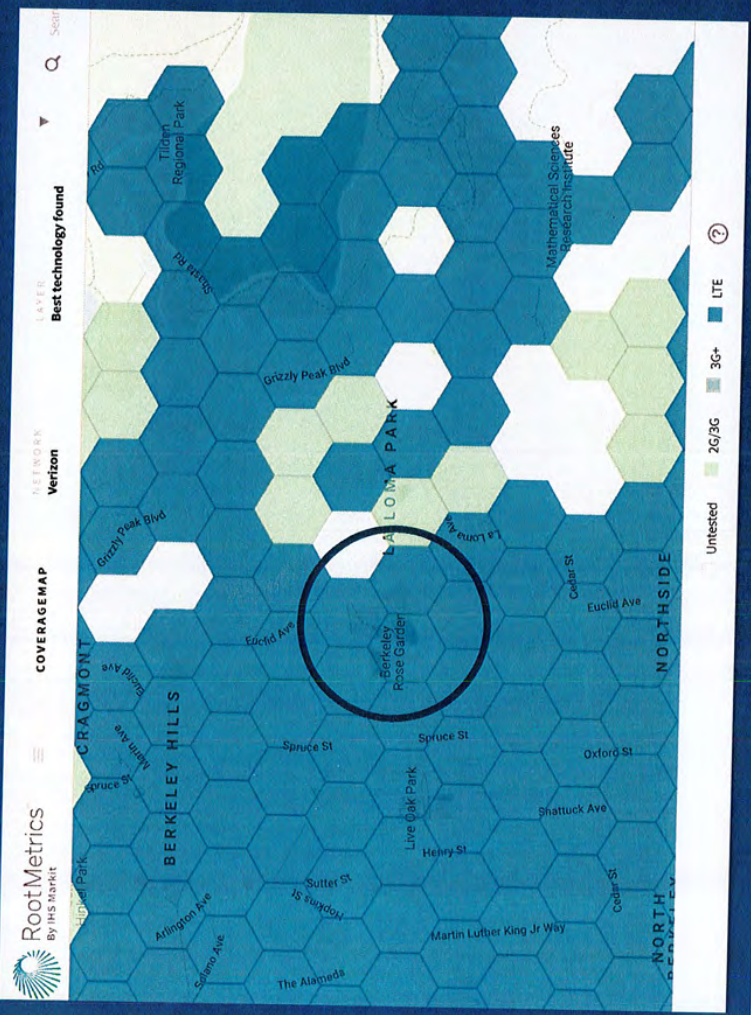


Coverage in the **Green**



# The best technology is already in the area

- Best Technology is already available
- LTE (4G) is nearly everywhere



# Verizon's interactive map shows excellent coverage

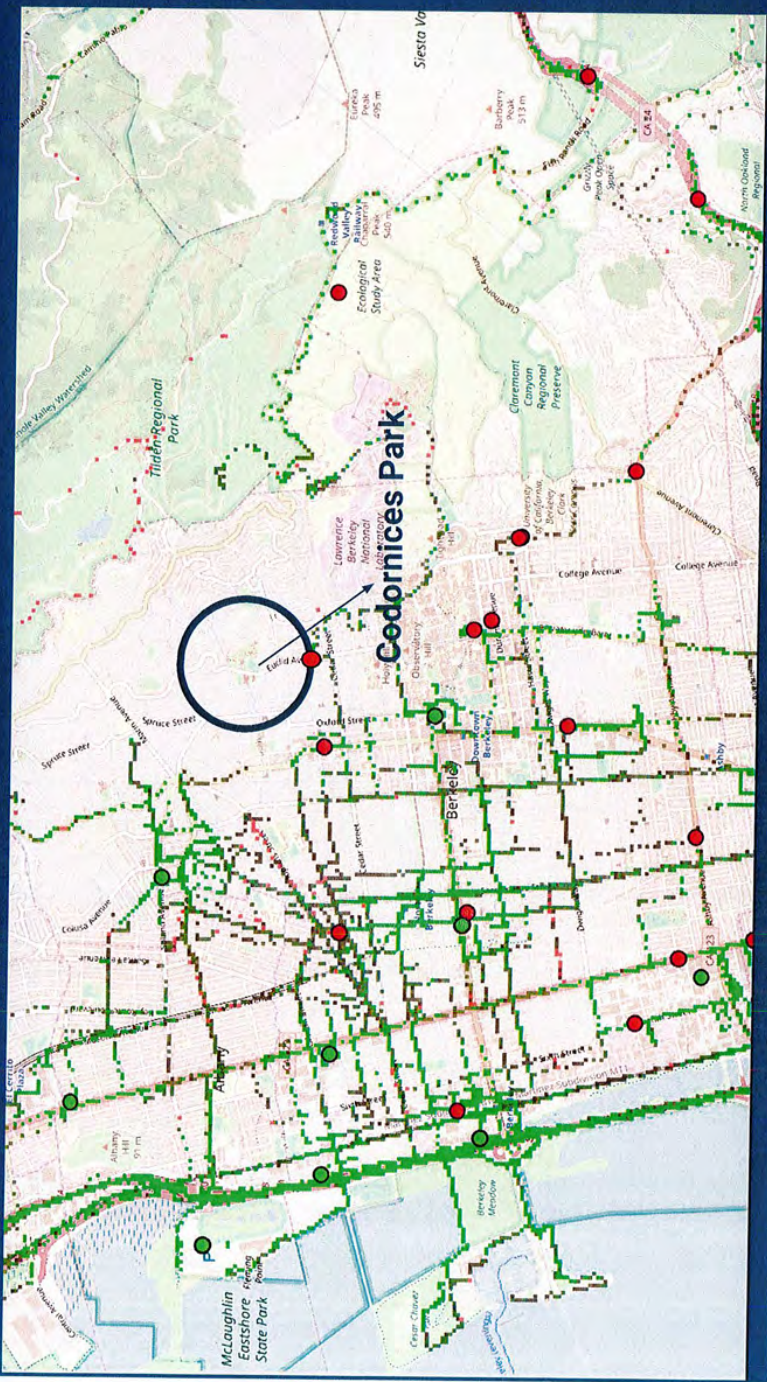
- 4G LTE quality is excellent
- Right across the street from 0 Euclid





We have plenty of Verizon cell towers in the area already

25 cell locations



# 18 existing cell locations within 1.5 miles

## Verizon

1. 1540 Shattuck; .547 miles
2. 1804 Euclid Ave; .58 mile (recently approved)
3. 2015 Shattuck; .91 mile (pending approval)
4. 2002 Acton; 1.58 mile

## Sprint

1. 1600 Shattuck; .599 miles

## AT&T

1. 1625 Shattuck; .61 miles
2. 1632 University; 1.34 mile
3. Hearst & Arch; .69 mile
4. 2116 Bancroft; 1.19 mile

## MetroPCS

1. 1936 University; 1.06 miles
2. 2150 Shattuck; 1.05 mile
3. Hearst & Arch; .69 mile
4. 2116 Bancroft; 1.19 mile

## T-Mobile

1. 2095 Rose; .47 miles
2. 2054 University; .96 mile
3. 1725 University; 1.22 mile
4. 1810 Euclid; .58 mile
5. 1330 Cedar; 1.47 mile
6. 2116 Bancroft; 1.19 mile

**More than  
enough towers**

**PETITION TO URGE THE ZAB TO DENY THE APPLICATION FOR A 50FT MONOPOLE WITH SIX ANTENNAS AT BERRYMAN RESERVOIR - USE PERMIT # ZP-2018-0236**

We the undersigned residents of Berkeley are adamantly opposed to the installation of a 50 ft monopole with 6 antennas at the north end of the EBMUD Berryman reservoir and urge you to DENY the permit.

As designed, the installation is a hideous looking, industrial structure. It would be constructed in close proximity to an extremely well-used recreational area that includes Codornices Park and the Berkeley Rose Garden. Both of these City-owned resources are regional and international destinations, hosting hundreds of thousands of visitors and children's activities annually. Having this unsightly tower with antennas in this location is a visual and sonic blight on those public facilities.

In addition, the surrounding neighborhood is residential. There are many historic and architecturally significant resources including the homes along Rose Walk and The Berkeley Rose Garden. The proposed 50 ft steel tower will be visible from many of the surrounding homes, especially those to the east and the south of the Berryman Reservoir. The ugly structure will intrude into the view corridor, impacting real estate values. No analysis on the view impacts to these homes was conducted by the applicant and no photo simulations were presented to clarify the extent of the intrusion.

ZAB members have the authority to deny Use Permit #ZP2018-0236. Please exercise everything within your legal authority and DENY the application for the installation of this inappropriately placed monstrosity in Berryman Reservoir.

Name	Address	email
Tom Moeller	1400 Le Roy Ave Berkeley, CA 94708	thomas@braintankstudios.com
Jennie Brown	1400 Le Roy Ave 94708	Jennie.Rachael@gmail.com
GEORGETTE DEVAUX	1730 Le Roy Ave, 94708	GMDELVAUX@COMPCAST.NET
Shirley Issel	1464 Le Roy Ave 94708	ShirleyIssel@icloud.com
David Schweidel	1480 Le Roy Ave 94708	schweidel@stglobal.net
Linda Schweidel	1480 Le Roy Ave 94708	linda@fmllaw.com
MARY Goldstine	1838 San Juan B 94707	goldstine3@gmail.com
Daniel Goldstine	1838 San Juan Berkeley 94707	goldstine3@gmail.com
Joy CARLIN	981 CRESTON Rd Berkeley 94708	carlinx2@gmail.com
Lynn Glaser	41 Hill Rd 94708	redpaint@lynnglaser.com
Jessie Modak	1530 Loma Ave 94708	smodak@stglobal.net

## Permit # ZP2018-0236: Euclid Cell Phone Tower

From: Dawn Hawk (dawnhawk1@yahoo.com)

To: zab@cityofberkeley.info; lnawfal@cityofberkeley.info; clerk@cityofberkeley.info

Cc: jarreguin@gmail.com; kateha76@gmail.com; sophie@sophiehahn.com; SWengraf@ci.berkeley.ca.us

Date: Thursday, June 27, 2019, 7:13 AM PDT

Dear Members of the ZAB,

I am writing in strong opposition to Verizon's application to construct a 50' cell tower with 7 antennas and adjacent structures on/in the Berryman Reservoir. There are many detailed letters of opposition already in the record. I wish to add my concerns:

Money for nothing – I am confused about whether it is the City of Berkeley that will benefit in receiving Verizon \$\$, or EBMUD which is the lessor of the property from the City. Whether our City or our public utility receives payments, this is money for nothing. This tower will just be the beginning – the camel's nose under the tent. The commercial and competitive race to provide faster, more connected cell phones is on. Already our power poles are drooping from all the newly hung fiber wiring. Let's not sell out our historical treasures and neighborhoods for a corporation's profit. From the staff report: "ENVIRONMENTAL REVIEW STATUS: Categorically exempt pursuant to Sections 15301 and 15303 of the CEQA Guidelines ("Existing Facilities and New Construction or Conversion of Small Structures")." This is specious to argue that as there is already a water reservoir on the property, therefore one can add a cell phone tower. But it is clear that the City will not deny any future conversion of the 50' tower into whatever Verizon wants to do next.

Fire risk – this 50-foot cell tower requires a generator filled with 132 gallons of fuel - on the Hayward fault. After a massive effort to educate Berkeley homeowners about fire safety and creating defensible space around their homes, why would the City turn around and allow this potential fire hazard to be installed in a high-risk fire and earthquake zone?

Noise – This cell tower will transform Codornices from a tranquil park into a commercial switching station. The noise from the generator and air conditioner will surely be amplified by being adjacent to the reservoir's steel tank, in the bowl of the reservoir and the Codornices watershed.

Safety/Radiation – there are health risks to nearby neighbors as well as health impacts to 1,000s of children and families and summer camp youth from around the Bay who use this park space year round.

Aesthetics – there will be a permanent adverse impact on the character and beauty of Codornices Park, the Rose Garden, the adjacent historic Rose Walk and the recently renovated Berryman Reservoir. These parks are Berkeley's treasures and some of the big draws for visitors to the City as well as its residents. These public spaces should not be destroyed by this hideous eyesore.

Across the country health experts, fire personnel, and entire communities are fighting back against this onslaught of cell towers within residential neighborhoods. As the letters in opposition show, Berkeley residents are also fighting back. Please consider these concerns carefully, stand up for Berkeley's core values, and deny this application.

Thank you,

Dawn Hawk  
180 Tamalpais Road

**Sent:** Tuesday, June 25, 2019 9:37

**To:** [zab@cityofberkeley.info](mailto:zab@cityofberkeley.info)

**Subject:** Opposition to Permit # ZP2018-0236 by homeowner

Dear Board Members:

I am an attorney and I reside at 178 Tamalpais Road, Berkeley, CA, where I have owned and lived in my home since 1980. I have been informed that your Board is considering whether to approve a permit to install a cell tower on the border of Berryman Reservoir/Codornices Park. Since my home directly overlooks this area and my 15 year old son and other children play in the area of the park I write to strongly object to this proposal and to request that your Board not approve the project. Among the many reasons why this cell tower project should not be approved are the following:

1. It would be inconsistent with the character of this neighborhood, which for years has been blessed with large natural trees, a placid park where children and families congregate, and beautiful views of the bay, unobstructed by ugly cell towers or other corporate eye sores. See e.g., *Vertex Dev., LLC v. Manatee Cty.*, 761 F. Supp. 2d 1348, 1362 (M.D. Fla. 2011)(attached)("[A]esthetics may constitute a valid basis for denial of a wireless permit if substantial evidence of the visual impact of the tower was before the board."). Verizon's application claims that "[a]dding a Verizon tower to this location will allow Verizon to cover the neighborhood without changing its character." That is an absolutely false statement as this neighborhood currently has no 50 foot towers with "(6) antennas, (6) remote radio units, ground equipment including a 30 KW diesel generator on a 132 gallon tank, and other equipment, cables and conduits."
2. There is no documented showing by Verizon or anybody else that a cell tower is necessary at this location. Verizon's application merely states: "This area is primarily residential and wooded, and provides few traditional locations for cell sites." That is a compelling reason to deny the application, not to grant it.
3. According to Verizon's application, their cell tower "will enable *Verizon subscribers* to more easily make contact with the world around them..." On its face, the project is intended not to benefit the public generally, but only those who are customers of Verizon. Verizon does not and cannot claim that their project is in the general public interest.
4. Putting up a fake and ugly 50 foot tall "pine" tower with (6) antennas and (6) remote radio units in a location directly in front of my unobstructed view of the bay would greatly diminish the value of my property and in fact would constitute an unconstitutional unjust taking and inverse condemnation of my property, as well as other property in the immediate area. It would also constitute a nuisance, interference with easement to light, air, and unobstructed view, servitude on adjacent land to limit size of trees, and would violate the duty imposed by conditional use permit not to obstruct the view. See, Dr. David Adams, *Information and Documentation of Adverse Health and Property Effects from Cell Phone Towers/Antennas and Low-Frequency Electromagnetic Radiation* (copy attached).

5. Verizon's application states that "Verizon proposes to install a monopole disguised as an evergreen tree. Antennas, remote radio units, and other related cables and equipment, would be mounted on the monopole. Other equipment cabinets, including a standby generator, would be installed on the ground near the monopole. Because it would be disguised as an evergreen tree, the monopole and attached antennas would have limited visibility from the neighborhood, as it would match the general appearance of other trees located in the vicinity. *This is evident from the photosimulations submitted with this application.*" (emphasis added). In fact, the materials attached to the application do not address, much less demonstrate, that "the monopole and attached antennas would have limited visibility from the neighborhood" or that this equipment would "match the general appearance of other trees located in the vicinity."

6. This tower would expose everyone in the area to dangerous levels of radiation, and Verizon offers no plan for the unbiased monitoring of radiation limits. See, Dr. David Adams, *Information and Documentation of Adverse Health and Property Effects from Cell Phone Towers/Antennas and Low-Frequency Electromagnetic Radiation* ("The adverse non-thermal biological and medical effects of low-frequency electromagnetic radiation (RFR, or Radio Frequency Radiation; microwave or "Wifi") are well documented in tens of thousands of published scientific studies - far more thoroughly, in fact, than were the effects of asbestos, DDT, dioxins, tobacco, or PCBs.") (citing and summarizing the studies). See also, *Vertex Dev., LLC v. Manatee Cty.*, 761 F. Supp. 2d 1348, 1363 (M.D. Fla. 2011) ("'[T]he Mount Shasta Bioregional Ecology Center in California studies on Cell Phone Tower health effects have shown that 'even at low level there is evidence of damage to cell tissue and DNA ...' ".) The only evidence to the contrary is a report commissioned by Verizon, which states: "The firm of Hammett & Edison, Inc., Consulting Engineers, *has been retained on behalf of Verizon Wireless...*" This firm has an obvious conflict of interest and their conclusions should not be credited. Verizon's application represents that "Verizon Wireless will pay the reasonable actual cost and administrative fees for the hiring of an *independent* qualified *engineering* consultant to evaluate any technical aspect of the proposed site", but it says nothing about the hiring of an independent radiation expert. A firm retained by Verizon is not "independent" and until a truly independent and qualified radiation expert evaluates the effect of this project it should not be allowed to go forward.

7. This tower will cause noise that will exceed Berkeley's noise ordinance. The only evidence to the contrary is a report commissioned by Verizon, which states: "The firm of Hammett & Edison, Inc., Consulting Engineers, *has been retained on behalf of Verizon Wireless...*" This firm has an obvious conflict of interest and their conclusions should not be credited. Verizon's application represents that "Verizon Wireless will pay the reasonable actual cost and administrative fees for the hiring of an *independent* qualified acoustic consultant to prepare or *independently* review an acoustic report on the equipment." A firm retained by Verizon is not "independent" and until a truly independent and qualified acoustic expert evaluates the effect of this project it should not be allowed to go forward.

8. This tower and its associated equipment will create diesel generator pollution in the upper grassy area of Codornices Park. Verizon's application states that it wants to install " a new Verizon wireless facility on a new 50' Monopine including: (6) antennas, (6) remote radio units, ground equipment *including a 30 KW diesel generator on a 132 gallon tank*, and other

equipment, cables and conduits as shown on the plans submitted with this application." The Santa Barbara County Air Pollution Control District has studied this issue and concluded:

*Have you considered the toxic impacts of diesel exhaust?*

Diesel soot, or diesel particulate, is the number one airborne carcinogen in California, and represents our state's most significant toxic air pollution problem. California Air Resources Board estimates that operation of an uncontrolled one-megawatt diesel engine for only 250 hours per year would result in a 50 percent increase in cancer risk to residents within one city block.

*Have you considered the other air pollution impacts and long-term effects on the regulation of businesses?*

A typical standby diesel generator produces 25-30 pounds of nitrogen oxides (NOx) per megawatt hour of power generated, 50 to 60 times the NOx pollution produced per megawatt hour by the typical mix of California gas-fired power plants. Nitrogen oxides are a smog-forming pollutant. Santa Barbara County just recently met the federal smog standard by a slim margin. If additional smog-forming emissions in our region cause our air to violate that standard again, local businesses will face additional air pollution regulations.

*What about permitting?*

Backup generators should only be used when absolutely necessary. Some generator installations may require permits, including APCD permits, or land use, fire, or building entitlements, and associated inspections. Stationary diesel engines 50 hp and greater require a permit from the APCD.

Santa Barbara County Air Pollution Control District, *Do You Really Need a Diesel Generator?*,

<https://www.ourair.org/do-you-really-need-a-diesel-generator/>.

In this case, a diesel generator is not “absolutely necessary”. It is being proposed solely for the benefit and convenience of Verizon customers.

9. This tower would heighten the risk of a fire in Codornices Park, the spreading of which could be devastating to the entire neighborhood and subject the City of Berkeley to huge liability for negligently approving such a project in the face of known risks. As one law firm tracking this issue states, “In some cases, Cell Towers have caught fire. With a simple visit to Youtube, you can watch multiple videos of a Cell Tower burning as it collapsed to the ground. Even their foundations have the capacity to fail.” See, Campenelli and Associates, *Do Cell Towers Collapse* ?, [https://anticelltowerlawyers.com/anti\\_cell\\_lawyer\\_1\\_020.htm](https://anticelltowerlawyers.com/anti_cell_lawyer_1_020.htm).

10. This tower will otherwise jeopardize safety. As the same law firm notes:

Like Smart Cars, Cell Towers are built to be economically sensible rather than being built to be as safe as possible. Moreover, the blinding pace of Cell Tower installations across the Country makes "quality control" over the manufacturing and installation processes virtually impossible.

As such, they present a very real danger of collapse, and the potential to cause harms such as property damage, and personal injury or death to anyone who might be unlucky enough to be near a 10 to 19\* story Cell Tower when it fails.

Unlike telephone poles, which consist of one solid piece of wood, Cell Towers are constructed of multiple individual components, the failure of one or more of which can cause a complete structural failure, and concomitant collapse.

Some of the most common areas and elements of failure which result in the collapse of Cell Towers are baseplates, flanges, joints, bolts and guy wires.

In some cases, Cell Towers have caught fire. With a simple visit to Youtube, you can watch multiple videos of a Cell Tower burning as it collapsed to the ground. Even their foundations have the capacity to fail.



For these reasons, it is imperative that local zoning authorities adopt and require strict compliance with setback requirements necessary to protect both local citizens and the public from the danger of collapse that Cell Towers present.

In this case, Verizon's application shows that the 50 foot cell tower would be installed immediately adjacent to a heavily used park and in the midst of a heavily wooded area. There is no setback requirement that will ensure that in the event the tower collapses it will not cause injury or death or a raging fire that could spread and also cause injury or death.

11. There is no post approval accountability for the design, operation, and maintenance of this project. Verizon's application states only that "[p]rior to obtaining a building permit to erect or install the proposed facility, Verizon Wireless will either secure a bond or provide financial assurances, in a form acceptable to the City Manager, for the removal of the facility in the event it is abandoned or the approval is otherwise terminated." It says nothing about a plan to ensure that the design of the tower meets the assurances of the application that the tower "would be disguised as an evergreen tree, [so] the monopole and attached antennas would have limited visibility from the neighborhood, as it would match the general appearance of other trees located in the vicinity." It says nothing about how the tower and its associated "[a]ntennas, remote radio units, and other related cables and equipment" would be operated and maintained so as to ensure that the risks identified above are not realized.

For all of these reasons, I strongly urge you not to approve of this project. In the end, it will not benefit the public but will endanger it. It will give rise to costly and time-consuming litigation that will consume precious resources that are better spent on more pressing problems like the education of our children and the homeless. It is opposed by the vast majority of citizens who live in the area. As one federal appellate court aptly concluded, "[t]he repeated and widespread opposition of a majority of the citizens ... who voiced their views-at the Planning Commission hearing, through petitions, through letters, and at the City Council meeting-amounts to far more than a 'mere scintilla' of evidence to persuade a reasonable mind to oppose the application." *AT & T Wireless PCS, Inc. v. City Council of City of Virginia Beach*, 155 F.3d 423, 431 (4th Cir.1998).

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[mb@michaelburtlaw.com](mailto:mb@michaelburtlaw.com)

COMMENTS BEFORE ZAB HEARING 6/27/2019

VERIZON CELL TOWER USE PERMIT APPLICATION #ZP2018-0236

This tower is incompatible with the character of the neighborhood, will block views, and will probably exceed the city's noise ordinance.

Section 23C.17.070B of the Berkeley Municipal Code states "facilities shall be compatible in scale and integrated architecturally with the design of surrounding buildings or natural setting." Section 23C.17.070C says "no readily visible antenna shall be placed in a location where it would impair a significant or sensitive view corridor," which is defined as "...any significant vista that substantially enhances the value and enjoyment of real property."

The view of any houses where views are impacted was not considered. The staff report's conclusion that the tower doesn't violate Policy LU-7, Neighborhood Quality of Life, or Policy UD-16, Context, or especially Policy UD24, Area Character is unsubstantiated. None of the options presented "respect the built environment in the area, particularly where the character is largely defined by an aggregation of historically and architecturally significant buildings."

The proposal includes the installation of a large diesel generator and four equipment cabinets with cooling fans. Noise measurements were taken at the generator running without load. More noise will be emitted running at full load. Nighttime measurements were not specified, when the noise would be most disruptive to nearby homes, especially since the generator may run continuously at night if there is a power failure.

B.M.C. §13.040.050 Exterior Noise Standard requires the measurement of noise levels to be made from any impacted property, not at the source of the noise. No such sound measurements were made. The staff assertion that the noise requirement was satisfied is incorrect. Furthermore, the acoustic effects of the generator and cooling fans being located in the bottom of a large bowl, next to a sonically reflective large steel tank, were not considered. Both these features would have the effect of amplifying and focusing the noise in unpredictable ways that would have to be field tested to determine their impact.

The staff report findings are not supported by the facts.

Please exercise your authority and deny the use permit.

Mark Berger

Testimony Opposed to #ZP2018-0236

Berryman Reservoir Cell Phone Tower

Thank you for the opportunity to speak against the Verizon proposal. My name is Susan Nunes Fadley, I live in the neighborhood, and yes, I use a cell phone.

I'd like to remind the board that EBMUD went through an extensive EIR process that involved private entities, the City, and the community, and that earthquake safety wasn't its only concern. EBMUD hired Muller and Caulfield Architects and the landscape architect firm, Dillingham Associates, to reach out to the community and finalize a design that would enhance the surroundings and be appreciated by the public. The architects responded at length to people's concerns and eventually persuaded the community to accept the design.

The result of this collaborative process is there for everyone to access and enjoy.

If I may quote from the architect's website: "We design to enhance the harmony and beauty of existing landscapes and communities. The intention being to make the entire neighborhood look better." Design elements are "too important to relegate to civil engineers."

This space is too beautiful and too important to relegate to Verizon's engineers and its customers. If you follow the logic of the application and the staff report, then you will have to approve other companies that argue the same need.

Please don't allow this door to open.

Thank you.

Kelley Hart  
1350 Scenic Avenue  
Berkeley, CA 94708

Zoning Adjustments Board  
Land Use Planning Division  
1947 Center Street  
Berkeley, CA 94704  
RE: Proposed Cell Tower at 0 Euclid Avenue, #ZP2018-0236

Late Communications  
Zoning Adjustments Board  
JUN 28 2019  
**RECEIVED**  
*at Meeting*

Dear Members of the Board,

Since my first letter to you, I learned that this is not the beginning of your process but the end of your process. With a close review of Verizon's application materials available on the City's website, I believe there are several deficiencies in this application, and for that reason it should be rejected.

1. It doesn't meet the City of Berkeley's zoning requirements.

#### **23B.32.040 Findings for Issuance and Denial and Conditions**

According to this provision, **the Zoning Adjustments Board (ZAB) cannot approve this use permit unless you find that "it will not be detrimental ...or injurious to property and improvements of the adjacent properties, the surrounding area or neighborhood or to the general welfare of the City."**

Property values for those who live in this block of Euclid opposite the reservoir, along Codornices Road, and the top of Bay View will most certainly decline. Instead of having an unobstructed view of beautiful trees and open space, they will have a partially obstructed view of an industrial cell tower. While coming/going along Euclid Avenue and Bay View passersby do not currently see the reservoir or any of its related infrastructure. That is all hidden within the reservoir. This cell tower, initially 50 feet but allowed to increase to 70 feet,<sup>1</sup> will be visible from outside the reservoir berm. Painting the pole and the many antenna green (staff recommendation) or making it look like a fake tree is not going to fool anyone into thinking it's pretty. Every time someone is driving to/from one of those houses they will now see a cell tower.

There is ample evidence that homes near parks have increased property values, usually between 8% and 20%.<sup>2</sup> There is no evidence that homes near cell towers have increased property values. To the

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<sup>1</sup> This is due to FCC rules combined with Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012. <https://ehtrust.org/cell-phone-towers-lower-property-values-documentation-research/>. See also a good summary here: <https://www.nh.gov/osi/planning/resources/wireless/deploying.htm> The New Hampshire state government provides a succinct explanation that under federal rules, local governments must allow collocation (after a tower has been approved), and collocation can entail adding 10% or 20 feet, whichever is greater, to the top of an existing tower.

<sup>2</sup> [http://depts.washington.edu/hhwb/Thm\\_Economics.html](http://depts.washington.edu/hhwb/Thm_Economics.html) Language from that article: "Homes that are adjacent to naturalistic parks and open spaces are valued at 8-20% higher than comparable properties, with the positive price effect declining to near zero about ½ mile away." There are four footnotes for this citation, quoting articles written between 1988 and 2001. The most recent article was written by John Crompton, whom I met and heard

contrary, homes near cell towers sometimes decline in value by 20%.<sup>3</sup> Some homeowners could potentially experience up to a 40% loss in value (the 8 -20% surplus for proximity to the park and an additional 20% for their now-ugly views.) To prove that there will be no decline in value, because this is a residential neighborhood adjacent to two lovely parks with the utility hidden from view, the applicant would need to do a lot more than say that because there is already a utility here no one will be negatively affected.

### **23C.17.100 Findings Required for Approval**

According to B3 of this provision, **“In order to approve any Use Permit or Administrative Use Permit under this chapter, the Zoning Adjustments Board or the Zoning Officer must make the following findings... “that the facility is necessary to prevent or fill a significant gap in coverage or capacity shortfall in the applicant’s service area, and is the least intrusive means of doing so.”** The applicant has used an RF computer simulation model without any real data to demonstrate a gap. Additionally, Verizon’s claims of need have not been verified by an independent third-party consultant. Please see Attachment 1. This is a screenshot from RootMetrics website of Verizon’s coverage performance, using real data.<sup>4</sup> RootMetrics’ data demonstrates that Verizon has no gap in coverage in this area. There are some places where no data has been collected, and so we do not know if there is a gap there. But for all of the places where Verizon has data, they have excellent coverage. RootMetrics data is consistent with Verizon’s own website, which indicates that there is already excellent coverage and “call performance” at the proposed location.

The “peer review” in the application did not require real data nor perform any type of analysis of real data to support the applicant’s finding that this tower is necessary to prevent or fill a gap in coverage or capacity in the applicant’ service area. The peer review didn’t address the issue of need or coverage gap at all. They simply regurgitated a bunch of rhetoric about emissions standards. That doesn’t properly evaluate the claim that this tower is necessary and the least intrusive means.

Attachment 2 contains a list of map of installations nearby, and proximity to the proposed tower is excellent. The applicant should have to prove why Verizon can’t meet their objectives by co-locating on

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speak about 5 years ago. He is still writing and publishing on these topics and economists in the park space still use these numbers.

<sup>3</sup> National Institute of Science, Law, and Public Policy found: 79% of people surveyed would not buy a property within several blocks of a cell tower; 94% of people would pay less or be less interested in a property near a cell tower; Market analysis of home sales showed properties reduced by 21% near cellular base stations. <https://www.emfanalysis.com/wp-content/uploads/2016/04/Impact-of-Cell-Towers-on-House-Prices.pdf>. More research findings and professional opinions on this subject are available here: <https://sites.google.com/site/nocelltowerinourneighborhood/home/decreased-real-estate-value>

<sup>4</sup> RootMetrics is an independent mobile analytics firm that offers scientific insights into how users experience networks under real-world conditions. They provide nation to neighborhood reporting with a dedicated analytics department to verify results. They are often cited by industry, press and consumers.

these existing towers before they can justify a new one. They should also be required to demonstrate that they are already using 4G hardware on all of their installations. It appears that at least one installation may be using only 2G or 3G hardware. If they would like to provide better service to the area, they should upgrade that hardware.

According to 23C.17.040 Minimum Application Requirements, **the applicant must provide “A statement of the telecommunications objectives sought for the proposed location,... whether it is the least intrusive means of doing so, and whether there are any alternative site that would have fewer aesthetic impacts while providing comparable service.”** The applicant did not meet this requirement. Its entire analysis was that because this is on a “utility” (EBMUD reservoir), then it is aesthetically consistent. This is what Verizon says: “The proposed location is most appropriate as it will allow Verizon to achieve its coverage objectives, while causing the least impact on the neighborhood. This EBMUD parcel is already used for utility purposes. Adding a Verizon tower to this location will allow Verizon to cover the neighborhood without changing its character.” The issue is that because of the topography and a lot of work to hide the utility, it doesn’t currently look like a utility. Adding a tower there will actually change the aesthetic because it will not be hidden by the topography.

2. Verizon’s proposal is not consistent with the General Plan.

**Policy LU-7 of the General Plan is: “Neighborhood Quality of Life, Action A: Require that new development be consistent with zoning standards and compatible with the scale, historic character, and surrounding uses in the area.”**

The section above explains how Verizon’s proposal is inconsistent with zoning standards. Additionally, it is inconsistent with the other elements, as follows:

- Scale: (though explicitly exempted) it will exceed the height limits that everyone else in this residential neighborhood has complied with. And once it is approved, they can add 20 feet to it without any further review/oversight.<sup>5</sup> It will stand out like a sore thumb in this clearing created for the reservoir.
- Surrounding uses: there is a carefully concealed reservoir tank (not visible from any of the public streets or parks), two beautiful and historic parks, and residences. Even the telephone pole utilities along Euclid have been undergrounded. So this will be the only visible utility along Euclid.
- Historic character: the Rose Garden, across the street from the cell tower, reflects Berkeley’s historic arts and crafts style.

In sum, it is a residential neighborhood and the surrounding uses are two beautiful public parks and many single-family homes. The historic character is Berkeley’s arts and craft architectural style. The homes along Codornices Road are some of the most charming in all of Berkeley. There is also historic Maybeck home ½ block from the proposed tower. Painting the cell tower green will not make it consistent with the neighborhood or the parks. There are no industrial or commercial uses in this neighborhood for which a 50-70 foot cell tower would be compatible. There is a discreet water tank

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<sup>5</sup> See footnote 1.

hidden within a drinking water reservoir that EBMUD has surrounded with expensive natural landscaping (albeit still young since the reservoir was dramatically remodeled not long ago.) From the roads, the sidewalks, and the parks, there are no views of commercial or industrial uses. This would be the first. The application includes a viewshed analysis that understates the aesthetic damage that will be done by this project.

Not long ago, residents and EBMUD spent a lot of time and resources to make sure that the water tank was carefully concealed from residents and park visitors, and that the land around the reservoir is consistent with the residential neighborhood and Arts and Crafts feel of the Berkeley Rose Garden, a critical landmark for the City of Berkeley. I disagree with the staff report that painting the pole of the cell phone green will make it blend in with the neighborhood. It is terribly out of scale with the neighborhood. And I'm not the only one who feels that way. In just a few hours over a few days, Lucinda Reinold (my neighbor) and I found 70 other people who agreed with us. Many of them were visitors from other parts of California, and visitors from other parts of the country. See attached petition (paper version for those I encountered in the park or on nearby streets).

3. It's reckless to allow EBMUD to lease a portion of the reservoir's storage capacity for a cell tower.

EBMUD and the applicant are proposing to put the tower in the basin itself. This is ridiculous. This land is intended for use as a drinking water reservoir. I spoke briefly with the Public Relations specialist for EBMUD (Charlotte?) and she reassured me that the current tank (enclosed within the basin) is more than adequate to meet current and projected need, which is estimated through 2040. But EBMUD shouldn't be compromising drinking water storage capacity for our future population, which is exactly what they are doing with this project. I worry that we will be locked into a financial situation with Verizon and be unable to utilize the capacity of this reservoir when it is needed, which is just a matter of time. Also, to keep the cell tower project from blocking one of the only two access points to this un-staffed reservoir, they're proposing to put it on a very steep slope of the basin itself, about 5-7 feet from the access path. In an earthquake or a fire it could fall into the reservoir basin or across the path, making it impossible for EBMUD personnel or other emergency personnel to service or operate the distribution of water from the reservoir when it is most needed. This is the sole source of drinking water for residents beneath the reservoir (it must get into this reservoir before it is then piped downstream to users).

4. There is an error in the peer review RF report, as it grossly mischaracterizes the controlled zone for radiation. Once the cell tower is fully built out, people visiting Codornices Park and close-in neighbors may be exposed to radiation exceeding FCC's limits.

Please see Attachment 3 for an exact copy of page 10 of the peer review RF report. The RF peer review report, authored by Telecom Law Firm (TLF), calculates that the radiation will project out about 100 feet

in three directions (at about 40 feet off the ground). Verizon calls this the “controlled access zone” because it is where radiation emissions are strongest.<sup>6</sup>

TLF says that the length of each arrow is roughly 100 feet. If that were true, the controlled zone for the “Sector C” arrow would not extend beyond the row of trees lining Codornices Park. This is a major miscalculation. If the Sector C arrow was 100 feet long, that would mean that the asphalt path is approximately 25 feet wide. The width of the asphalt path (including the curb) at that point on the map is exactly 11 feet. The diagram dramatically under-estimates the distance of the controlled zone. It actually extends about 70 -75 feet into the park, well into the grassy field used frequently for youth and adults for sports as well as dog walkers.

The report says this: “While the site as currently proposed is categorically excluded under the FCC Guidelines, TLF [Telecom Law Firm] notes that another round of independent RF analysis will be needed to determine whether a future carrier’s antennas will comply under the FCC’s Rules [referring to radio frequency limits] since the future carrier’s antennas will be installed lower than 10 meters AGL. For this reason, we recommend that the City direct Verizon to strike all ‘future’ elements from the Plans and the Application so that any future changes to this site only occur upon a subsequent planning application and then-current RF emissions analysis of the then-existing Verizon emissions and the proposed emissions of the future carrier(s).”<sup>7</sup> That’s a nice gesture, but the reality is whether they strike future plans from this application or not, Verizon will have the ability (because of FCC’s rules – see Footnote 1 above) to allow other carriers to collocate without any further input/restrictions from the City of Berkeley. According to the FCC, collocation can occur above the current pole or beneath the antenna planned for this pole. The only restriction is that if they go up, then they’re limited to 10% of the height of the pole or 20 feet whichever is greater. So, when Verizon decides to welcome co-location, we all lose – either they co-locate down the pole and people on the grassy field in Codornices Park may receive radiation exceeding FCC’s limits, or they go up, and the aesthetics are even worse and the uphill neighbors may get exposed to radiation exceeding FCC’s limits.

##### 5. Failed Notice Requirements

As a procedural matter, I believe that notice to the community did not meet the City’s requirements. Though residents within the legally defined zone may have received notice two weeks before the meeting that an application submitted, they were not able to view the full application at that time. I spoke with the staff contact for this project, Layal Nawful, mid-afternoon on Tuesday, the 18<sup>th</sup>, and she confirmed that the City had not yet posted all of the application documents on the City’s self-service website. Indeed, I could not find them there even on the evening of 6/26. There were still only two

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<sup>6</sup> From RF peer review memo p. 9: “Based on the transmitted frequencies and power levels disclosed in the H&E RF Report, Verizon’s emissions will create a worst case “controlled access zone” that extends to a maximum of approximately 100 feet horizontally from the face of the antennas at approximately the same height as the antennas emissions center.”

<sup>7</sup> Page 11 of Telecom Law Firm PC’s memo “Wireless Radio Frequency Planning Memorandum” dated 5/24/19 in the application file, here: [https://www.cityofberkeley.info/uploadedFiles/Planning\\_and\\_Development/Level\\_3\\_-\\_ZAB/2019-05-24\\_RF%20Peer%20Review%20Memo\\_0%20Euclid.pdf](https://www.cityofberkeley.info/uploadedFiles/Planning_and_Development/Level_3_-_ZAB/2019-05-24_RF%20Peer%20Review%20Memo_0%20Euclid.pdf)



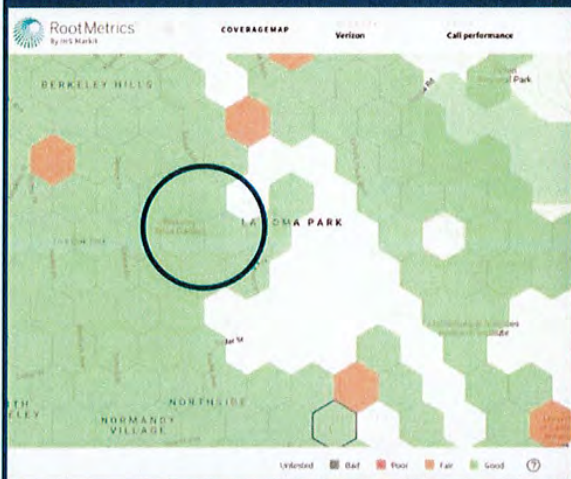
documents posted – the initial application and a welcome letter. However, I received full notice, on 6/21/19, when Loyal emailed me a specific link to a place on the city's website where all of the applicant's file was located. There were 9 other documents that were part of the application. In sum, there was inadequate notice because for the 14-day notice period, only 2 of the 11 documents comprising the application were available to the public on its self-service website established for exactly this type of communication.

Sincerely,

Kelley Hart

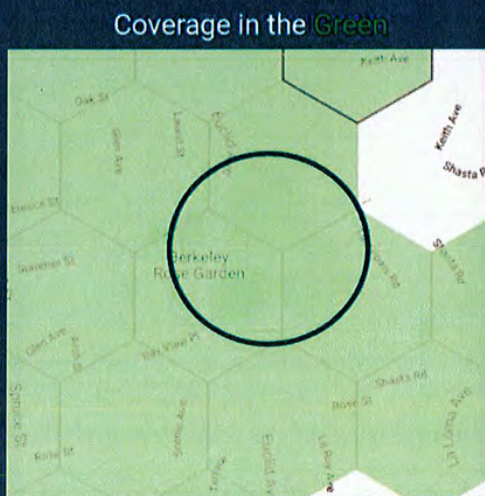
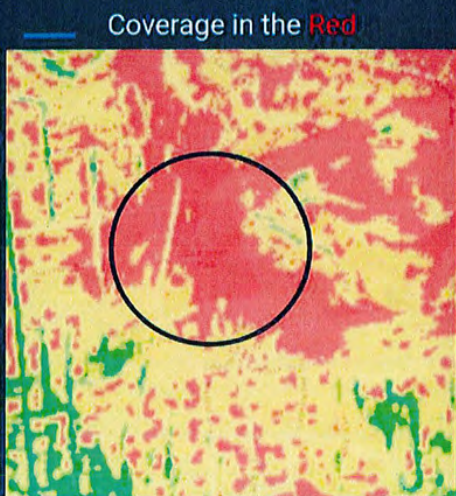
Attachment 1: RootMetrics real data (slide 1) and Comparison of Verizon's computer "simulation" to real data (slide 2)

## RootMetrics coverage map shows **good** coverage



- Coverage is **Good** all around
- White is **Untested**
- **No Bad or poor areas** at all anywhere on the map
- Only a few fair areas anywhere close by
- Scientifically **tested** mobile performance

## Direct coverage compare - **doesn't compute**



Attachment 2:

## 18 existing cell locations within 1.5 miles

### Verizon

1. 1540 Shattuck; .547 miles
2. 1804 Euclid Ave; .58 mile  
(recently approved)
3. 2015 Shattuck; .91 mile  
(pending approv)
4. 2002 Acton; 1.58 mile

### Sprint

1. 1600 Shattuck; .599 miles

### AT&T

1. 1625 Shattuck; .61 miles
2. 1632 University; 1.34 mile
3. Hearst & Arch; .69 mile
4. 2116 Bancroft; 1.19 mile

### MetroPCS

1. 1936 University; 1.06 miles
2. 2150 Shattuck; 1.05 mile
3. Hearst & Arch; .69 mile
4. 2116 Bancroft; 1.19 mile

### T-Mobile

1. 2095 Rose; .47 miles
2. 2054 University; .96 mile
3. 1725 University; 1.22 mile
4. 1810 Euclid; .58 mile
5. 1330 Cedar; 1.47 mile
6. 2116 Bancroft; 1.19 mile

**More than  
enough towers**

Attachment 3: Duplication of page 11 of RF Peer Review Report

Rincon Consultants, Inc.  
May 24, 2019  
Page 10

See Figure 8 for the approximate azimuths and extents of the controlled zone.



**Figure 8:** Approximate (i) location of monopine, and (ii) azimuth orientations for all three sectors (Source: Google Maps; Annotated by Dr. Kramer).

The length of the red arrows in Figure 8 is about 100', which is the limit of the controlled zone, which is at least 41 feet above ground level at the location of the monopine.

[Balance of Page Intentionally Left Blank]

Signatories below oppose the placement of a cell phone tower at 0 Euclid Avenue, between the reservoir and Codornices Park. At 50 feet tall, the proposed tower will be out of scale with the neighborhood. Whatever disguise is attempted, it will be experienced as a large piece of industrial equipment intruding into one of Berkeley's most beloved and popular parks. It will be incompatible with and detrimental to the existing residential neighborhood.

	Printed name	Signature	Email Address	Zip Code	Date
1	Lucinda Reinold		lucindareinold@yahoo.com	94708	6/21/19
2	Danielle Witter		Danielle.Witter@comcast.com	94708	6/21/19
3	MICHAEL PRAIS		MIKEPRAIS@GMAIL.COM	94708	6/21/19
4	Willard Romney		romneywillard@comcast.com	94708	6/21/19
5	SUSAN Reinold		sreinold@comcast.com	94708	6/22/19
6	Jane Burak		jbura@cbsglobal.com	94526	6-22-19
7	ARTUN DAVE		artundave@live.com	94709	6/22/19
8	Robin McIntosh		robinmc20@gmail.com	94608	6/22/19
9	Cassie McINTOSH		cassandra.mclintosh@gmail.com	94708	6/22/19
10	Lwes Devin McCaig		lud9245@colorado.edu	94706	6/22/19
11	Caroline Inghalls		CAROLINEINGHALLS@GMAIL.COM	94706	6/22/19
12	MARISA FRIOT		maris.friot@gmail.com	94706	6/22/19
13	Sam Agate		sagate@bu.edu	94706	6/22/19
14	Henry Rosenfeld		hrosenfeld@gmail.com	94706	6/22/19
15	Julien Kaufman		JulienK97@gmail.com	94706	6/22/19
16	DEVON WALZ		devon.walz@unrcc.com	92677	6/22/19
17	Anatalla Holland		ana@anatariaholland.com	94703	6/22/19
18	Isaac Noyes		isaacnoyes2@gmail.com	94703	6/22/19
19	monica varriade		wello@monicavarriade.com	90277	6/22/19

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	Printed name	Signature	Email Address	Zip Code	Date
20	Nannan Burch		nannanburch@gmail.com	94559	6/22/19
21	Megan Butler		Megkate25@gmail.com	94558	6/22/19
22	Warren Stewart		benb_stewart@yahoo	94558	6/22/19
23	Paul Skomsvold		Paul.Skomsvold@gmail.com	94721	6/22/19
24	Anna Antoniou		annaanton@gmail.com	94721	6/22/19
25	JEFF REE HUNT		JEFF@FARWOLD.COM	94708	6/24/19
26	Paul Hunt		stambrosebbk@gmail.com	94682	6/24/19
27	Marina Dalia-Hunt		mfhnt@umuch.edu	94303	6/22/19
28	Peter Hunt		peter.malcolmhunt@gmail.com	94708	6/22/19
29	Lance More		lmore@central.ru	80004	6/22/19
30	Marysa More		mmore@carlthorp.org	90066	6/22/19
31	John More III		johnmore@gmail.com	90066	6/22/19
32	John More Jr		jmore@central.com	80004	6-22-19
33	Stephen Bedrick		SBBedrock Ccomcast.net	94707	6-23
34	Chris Luke		chrisluke@yahoo	94805	6/23/19
35	Mariko Inoue		mrk1003@yahoo.com	94704	6/23/19
36	Kira Abrams		Kiraabrams@gmail	94706	6/23/19
37	Bred Walski		bwalski@gmail.com	94707	6/23/19
38	Chris Baum		CRBAUM12@hotmail	94609	19/23/2019

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	Printed name	Signature	Email Address	Zip Code	Date
39	Jerrold Scheidt		jerrold-scheidt@yahoo.com	94707	6/23/19
40	Porter Smith		Porterdonovan@me.com	94703	06/23/19
41	Holden Smith		holdenstuart@me.com	94703	06/23/19
42	Erica Ruggs		ericajoy@me.com	94703	6/23/19
43	Amanda Kalra		considerpeace@gmail.com	94505	6/23/19
44	Kate Clark		Katemeyers@hotmail.com	94707	6/23/19
45	Patricia Clark		patrickspencer@me.com	94707	6/23/19
46	Melinda Suter		melinda.suter@comcast.net	80128	6/23/19
47	Leonardo Torco		leonardorealestro.com	94708	6/23/19
48	Sarah Entine		Sarahelizabeth625@yahoo.com	94707	6/23/19
49	Walt Opie		waltopie@gmail.com	94707	6/23/19
50	Ed Albarrak		edalbarrak@gmail.com	94707	6/23/19
51	Joseph See		joseph.see@gmail.com	94707	6/23/19
52	Carlynn See		''	94707	6/23/19
53	Sarah Cousins		SARAH@SARAHLOUSOS.COM	94707	6/23/19
54	Delaney Inman		delaney.inman@berkeley.edu	94709	6/23/19
55	Kermiti Espinoza		kpeddi@me.com	94704	6/23/19
56	Kranthi Raj Velanki		Kranthi.320@gmail.com	94704	6/23/19
57	Lee Bivis		Leebee123@msn.com	94705	6/23/19

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	Printed name	Signature	Email Address	Zip Code	Date
58	Lisa Grodin		lisasgrodin@notasabona.com	94708	6/23/19
59	Dina Hennings		Henri@uczdina@att.net (415) 240-3667		6/23/19
60	Janet Madani		janetmadani@yaho.com	94531	6/23/19
61	Hilary J Hennings		Hilary.Hennings@gmail.com	94531	6/23/19
62	Jessica Maldonado		Jessica.maldonado7@gmail.com	94531	6/23/19
63	Zoe K Howard		Zoe.k.howard3@gmail.com	94531	6/23/19
64	Laura DRAETTA		Ladretta@gmail.com	94708	6/23/2019
65	DORSA BRAZIN		dorbraz@gmail.com	94707	6/23/19
66	EDUARDO CAVENZAS		ECAVENZAS@gmail.com	94707	6/23/19
67	Amina Bani		amina.bani@yahoo.com	94705	6/23/19
68	Sara Mahdavi		saramahdavi@ritmel.com	94710	6/23/19
69	ESIC GUTTSCHUSS		esicgutschuss@chotuw.com	94705	6/23/19
70	JOANNA KNABE		knabejoanna@gmail.com	94118	6/23/19
71	Grace Bridges		gracebridges@att.net	94708	6/24/19
72	Josselin Gautier		josselingautier@icloud.com	94908	6/24/19
73	Christine Fasano		christine@christinefasano.com	94708	6/27/19
74	Phoebe Sargent		phoebe.s@earthlink.net	94708	6-27-19
75	Regina Myers		regina.myers@gmail.com	94708	6-27-19
76	Athena Myers		athenamyers@gmail.com	94708	6/27/19



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	Printed name	Signature	Email Address	Zip Code	Date
77	Steve Tracy		fracy.steve@att.net	94708	6/27/19
78	Justin Lombardelli		jlombardelli200@gmail.com	94708	6/27/19
79	LLOYD MORGAN		LLOYD.L.MORGAN@GMAIL.COM	94709	6/27/19
80	Louise Palmer		louiseophia@gmail.com	94708	6/27/19
81	Antoinette Spem		tweik@jgc.org	94707	6/27/19
82	Angelina DeAntonio		angelina.aoce.lotclothing.com	94708	6/27/19
83	Robert Roth		Rothappp@icloud.com	94708	6/27/19
84	ERIC POWEN		ERIC@ERICPOWEN.COM	94710	6/27/19
85	CHRISTIAN RAISNER		clraisner@outlook.com	94708	6/27/19
86	OLIVER RAISNER		angelina@ocelotclothing.com	94708	6-27-19
87	MARK BERGER		markberger@comcast.net	94708	
88	MARK VIN SEW		markvinsew@pacbell.com	94708	2-27-19
89	Susan Fadley		suminuleguard.com	94708	6-27-19
90	JONATHAN KHUNER		jkhuner@sonic.net	94708	6/27/19
91	Carole Marasone		daphnesflight@earthlink.net	94702	6/27/19
92	OREN LEIMAN		OREN@MYWORKSHOPS.NET	94708	6/27/19
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94	Late Communications Zoning Adjustments Board				
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JUN 28 2019

RECEIVED  
at Meeting

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National Toxicology Program

Headquartered at the  
National Institute of Environmental  
Health Sciences NIH-HHS

## Cell Phone Radio Frequency Radiation Studies

Late Communications  
Zoning Adjustments Board  
JUN 28 2019  
RECEIVED  
Meeting

Cell phones are used by 95% of American adults.<sup>1</sup> Given the large number of users, any harmful effects associated with cell phone use could be a significant public health concern.

Cell phones use radio frequency radiation (RFR) to transmit signals. The U.S. Food and Drug Administration (FDA) nominated RFR for study by the National Toxicology Program (NTP), due to widespread human exposure and limited information about the potential health effects of long-term use of cell phones.

### What did NTP study?

NTP conducted toxicology studies in rats and mice to help clarify potential health hazards, including cancer risk, from exposure to RFR used in 2G and 3G cell phones. 2G and 3G networks were standard when the studies were designed and are still used for phone calls and texting.

The \$30 million NTP studies took more than 10 years to complete and are the most comprehensive assessment, to date, of health effects in animals exposed to RFR. The results will help guide other studies of newer technologies.



### What did the studies find?

NTP studies found that exposure to high levels of RFR, like that used in 2G and 3G cell phones, was associated with:

- **Clear evidence of tumors in the hearts of male rats.** The tumors were malignant schwannomas.
- **Some evidence of tumors in the brains of male rats.** The tumors were malignant gliomas.
- **Some evidence of tumors in the adrenal glands of male rats.** The tumors were pheochromocytomas.

For female rats, and male and female mice, it was unclear, also known as equivocal, whether cancers observed in the studies were associated with exposure to RFR.

The conclusions were based on the NTP four categories of evidence that a substance may cause cancer.

- Clear evidence (highest)
- Some evidence
- Equivocal evidence
- No evidence (lowest)

*If you are concerned about potential health risks from RFR, the FDA suggests the following tips:<sup>2</sup>*

- Use speaker mode or a headset to place more distance between your head and the cell phone.
- Reduce the amount of time spent using your cell phone.







**Do the rat and mouse findings apply to humans?**

The findings in animals cannot be directly applied to humans for two key reasons:

- The exposure levels and durations were greater than what people may receive from cell phones.
- The rats and mice received RFR across their whole bodies, which is different from the more localized exposures humans may receive, like from a cell phone in their pocket or next to their head.

However, the studies question the long-held assumption that radio frequency radiation is of no concern as long as the energy level is low and does not significantly heat the tissues.

**Did NTP find health effects other than cancer?**

NTP found lower body weights among newborn rats and their mothers, especially when exposed to high levels of RFR during pregnancy and lactation, yet these animals grew to normal size.

**What factors contributed to the NTP conclusions?**

In addition to seeing tumors in the male rats with higher exposures to RFR, NTP scientists also observed other changes in the hearts of exposed male and female rats that supported their conclusions.

The evidence for tumors in the brain and adrenal glands was not as strong as what NTP scientists saw in the heart. However, the type of brain cancer observed is similar to a type of brain tumor linked to heavy cell phone use in some human studies.<sup>3</sup>

Still, the effects observed in the animals were relatively rare. NTP scientists are not sure why male rats appear to be at greater risk for developing tumors compared to female rats.

**How do the RFR levels used in the studies compare to typical human exposures?**

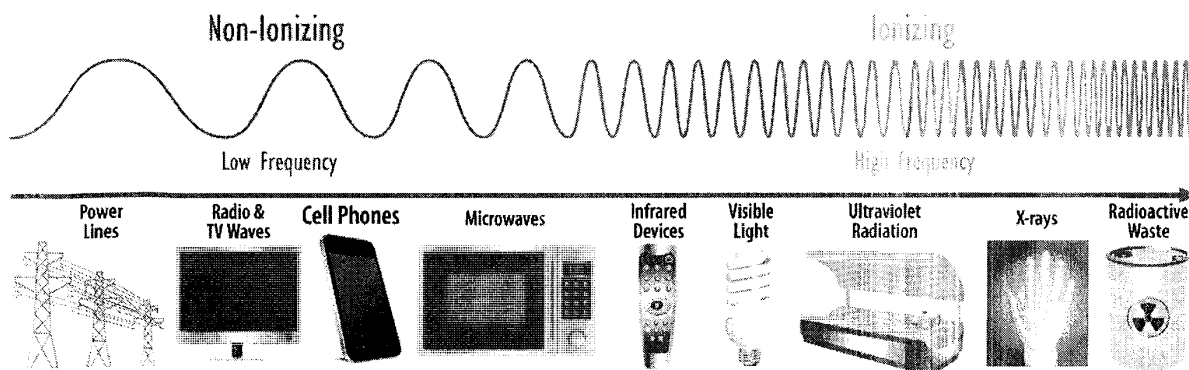
The lowest exposure level used in the studies was equal to the maximum local tissue exposure currently allowed for cell phone users. This power level rarely occurs with typical cell phone use. The highest exposure level in the studies was four times higher than the maximum power level permitted for local tissues.



**Why did NTP expose the animals' whole bodies to RFR?**

Although many previous studies focused on exposure to the brain, NTP scientists wanted to make sure that they were considering health effects to the whole body, especially since many people do not hold their phones next to their head much of time.

**Electromagnetic Spectrum**



RFR used in cell phones is at the lower frequency and lower energy end of the electromagnetic spectrum.



### What is the difference between electric and magnetic fields and RFR?

RFR is a subcategory of electric and magnetic fields (EMF), which are the invisible waves of force that surround any electrical device. The different types of EMF are distinguished by their frequencies. RFR is a form of low frequency, non-ionizing radiation that was thought to be relatively harmless.

### How were the studies conducted?

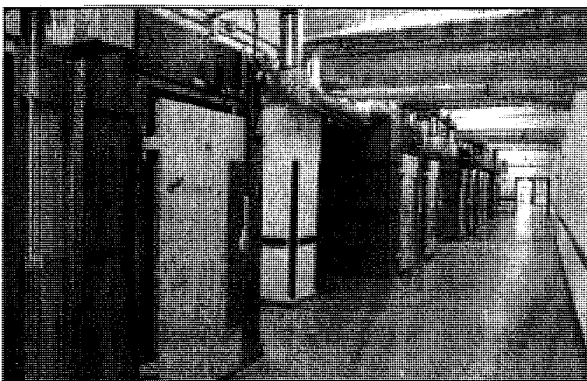
Rats and mice were exposed to RFR in special chambers for up to two years, or most of their natural lives. NTP scientists looked for a range of cancers and noncancer health effects.

Exposure to RFR began in the womb for rats and at 5-6 weeks old for mice. The RFR exposure was intermittent, 10 minutes on and 10 minutes off, totaling about 9 hours each day. The RFR levels ranged from 1.5 to 6 watts per kilogram of body weight in rats, and 2.5 to 10 watts per kilogram in mice.

The chambers were shielded rooms with a transmitting antenna that radiated RFR fields, plus rotating stirrers that generated a uniform field.<sup>4,5</sup> Pilot studies established field strengths that did not raise animal body temperatures excessively.<sup>6</sup>

The rats and mice were exposed to whole body RFR at frequencies of 900 and 1900 megahertz, respectively, from two technologies – Code Division Multiple Access (CDMA) and Global System for Mobile Communications (GSM).

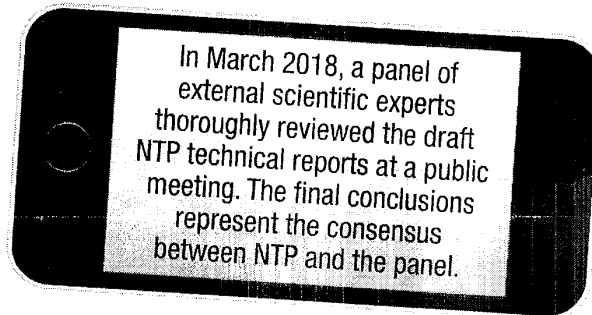
NTP and RFR experts from the National Institute of Standards and Technology (NIST) and the IT'IS Foundation designed and built the chambers specifically for these studies.



Chambers at the IIT Research Institute in Chicago where the studies took place

### What is the difference between CDMA and GSM?

CDMA and GSM are two common ways of transmitting cell phone signals in the U.S. and Europe. There are substantial differences in signal structure that may result in different RFR exposures, so NTP wanted to expose the animals to both modulations.



### How do the NTP studies relate to 4G, 5G, or Wi-Fi?

NTP studies of RFR used in 2G and 3G cell phones do not apply to 4G or 5G technologies. These newer technologies use different methods of signal modulation than NTP used in the studies. The NTP studies also did not investigate frequencies and modulations used for Wi-Fi.

### What were the studies' strengths?

NTP was able to control exactly how much RFR the animals received — something that is not possible when studying human cell phone use.

### Were there any surprise findings?

NTP found longer lifespans among the exposed male rats. This may be explained by an observed decrease in chronic kidney problems that are often the cause of death in older rats.

### What will NTP do with the results of the studies?

NTP will provide these studies to the FDA and Federal Communications Commission. The agencies will review the information as they continue to monitor new research on the potential health effects of RFR.

*Final reports and data tables are available on the NTP website at <https://ntp.niehs.nih.gov/go/cellphone>.*



### Are future studies planned?

NTP is collaborating with NIST and IT'IS to develop smaller RFR exposure chambers for additional short-term studies that will take weeks and months rather than years. These studies will focus on further clarifying what NTP learned in the long-term studies and investigating the possibility of DNA damage in exposed tissues.

The exposure system is also being designed so studies of different RFR frequencies and modulations can keep up with the changing technologies in the telecommunications industry.

NTP is also hoping to identify biomarkers of damage from RFR exposure. These would be measurable physical changes that can be seen in shorter periods of time than it takes to develop cancer. Examples could be changes in heart rate after exposure or molecular changes that might be predictive of cancer. If scientists can better understand biological changes in animals, they will know more about what to look for in humans.



### Where can I go for more information?

For more information on what federal agencies are doing to determine whether RFR used in cell phones may affect human health, visit the following websites:

#### National Toxicology Program

<https://ntp.niehs.nih.gov/go/cellphone>

#### National Cancer Institute

[www.cancer.gov/about-cancer/causes-prevention/risk/radiation/cell-phones-fact-sheet](http://www.cancer.gov/about-cancer/causes-prevention/risk/radiation/cell-phones-fact-sheet)

#### U.S. Food and Drug Administration

<https://go.usa.gov/B5tx>

#### Federal Communications Commission

[www.fcc.gov/consumers/guides/wireless-devices-and-health-concerns](http://www.fcc.gov/consumers/guides/wireless-devices-and-health-concerns)

The National Toxicology Program is an interagency program headquartered at the **National Institute of Environmental Health Sciences** that tests and evaluates chemicals in our environment.

For more information on NTP, go to <https://ntp.niehs.nih.gov>.

<sup>1</sup> Pew Research Center. 2018. Mobile Fact Sheet. Available: [www.pewinternet.org/fact-sheet/mobile](http://www.pewinternet.org/fact-sheet/mobile) [accessed 24 October 2018].

<sup>2</sup> FDA (U.S. Food and Drug Administration). 2017. Reducing Exposure: Hands-free Kits and Other Accessories. Available: <https://www.fda.gov/Radiation-EmittingProducts/RadiationEmittingProductsandProcedures/HomeBusinessandEntertainment/CellPhones/ucm116293.htm> [accessed 30 October 2018].

<sup>3</sup> IARC (International Agency for Research on Cancer). 2013. Non-Ionizing Radiation, Part 2: Radiofrequency Electromagnetic Fields. IARC Monogr Eval Carcinog Risks Hum 102:1-481.

<sup>4</sup> Capstick MH, Kuehn S, Berdinas-Torres V, Gong Y, Wilson PF, Ladbury JM, Koepke G, McCormick DL, Gauger J, Melnick RL, Kuster N. 2017. A radio frequency radiation exposure system for rodents based on reverberation chambers. IEEE T Electromagn C 59(4):1041-1052.

<sup>5</sup> Gong Y, Capstick MH, Kuehn S, Wilson PF, Ladbury JM, Koepke G, McCormick DL, Melnick RL, Kuster N. 2017. Life-time dosimetric assessment for mice and rats exposed in reverberation chambers for the two-year NTP cancer bioassay study on cell phone radiation. IEEE T Electromagn C 59(6):1798-1808.

<sup>6</sup> Wyde ME, Horn TL, Capstick MH, Ladbury JM, Koepke G, Wilson PF, Kissling GE, Stout MD, Kuster N, Melnick RL, Gauger J, Bucher JR, McCormick DL. 2018. Effect of cell phone radiofrequency radiation on body temperature in rodents: Pilot studies of the National Toxicology Program's reverberation chamber exposure system. Bioelectromagnetics 39(3):190-199.

bioRxiv preprint first posted online May. 26, 2016; doi: <http://dx.doi.org/10.1101/055699>. The copyright holder for this preprint (which was not peer-reviewed) is the author/funder. It is made available under a CC-BY 4.0 International license.

# Report of Partial Findings from the National Toxicology Program Carcinogenesis Studies of Cell Phone Radiofrequency Radiation in Hsd: Sprague Dawley® SD rats (Whole Body Exposures)

Late Communications  
Zoning Adjustments Board

Draft 6-23-2016

JUN 28 2019  
**RECEIVED**  
at Meeting

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1 **Abstract**

2 The U.S. National Toxicology Program (NTP) has carried out extensive rodent toxicology and  
3 carcinogenesis studies of radiofrequency radiation (RFR) at frequencies and modulations used in  
4 the U.S. telecommunications industry. This report presents partial findings from these studies.  
5 The occurrences of two tumor types in male Harlan Sprague Dawley rats exposed to RFR,  
6 malignant gliomas in the brain and schwannomas of the heart, were considered of particular  
7 interest and are the subject of this report. The findings in this report were reviewed by expert  
8 peer reviewers selected by the NTP and National Institutes of Health (NIH). These reviews and  
9 responses to comments are included as appendices to this report, and revisions to the current  
10 document have incorporated and addressed these comments. When the studies are completed,  
11 they will undergo additional peer review before publication in full as part of the NTP's  
12 Toxicology and Carcinogenesis Technical Reports Series. No portion of this work has been  
13 submitted for publication in a scientific journal. Supplemental information in the form of four  
14 additional manuscripts has or will soon be submitted for publication. These manuscripts describe  
15 in detail the designs and performance of the RFR exposure system, the dosimetry of RFR  
16 exposures in rats and mice, the results to a series of pilot studies establishing the ability of the  
17 animals to thermoregulate during RFR exposures, and studies of DNA damage. (1) Capstick M,  
18 Kuster N, Kühn S, Berdinas-Torres V, Wilson P, Ladbury J, Koepke G, McCormick D, Gauger  
19 J, and Melnick R. A radio frequency radiation reverberation chamber exposure system for  
20 rodents; (2) Yijian G, Capstick M, McCormick D, Gauger J, Horn T, Wilson P, Melnick RL, and  
21 Kuster N. Life time dosimetric assessment for mice and rats exposed to cell phone radiation; (3)  
22 Wyde ME, Horn TL, Capstick M, Ladbury J, Koepke G, Wilson P, Stout MD, Kuster N,  
23 Melnick R, Bucher JR, and McCormick D. Pilot studies of the National Toxicology Program's

bioRxiv preprint first posted online May. 26, 2016; doi: <http://dx.doi.org/10.1101/055699>. The copyright holder for this preprint (which was not peer-reviewed) is the author/funder. It is made available under a [CC-BY 4.0 International license](https://creativecommons.org/licenses/by/4.0/).

1 of the GSM-modulation groups and in the 6 W/kg CDMA-modulated group only slightly  
2 exceeds the mean historical control rate and falls within the observed range.

3

4 The survival of the control group of male rats in the current study (28%) was relatively low  
5 compared to other recent NTP studies in Hsd:Sprague Dawley® SD® (Harlan) rats (average 47%,  
6 range 24-72%). If malignant gliomas or schwannomas are late-developing tumors, the absence of  
7 these lesions in control males in the current study could conceivably be related to the shorter  
8 longevity of control rats in this study. Appendix E lists the time on study for each animal with a  
9 malignant glioma or heart schwannoma. Most of the gliomas were observed in animals that died  
10 late in the study, or at the terminal sacrifice. However, a relatively high number of the heart  
11 schwannomas in exposed groups were observed by 90 weeks into the study, a time when  
12 approximately 60 of the 90 control male rats remained alive and at risk for developing a tumor.

13

#### 14 **CONCLUSIONS**

15 Under the conditions of these 2-year studies, the hyperplastic lesions and glial cell neoplasms of  
16 the heart and brain observed in male rats are considered likely the result of whole-body  
17 exposures to GSM- or CDMA-modulated RFR. There is higher confidence in the association  
18 between RFR exposure and the neoplastic lesions in the heart than in the brain. No biologically  
19 significant effects were observed in the brain or heart of female rats regardless of modulation.

20

#### 21 **NEXT STEPS**

22 The results reported here are limited to select findings of concern in the brain and heart and do  
23 not represent a complete reporting of all findings from these studies of cell phone RFR. The

Report Revised on June 23, 2016

POLLINATORS AT RISK

# The Honey Bee says: **STOP5G**

5th Generation Wireless Technology



## Headline News

The harmful effects of EMFs on nature are scientifically based and have been under-reported for over a decade. Here are *just a few* facts most people would like to know.

- **Technology is quite literally destroying nature...** with electromagnetic radiation from power lines and cell towers... 5G could increase threat. [Newsweek, 2018](#)
- **180 scientists and doctors from 35 countries** have signed a recommendation for a **5G moratorium**.
- **5G increases body temperature of insects.** [Pro Natura, 2019](#)
- **A \$30 million US National Toxicology Program (NTP)** study in 2018 found "clear evidence" that cell phone radiation is **linked to cancer**.
- ... **unprecedented exposure interferes with the natural functioning** of humans, animals, and plants.  
Dr. Ulrich Warnke: [Bees and Mankind: Destroying Nature by 'Electrosmog', 2009](#)
- **"Birds disappearing mysteriously... bees under threat.** ... increasing evidence EMF pollution such as cell towers, cell phones, cordless phones and wifi is a factor."  
Dr. Andrew Goldsworthy, 2009 [The Birds, the Bees and EMF Pollution](#)
- **EMFs can cause cancer.**  
([Hardell and Carlberg, 2018](#)) ([Soffritti, 2016](#)) ([Peleg, 2018](#))
- **Electromagnetic Fields A 'Credible Threat' To Wildlife**  
Joel M. Moskowitz, Ph.D., [Principia Scientific International, 2018](#)

### Take Action!

1. Contact your local, state and US representatives and tell them to stop 5G.
2. Reduce wireless use, see safety tips [here](#).
3. Find letter templates, view and download fliers to hand out, post and learn more.



### Impact on Birds and Bees

- "Due to electromagnetic smog, honeybees are often unable to return to their hives (Harst et al., 2006; Favre, 2011; Sharma & Kumar 2010; Sahib, 2011), the resulting massive loss of workers then leads to a colony collapse (e.g. Harst et al. 2006; Sharma and Kumar 2010), which is why electromagnetic radiation has been suggested as one potential cause of colony collapse disorder (CCD) (e.g. Warnke 2009; Sahib 2011)" [Journal of Insect Conservation \(Lázaro et al, 2016\)](#)
- Radiation impacts on wild birds documented nest abandonment, plumage deterioration and death. Lab studies of chick embryos documented heart attacks and death. ([Al Manville PhD USFWS, 2016](#))
- EMFs evoke aversive behavior, developmental anomalies and mortality in studied animal groups. ([Ministry of Environment & Forests Report 2011 P6](#))

**EMF**

*Safety Network*

[www.emfsafetynetwork.org](http://www.emfsafetynetwork.org)

**Reduce EMFs to Protect Animals, Plants and Humans!**

## How to Protect Your Family

- 1. Do not hold the phone directly against your head or body**  
Use speakerphone, other hands-free device, or another device that meets EHT guidance.
- 2. Beware of a weak signal**  
Your phone works harder and emits more radiation into you when the signal is weak or blocked.
- 3. Protect children, the pregnant abdomen, and men who want to become fathers**  
Children absorb twice as much radiation as adults. Sperm are especially vulnerable.
- 4. Do not sleep with your cell phone**  
Phones do not emit radiation when off or in airplane mode.
- 5. Corded landlines are swifter, safer, and more secure**  
Cordless phones also emit microwave radiation.
- 6. Do not text while moving e.g. driving, biking, blading, walking, skiing.**  
Milliseconds can make the difference between life or death.

### Brought to you by:

The Global Campaign for Safer Cell Phones provides open-source resources that educate and motivate health professionals, teachers, parents, and students about simple and safer ways to use cell phones. Our multi-media toolkit can be downloaded at [EHTrust.org](http://EHTrust.org).

Prepared by *physicians, biomedical scientists, and neurosurgeons:* including Kevin O'Neill, FRCS (SN); Ronald B. Herberman, MD; Charles Teo, MD; David Servan-Schreiber, MD, PhD; Annie J. Sasco, MD, DrPH; Stephen Sinatra, MD; John West, MD; Richard Stein, MD, PhD; Devra Lee Davis, PhD, MPH

Find out more about how to reduce your risk and get the latest news on our website [EHTrust.org](http://EHTrust.org) and [#PracticeSafeTech](https://twitter.com/PracticeSafeTech).

## Doctors' Advice to Patients & Their Families

### Cell Phones & Health: Simple Precautions Make Sense



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This pamphlet reviews  
precautionary advice by governments  
to reduce your exposure to  
cell phone radiation.

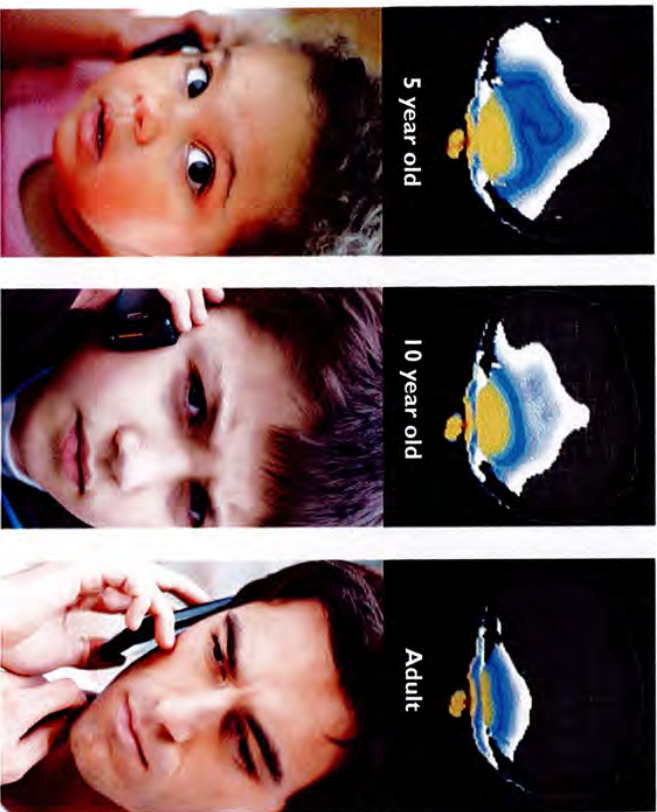
ENVIRONMENTAL  
HEALTH TRUST



Cell phones are two-way microwave radios that were never properly tested for safety.

Antennas for cell phones are continually searching for signals from towers to send and receive information. The body or brain absorbs about half the radiation emitted from a phone at any time.

### Children absorb more radiation than adults



Courtesy Om P. Gandhi and Green America

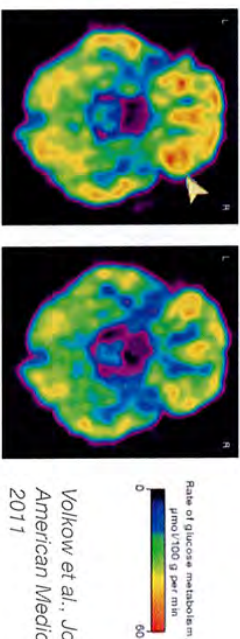
People who use cell phones more than 30 minutes per day (average) for 10 years have a doubled or higher risk of brain cancer. Teenagers who start to use cell phones develop 4 to 5 times more brain cancer in less than a decade. Links to studies can be found at EHTrust.org.

### WORLD HEALTH ORGANIZATION (2011)

On May 31, 2011, the World Health Organization/International Agency for Research on Cancer classified the electromagnetic radiation from cell phones as possibly carcinogenic to humans based on an increased risk for glioma, a malignant type of brain cancer, associated with use of mobile phones.

### Can Cell Phones Cause Cancer and Disease?

A number of well-designed studies indicate that cell phone use increases cancer risk. Cell phones change the brain. After 50 minutes of holding a cell phone on or next to the ear, the brain of a healthy adult shows significant changes in glucose metabolism—the brain's fuel—at precisely those areas reached by cell phone radiation. The long-term impact of these changes is unknown. Recent research suggests that cell phones, cordless phones, and other wireless devices can also disturb heart rate.

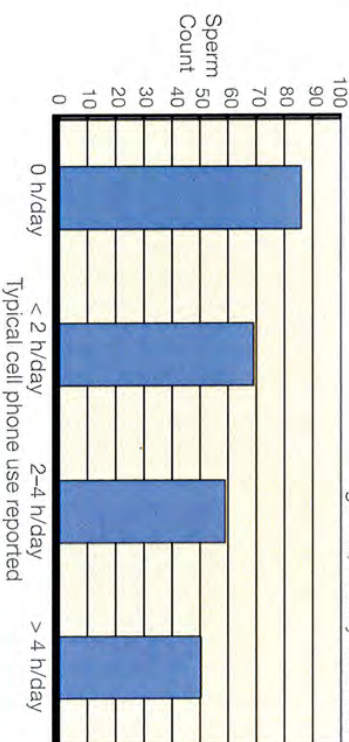


Volkow et al., *Journal of the American Medical Association*, 2011

### Cell Phones Lower Sperm Count

Men who use cell phones 2 to 4 hours per day have 30% lower sperm count than non-users; daily use over 4 hours results in 40% lower sperm count. Studies have shown that microwave radiation can damage sperm.

Agarwal, *Fertility and Sterility*, 2008



### HEALTH CANADA (2011)

“Health Canada reminds cell phone users that they can take practical measures to reduce RF exposure. The department also encourages parents to reduce their children’s RF exposure from cell phones since children are typically more sensitive to a variety of environmental agents.”

# 5G FREE FORUM

because wireless "small" cells harm ALL cells  
Cheaper, faster alternatives don't squander energy, privacy, security, property values.  
Power point, panel discussion, Q&A with scientist Lloyd Morgan  
health educator Sarah Aminoff, former attorney Kelley Hart, MC Phoebe Sorgen

Want close proximity antenna radiation everywhere?

**Fri June 28, 7pm-8:30**  
**2727 Milvia-Sports Basement**  
community rm (formerly Iceland)



**5th Generation wireless emits constant radiation with no way to turn it off, no escape.**  
It's unreliable and BAD for BEES, TREES, YOU & ME. It costs more than cable or fiber.  
Peer-reviewed studies show it causes cancer & other serious health probs.  
Berkeley needs an ordinance like other cities' asap. 3 installations have been approved.

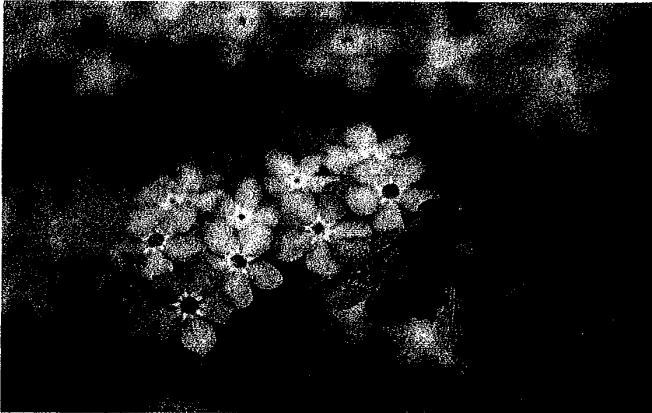


# PHYSICIANS FOR SAFE TECHNOLOGY

*"Our vision is a world where technology serves our needs without undermining our physical, psychosocial or environmental health."*

[www.mdsafetech.org](http://www.mdsafetech.org)

## Environment and Wildlife Effects



### Animal Life and the Earth's Magnetic Field

A diverse array of animal life relies upon the earth's magnetic field for navigation, breeding, feeding, migration and survival. Biologists have discovered that wireless electromagnetic radiation disturbs internal magneto-receptors used for navigation, as well as disrupting other complex cellular and biologic processes in mammals, birds, fish, insects, trees, plants, seeds and bacteria with profound impacts on the natural environment. Different species have different interactions with radiofrequency radiation (RFR) and

differ in their toxic effect. These effects may not be immediately apparent with a slow decline in the health of wildlife seen over time with cumulative exposure.

### Increased Radiofrequency Radiation and The Decline of Birds, Bees and Wildlife

Biologists have noted that wildlife are susceptible to harm from manmade ambient electromagnetic fields. *Researchers are now attributing RFR from cellular telecommunications to be a contributing cause of bee "colony collapse disorder", insect disappearance, the decline in house sparrows in London, as well as the steady deterioration of the worlds bird population with now than 40% of bird species under critical threat.* Scientists note a serious lack of radiation monitoring and protocols to study the impacts and call for precaution in the placement of cell towers and further expansion of wireless broadband. In the United States, Section 704 of the Telecommunications Act of 1996 does not allow consideration of environmental effects in the placement of cell towers. Telecommunications Act of 1996

### Wildlife Are More Vulnerable to Wireless Radiation

**Adverse responses from radiofrequency radiation** that have been identified include abnormal behavior, developmental abnormalities, diminished reproduction and increased mortality. Birds, bees, turtles, dolphins, salamanders, salmon, amphibians and other animals use the earth's weak magnetic field and their own internal magneto-receptors to navigate. *Birds have feathers that can act as antenna and amplify the negative effects of RF radiation Bigu-del-Blanco (1975). Insects, the base of the food chain, appear particularly susceptible to radiofrequency radiation, especially 5G millimeter wavelengths which are the size of the insect and create a damaging resonance effect.*

**Mammals, like humans, have similar reproductive organs, immune systems and nervous systems, thus are susceptible to molecular and cellular harm from artificial wireless radiofrequency wavelengths.** Katie Singer, in her extensively referenced book *Electronic Silent Spring*, highlights that the earth's living systems evolved their own internal and external signaling systems in the presence of the earth's low electromagnetic environment and thus are vulnerable to the much higher levels of artificial pulsed electromagnetic radiation experienced today.

## Cell Towers Emit Wireless Radiation Over

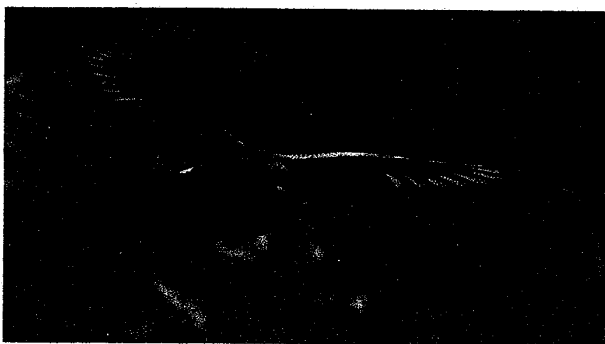
**Dozens of Miles of Terrain** Stationary cell and radio towers create a circle of high power wireless radiation (1500 feet) around them, with a much larger radius (dozens of miles) of lower power radiation, which scientists have found can contribute to environmental disturbances. In cities the density is much higher with more towers and co-location of multiple antennas on a single tower to accommodate multiple telecommunication carriers.

*When these towers were removed, not only did local residents symptoms disappear, the forest recovered*

Firstenberg (2017) in his fascinating and well-researched book, *The Invisible Rainbow: A History of Electricity and Life*, describes both observations and biological experiments performed, mostly in Europe, where radio broadcast towers caused not only human symptoms but also affected widespread forest health with loss of birds, thinner growth rings on trees, poor seed germination and loss of duckweed, among other effects. *When these towers were removed, not only did local residents symptoms disappear, the forest recovered.* **The Skrunda Radio Location Case.**

## Bird Migration Disrupted More by Weak Magnetic Fields

Biologists have noted that birds magnetic compass orientation appears more susceptible to weak broadband electromagnetic fields.



**Schwarze et al (2016)**, note in their paper that weak magnetic fields can have much more powerful influence on bird migration than strong fields. They state, "Our results indicated that the magnetic compass orientation of European robins could not be disrupted by any of the relatively strong narrow-band electromagnetic fields employed here, but that the weak broadband field very efficiently disrupted their orientation" **Pakhomov (2017)** and **Wiltchko (2015)** both confirmed this effect.

## Trees are Harmed by Radiofrequency Radiation

In Colorado, Aspen trees have been on the decline and experiments have pointed to radiation from cell towers causing poor growth and smaller leaves- **Haggerty 2010** A 4-year experiment by **Waldmann-Selsam et al (2016)** clearly demonstrated, with accurate RF emission testing, cell tower radiation causing the death of nearby trees over time. He notes, "These results are consistent with the fact that damage afflicted on trees by mobile phone towers usually start on one side, extending to the whole tree over time." These are truly alarming findings and serve as a dire warning on further wireless expansion, especially with regards to agricultural rural zones or wildlife areas with sensitive species. Research also raises the question of wildfires sparked by dead or dying trees near cell towers.

## Homing Pigeons Magneto-Receptors Disoriented by Wireless Communications

It is well established that magnetite, a form of iron ore is found in a wide variety of organisms who use this magneto-receptor to sense the earth's low energy magnetic field as a directional reference. (Cadiou and McNaughton). Magnetite acts as an internal compass of sorts. Migrating birds, fish, insects and animals connect these magneto-receptors with the earth's natural geomagnetic forces, to successfully guide them in long and short distance journeys, necessary for feeding and breeding. Modern communications systems with a proliferation of cell towers and smart meters in cities and rural areas, create a fluctuating blanket of continuous pulsating artificial radiofrequency wave mixtures that can alter local magnetic fields and thus impair migration and orientation of birds in addition to effects on pollinators. In 1998, soon after cell towers were installed in Pennsylvania, pigeon races ended in disaster as up to 90% of birds were disoriented and lost their navigational skills. **When Homing Pigeons Don't Go Home Again** NY Times. Dec 6, 1998.

## Bird Navigation Disabled in Cities

Independently replicated studies have confirmed the radio frequency (RFR) effects on orientation of birds. Engles et al (2014) exposed migratory European robins to background electromagnetic noise present in unscreened wooden huts at the University of Oldenburg city campus in Germany and found they could not orient using their magnetic compass. If grounded their orientation reappeared but disappeared again if broadband radiofrequencies were generated inside the huts. He did not believe the effects at first and performed the same double-blinded study many times in 7 years and with different graduate students to confirm the effect before publishing his findings. Dr. Engles concluded, "The disruptive effect of radiofrequency electromagnetic fields is not confined to a narrow frequency band and birds tested far from sources of electromagnetic noise required no screening to orient with their magnetic compass." Research has also demonstrated abnormalities in reproduction and behavior of birds nesting near cell towers in addition to harm to amphibians. *This raises the question of the health and sustainability of cities with a dense assortment of telecommunications towers.*

## Bee Colony Collapse Disorder

Bees are a critical pollinator species. Of the 100 crops that provide 90% of the world's food supply, 71 are pollinated by bees, according to the UN Environmental Program. Researchers agree that we are in the midst of a pollinator crisis. The White House in 2014 was so



concerned it established a Federal Strategy with a Pollinator Task Force to promote bee health. As bee numbers have plummeted around the world, scientists have been investigating causes. They have found several contributing factors affecting the health and reproduction of bees, including pesticides, global climate change, loss of habitat and air pollution with new research pointing towards microwave radiation as an important and yet unrecognized cause for concern. Bees contain magnetite granules in their abdomen which offer them the ability to navigate with the earth's natural low power non-pulsating magnetic field.

## Bee Behavior Disruption by Cell Phone Radiation

Bees operate in about a 5 kilometer radius and typically find their way without difficulty. Sharma et al (2010) looked at bee behavior placing a cell phone near a hive.

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*They found worker bees returned less and less frequently to the beehive after the installation of a mobile phone. There was a significant decline in colony strength and the rate of queen egg laying.*

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Kumar et al (2011) looked at physiologic changes in bees exposed to cell phone radiation and found it creates a stress response, increased agitation and increase in carbohydrate metabolism.

Favre et al (2017) clearly demonstrated that bee behavior is disrupted by exposure to cell phone GSM radiofrequency radiation and caused worker bees to emit a piping signal to swarm. Bees have also demonstrated aggression after 30 minutes of cell phone exposure. Dr. Favre notes, "Mobile phone companies and policy makers point to studies with contradictory results." However, his study distinctly demonstrated adverse effects. He invites others to reproduce his research.

## Colony Collapse Disorder started After the Use of Pesticides

Cammaerts (2017), biologist and author of 54 peer reviewed publications on insects, observes that the sharp decline of bees did not start with the use of insecticides but much later and removal of pesticides has not been accompanied by the expected rise in bee populations. While she does not discount a role for insecticides causing bee decline, she advises beekeepers to consider that radiofrequency radiation could also have an impact and protect their hives by locating these in a low EMF environment or placing them in a Faraday cage or enclosure.

## Insects: The Base of Our Food Chain Are In Decline

Bees are not the only insects necessary for sustainability and all are suffering decline. Purdue University among others points out that *insects are critical in living ecosystems*. They are wild and domestic pollinators, provide a source of food for amphibians, reptiles, birds and mammals, are primary decomposers for fungi, dead plants and animals and also eat other pest insects thus playing a beneficial role in the balance of nature. A Yale report in 2016 highlighted a dramatic drop in insect populations in many parts of the world. Insect traps set up in Germany are showing a startling 4 to 5 fold reduction. *Biologists attribute this to monoculture farming, pesticides and habitat loss, however the scientific literature points to radiofrequency radiation as another significant contributing cause. Yale report on insect decline.*

## Biodiversity and Abundance of Wild Pollinators

Lazaro (2016) emphasizes pollination as a key ecosystem service that needs protection. His group measured insect biodiversity on wild pollinator communities including wild bees, hoverflies, bee flies, beetles, butterflies, and wasps on 2 Greek islands at variable distances from telecommunication antennas. He found that all pollinator groups, except butterflies, were affected with a decrease in abundance and composition of insects closer to antennas. He did note an opposite effect on however, that underground-nesting wild bees and bee flies unexpectedly increased with EMR. He stated that this effect on wild insects could have "additional ecological and economic impacts on the maintenance of wild plant diversity, crop production and human welfare."

## Ants Can Be Used as a Bio-indicator for Radiofrequency

Belgian entomologist Marie-Claire Cammaerts (2017) has done a number of studies on cell phone radiation and found that insects, particularly ants, are extremely sensitive to radiofrequency radiation (RFR). In fact, some methods of insect control use RFR. She performed dozens of experiments on countless numbers of ants with the following observations

- *Ants lost their olfactory and visual memory after GSM cell phone exposure and with a second exposure causing cumulative damage. (Cammaerts 2012)*
- 3 Minutes of exposure of ants to cell phone radiation caused "locomotion ataxia", decreased linear speed, and increased angular speed. The ants needed two to four hours for recovery. When the phone was in standby mode under the ants nest, the ants relocated their nests far away from the cell phone with their eggs, larvae and nymphs. They returned after removal of the cell phone. Cammaerts (2013)
- Ants under the influence could not follow a pheromone trail or forage for food effectively, return to their nest and after 180 hours there was deterioration of the colony. Cammaerts (2013) notes RFR "effects social insects' behavior and physiology."



## 5G Deployment More Harmful for Insects: The Resonance Effect

The increase the number and density of cell towers in cities and rural areas coincides with insect and bird decline. Older generation technology emits RF frequencies between 100 MHz and 6 GHz with wavelengths in inches to feet. A new 5<sup>th</sup> generation (5G) of wireless communications is being proposed, adding to the mix millimeter waves (fractions of an inch long) between 6 GHz to

over 100 GHz. These high frequency wavelengths pulse at billions of cycles per second (1GHz=1 billion cycles per second). *Radiofrequency wavelengths, especially those that are modulated (or pulsed) are known to cause much more disruption to organisms, or structures within the organism, if the frequency wavelength is the same size as the organism, organ structure, cell or cell structure. This phenomenon is called resonance.* It leads to heightened vibration and thus injury. Insects are smaller in size and close to the width of 5G frequencies. **Thielens (2018)** studied this effect on 4 different insects exposed to electromagnetic fields from 2 to 120 GHz. He found “The insects show a maximum in absorbed radio frequency power at wavelengths that are comparable to their body size.....This could lead to changes in insect behaviour, physiology, and morphology over time due to an increase in body temperatures, from dielectric heating.” Insects are thus especially susceptible to 5G microwave frequencies. There has been no premarket testing of this 5G technology however a body of research demonstrates harm to insects. Policies to expand deployment of this technology unfortunately do not consider these biological or environmental effects.

### **Mammals: Reproductive Effects**

Magras and Xenos (1997) performed an in-vivo study looking at prolonged exposure to low intensity radio frequency radiation and reproduction. They used 12 pairs of mice, placing them in various areas in an antenna park in a small mountaintop village in Greece near TV and FM broadcast transmitters. The animals lived in this area for 6 months with levels below well below CENELEC and IEEE standards. 6 pairs of animals were used as a control and placed in an environment free from RF radiation, about 10 KM from the town of Chortiatis, where the antennas were located. He notes, “Mice from the BALB/c/f breeding colony obtained from the “Theageneion Anticancer Institute of Thessaloniki” have been used for years in our laboratory for reproduction. Repeated pregnancies with a recovery period of 1 – 4 weeks for over a year, had never affected the fertility of the dams or any morphological parameters of the offspring, a fact that to our knowledge has not been questioned in the available literature.” Their study showed a progressive reduction in litter size in the exposed female animals to the point of irreversible sterility by the 5<sup>th</sup> generation. The males exhibited rough hair and emaciation at the end of the study.

Panagopoulos (2007) exposed flies to 2 different digital cell phone frequencies for a few minutes a day for the first 6 days of life and found widespread cell death. He states, “Induced cell death is recorded for the first time, in all types of cells constituting an egg chamber (follicle cells, nurse cells and the oocyte) and in all stages of the early and mid-oogenesis....The exposure conditions were similar to those to which a mobile phone user is exposed...”

**The NIEHS National Toxicology Program on Cell Phones and Cancer** released their results in 2018 looking at non-thermal effects of cell phone non-ionizing radiation. They showed consistent perinatal effects, including lower pup body weights and lower pup survival. The NTP study, at [https://ntp.niehs.nih.gov/ntp/about\\_ntp/trpanel/2018/march/tr595peerdraft.pdf](https://ntp.niehs.nih.gov/ntp/about_ntp/trpanel/2018/march/tr595peerdraft.pdf), also noted clear evidence of heart tumors, a statistically significant increase in brain tumors and adrenal gland tumors, as well as DNA damage and cardiomyopathy similar to aging. An abundance of in vitro studies in animals shows that non-ionizing radiation can damage reproduction by creating a stress response in cells producing damaging reactive oxygen species. See also [Physicians for Safe Technology Reproductive Health Effects Scientific Literature](#).

### **Mammals: Swiss Calves Born with Cataracts**

**Several studies indicate that low power non-ionizing microwave radiation contributes to and can cause cataracts.** Heat is a well-established mechanism for induction of cataracts as the lens does not have vessels that can dissipate heat. Non-thermal effects however have also been demonstrated in some research, which show adverse effects on lens transparency, alteration of epithelial cell proliferation and apoptosis, and a stress response in lens epithelial cells. Damage to lens epithelial cells is associated with cataracts. Hassig et al (2009) investigated in Swiss calves the prevalence of nuclear cataract near mobile phone base stations. They found (32 %) of the calves had various degrees of nuclear cataract.

The number of antennas within 100 to 199 meters was associated with oxidative stress and there was an association between oxidative stress and the distance to the nearest mobile phone base station. In a later study, Hassig et al (2012) looked at the incidence of cataracts in newborn calves before and after a mobile phone cell tower was placed and found a 3.5 times higher rate of significant cataract after the mobile phone station was installed.

### **Tagging Wildlife Reduces Reproduction and Survival**

Tagging animals for tracking is an important tool to help researchers understand their behavior, habitat selection and migration patterns. Some studies have indicated no harm from these tracking devices, however, other studies show lowered survival rates and reproductive rates. There may be a direct interference in the behavior of the animal due to discomfort as well as direct harm from the continuous pulsing radiofrequency which is located on the body, as a growing body of science demonstrates. Balmori (2016) warns, "It is paradoxical that, at the same time, field scientists investigating the movements and other aspects of animal biology are providing animals with radio transmitters that emit the same type of radiation, since this may affect the results concerning their orientation and movement." There is also concern with regards to successful reproduction and animal behavior with close proximity to RF radiation.

### **Government Agencies Highlight Cell Tower Risks to Wildlife**

*The US Fish and Wildlife Service and the Department of Interior (DOI) has had concerns for many years about the adverse impacts of cell towers and electromagnetic radiation on migratory birds and other wildlife. It is conservatively estimated that 4 to 5 million birds die each year in cell tower and guy-wire collisions. (Government- Manville 2005, 2009). The DOI noted that there were 241 species of birds whose populations merit special protection. Balmori has documented wildlife effects after cell towers were constructed including nest and site abandonment, plumage deterioration, locomotion problems, and death in House Sparrows, White Storks, Rock Doves, Magpies, Collared Doves, and other species.*

### **Robotic Bees: "Smart" or Dumb Pollination?**

**Are we creating dead zones in cities where urban or rural farmers will not be able to grow food or have a vegetable garden?** The tech industry may advise us to use the very technology that is harming ecosystems by using bee drones to pollinate our crops. Walmart has already filed a patent for a pollinating robotic bee. What about ownership of drones, privacy, security and adverse effects on sensitive native bees and flowers with the use of these drones? Many questions, no answers but predictable untoward results.

### **Prevention Smarter Than Cure**

Will the situation worsen? **Solving the real problems causing the decline of species seems smarter than always trying to develop a new and potentially more toxic industry to fix it.** Patients are often given prescriptions to treat the numerous chronic diseases of our modern culture. These medications can cause side effects that may be far worse than the disease. *Physicians now understand it is often more sensible and effective to help patients change their diet, add exercise and avoid toxic exposures to promote health and prevent disease.*

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*Wireless radiation is another toxic exposure with measurable biological effects. Should we not approach wireless technology with the same preventative precautions as we do pesticides, industrial chemicals and ionizing radiation?*

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### **What are Safe Levels of RF Radiation?**

*Sage, Carpenter, Blank and other scientists note in the Biointiative Report that non-thermal bioeffects are clearly established.* There is an urgent need for government agencies to adopt a realistic biologically based exposure standard to replace the thermal (SAR) standard, which is far too permissive and not protective of human or environmental health.

The Biointiative Report reviewed studies looking at the lowest levels of non-thermal, non-ionizing radiofrequency that did not cause harmful biological effects.

Their conclusions, based on peer reviewed research, indicated that there should be a “ scientific benchmark of 0.003 uW/cm<sup>2</sup> or three nanowatts per centimeter squared for ‘lowest observed effect level’ for RFR is based on mobile phone base station-level studies.” They also suggest “Applying a ten-fold reduction to compensate for the lack of long-term exposure (to provide a safety buffer for chronic exposure, if needed) or for children as a sensitive subpopulation...”. This translates into a recommended precautionary action exposure level of 0.0003 uW/cm<sup>2</sup>. Our current U.S. guidelines are regulated by the Federal Communications Commission (FCC) and they follow that of the American National Standards Institute (ANSI), the Institute of Electrical and Electronics Engineers, Inc. (IEEE), and the National Council on Radiation Protection and Measurements (NCRP). Their guidelines are from 200 uW/cm<sup>2</sup> to 1000 uW/cm<sup>2</sup> (2 W/m<sup>2</sup> to 10 W/m<sup>2</sup> ) for RF radiation depending on frequency.

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*The Biointiative Report recommended precautionary action exposure level is 0.0003 uW/cm<sup>2</sup>*

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Blake Levitt, an award-winning medical and science journalist and former *New York Times* contributor is author of *Cell Towers-Wireless Convenience? or Environmental Hazard?* (2011), from “Cell Towers Forum: State of the Science/State of the law” environmental conference December 2, 2000. Her book was updated in 2011 and has valuable information on FCC safety guidelines, legal aspects of the Telecommunications Act, cell tower sitings and case law. An article she and esteemed researcher Henry Lai have written provides a meticulous review on environmental effects of cell towers as well as basic information on terminology and exposure limits.

### **Human Survival Linked to Biodiversity and Healthy Ecosystems**

**Human survival depends on biodiversity and complex ecosystems for a healthy functioning environment,** maintaining clean air, clean water and sustainable soils. The environment is our natural capital. *It appears now under threat from the proliferation of radiofrequency towers along with habitat loss and exposure to other environmental toxins such as pesticides and industrial chemicals.* It is critical to consider the adverse effects of the proposed expansion of wireless telecommunications towers and lower atmospheric balloons in cities and rural areas before they are deployed. Like sonic threats sonic threats for marine mammals the hazards are not seen, heard or felt by humans and harm to animals is slow to be realized.

## Safer Alternatives

Consideration should be given to relocating antennas in residential, school and hospital zones where people live and work and **converting broadband to fiberoptic cabled systems** which are safer and more sustainable in both cities and rural areas. See also **PST Broadband Expansion**

## Reviews on Wildlife

**Balmori (2015)** notes in his latest review "Current evidence indicates that exposure at levels that are found in the environment (in urban areas and near base stations) may particularly alter the receptor organs to orient in the magnetic field of the earth. These results could have important implications for migratory birds and insects, especially in urban areas, but could also apply to birds and insects in natural and protected areas where there are powerful base station emitters of radiofrequencies.  
<https://www.researchgate.net/publication/273121908> Anthropogenic Radiofrequency Electromagnetic Fields as an Emerging Threat to Wildlife Orientation

**The Cucurachi Review (2012)** of 113 peer-reviewed publications revealed, "In about two thirds of the reviewed studies ecological effects of RF-EMF was reported at high as well as at low dosages. The very low dosages are compatible with real field situations, and could be found under environmental conditions." <https://www.researchgate.net/publication/233974663> A review of the ecological effects of radiofrequency electromagnetic fields RF-EMF

**Panagopoulos (2013)** explains in his review of experimental data, how living organisms are in harmony with terrestrial and magnetic fields, which effect their cellular processes and even circadian rhythms. Interference of this delicate interaction with human wireless technology can adversely affect the health and well-being of ecosystems. [https://www.novapublishers.com/catalog/product\\_info.php?products\\_id=41753f](https://www.novapublishers.com/catalog/product_info.php?products_id=41753f)

**The Saravanamuttu Review (2013)** found that harm to the environment is demonstrated but there are no long term studies to support safety of this technology. Sivani and Sudarsanam state, "Based on current available literature, it is justified to conclude that RF-EMF radiation exposure can change neurotransmitter functions, blood-brain barrier, morphology, electrophysiology, cellular metabolism, calcium efflux, and gene and protein expression in certain types of cells even at lower intensities." They note that these studies are important to identify the frequencies, intensities and durations that are safer, enabling the use of wireless technology while ensuring the health and sustainability of the environment. <https://www.researchgate.net/publication/258521207> Impacts of radio-frequency electromagnetic field RF-EMF from cell phone towers and wireless devices on biosystem and ecosystem- A review

**A 2010 review paper from the Ministry of Environment and Forests in India** reviewed all available peer reviewed research on the impacts of wireless radiofrequency (RF) on living organisms, including birds and bees, plants, animals and humans. Of 919 articles collected 593 showed adverse impacts. In each category of organism, over 60% of the research indicated harm to that biological species. [http://www.moef.nic.in/downloads/public-information/final\\_mobile\\_towers\\_report.pdf](http://www.moef.nic.in/downloads/public-information/final_mobile_towers_report.pdf)

**Blake Levitt and Henry Lai (2010)** provide an articulate and thorough review of cell towers and the radiation they emit. This is a classic paper that clearly explains and defines terms used in the literature, providing a foundation of knowledge as well as a review of the literature. Biological effects from exposure to electromagnetic radiation emitted by cell tower base stations and other antenna arrays. (2010) Page 374- Biological Effects at Low intensity) Blake Levitt, Henry Lai. Environmental Reviews, 2010, 18(NA): 369-395. <http://www.nrcresearchpress.com/doi/full/10.1139/A10-018#.WYU1OHeZNo4>



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## Review and General Articles Wildlife

- **EKLIPSE: The impacts of artificial Electromagnetic Radiation on wildlife (fora and fauna). Current knowledge overview: a background document to the web conference. A report of the EKLIPSE project.** May 26, 2018. Knowledge and Learning Mechanism on Biodiversity and Ecosystem Services. European Union. [http://www.eklipse-mechanism.eu/documents/15803/0/EMR-KnowledgeOverviewReport\\_FINAL\\_27042018.pdf/1326791c-f39f-453c-8115-0d1c9d0ec942](http://www.eklipse-mechanism.eu/documents/15803/0/EMR-KnowledgeOverviewReport_FINAL_27042018.pdf/1326791c-f39f-453c-8115-0d1c9d0ec942) **Eclipse Home Page**– <http://www.eklipse-mechanism.eu/news>
- **Comments on Environmental Impact of Radiofrequency Fields from Mobile Phone Base Stations. (2016)** Panagopoulos D et al. Clinical Reviews in Environmental Science and Technology. April 2016. [https://www.researchgate.net/publication/301680565\\_Comments\\_on\\_Environmental\\_Impact\\_of\\_Radiofrequency\\_Fields\\_from\\_Mobile\\_Phone\\_Base\\_Stations](https://www.researchgate.net/publication/301680565_Comments_on_Environmental_Impact_of_Radiofrequency_Fields_from_Mobile_Phone_Base_Stations)
- **Anthropogenic radiofrequency electromagnetic fields as an emerging threat to wildlife orientation. (2015)** Balmori A. Science of the Total Environment. Vol 518-519, 15 June, 2015, Pages 58-60. 68. <https://www.sciencedirect.com/science/article/pii/S0048969715002296> or [https://www.researchgate.net/publication/273121908\\_Anthropogenic\\_Radiofrequency\\_Electromagnetic\\_Fields\\_as\\_an\\_Emerging\\_Threat\\_to\\_Wildlife\\_Orientation](https://www.researchgate.net/publication/273121908_Anthropogenic_Radiofrequency_Electromagnetic_Fields_as_an_Emerging_Threat_to_Wildlife_Orientation)
- **Electrosmog and species conservation. (2014)** Balmori A. Science of The Total Environment. Volume 496, 15 October 2014, Pages 314-316. <https://www.sciencedirect.com/science/article/pii/S0048969714010912>
- **Impacts of radio-frequency electromagnetic field (RF-EMF) from cell phone towers and wireless devices on biosystem and ecosystem—A review. (2013)** Sivani S and Saravanamuttu S. Biology and Medicine. 4(4):202-216. January 9. [https://www.researchgate.net/publication/258521207\\_Impacts\\_of\\_radio-frequency\\_electromagnetic\\_field\\_RF-EMF\\_from\\_cell\\_phone\\_towers\\_and\\_wireless\\_devices\\_on\\_biosystem\\_and\\_ecosystem-A\\_review](https://www.researchgate.net/publication/258521207_Impacts_of_radio-frequency_electromagnetic_field_RF-EMF_from_cell_phone_towers_and_wireless_devices_on_biosystem_and_ecosystem-A_review)
- **Electromagnetic Interaction Between Environmental Fields and Living Systems Determines Health and Wellbeing. (2013)** Dimitris J. Panagopoulos. Electromagnetic Fields: Principles. Biophysical Effects. ©2013. Nova Science Publishers, Inc. [https://www.novapublishers.com/catalog/product\\_info.php?products\\_id=41753f](https://www.novapublishers.com/catalog/product_info.php?products_id=41753f)
- **A review of the ecological effects of radiofrequency electromagnetic fields (RF-EMF). (2012)** Cucurachi S et al. Environment International. 51C:116-140. 2012. [https://www.researchgate.net/publication/233974663\\_A\\_review\\_of\\_the\\_ecological\\_effects\\_of\\_radiofrequency\\_electromagnetic\\_fields\\_RF-EMF](https://www.researchgate.net/publication/233974663_A_review_of_the_ecological_effects_of_radiofrequency_electromagnetic_fields_RF-EMF)
- **Report on Cell Tower Radiation. Submitted to Secretary, DOT, Delhi, India. (2010)** Kumar G. Electrical engineering Department. IIT Bombay, Powai, Mumai <https://www.ee.iitb.ac.in/~mwave/GK-cell-tower-rad-report-DOT-Dec2010.pdf>
- **Biological effects from exposure to electromagnetic radiation emitted by cell tower base stations and other antenna arrays. (2010)** Page 374- Biological Effects at Low intensity) Blake Levitt, Henry Lai. Environmental Reviews, 2010, 18(NA): 369-395. <http://www.nrcresearchpress.com/doi/full/10.1139/A10-018#.WYUJOHeZNo4>
- **Report on Possible Impacts of Communication Cell Towers on Wildlife Including Birds and Bees. (2010)** The Ministry of Environment and Forest. [http://www.moef.nic.in/downloads/public-information/final\\_mobile\\_towers\\_report.pdf](http://www.moef.nic.in/downloads/public-information/final_mobile_towers_report.pdf)
- **The Birds, the Bees and Electromagnetic Pollution. (2009).** Andrew Goldsworthy. <https://ecfsapi.fcc.gov/file/7520958012.pdf>
- **[The influence of electromagnetic fields on flora and fauna]. (2009)** Rochalska M. Med Pr. 2009;60(1):43-50. <https://www.ncbi.nlm.nih.gov/pubmed/19603696>
- **Mobile telephony radiation effects on living organisms. (2008)** DJ Panagopoulos and Margaritas LH. University of Athens. Published by Nova Science Publishers. [https://www.researchgate.net/publication/251669858\\_Mobile\\_telephony\\_radiation\\_effects\\_on\\_living\\_organisms](https://www.researchgate.net/publication/251669858_Mobile_telephony_radiation_effects_on_living_organisms)
- **The effects of microwaves on the trees and other plants. (2003)** Balmori Martínez A. Valladolid, Spain, 2003b. <http://www.hese->

[project.org/de/emf/WissenschaftForschung/Balmori\\_Dr.\\_Alfonso/showDoc.php?lang=de&header=Dr.%20Balmori&file=THE%20EFFECTS%20OF%20MICROWAVES%20ON%20THE%20TREES%20AND%20OTHER%20PLANTS.html&back=../showAuthor.php?target=Balmori\\_Dr.\\_Alfonso](http://project.org/de/emf/WissenschaftForschung/Balmori_Dr._Alfonso/showDoc.php?lang=de&header=Dr.%20Balmori&file=THE%20EFFECTS%20OF%20MICROWAVES%20ON%20THE%20TREES%20AND%20OTHER%20PLANTS.html&back=../showAuthor.php?target=Balmori_Dr._Alfonso)

- **THE EFFECTS OF MICROWAVE RADIATION ON THE WILDLIFE. PRELIMINARY RESULTS. (2003)** Alfonso Balmori Martínez. Feb 2003. Manuscript submitted for publication to Electromagnetic Biology and Medicine <http://www.whale.to/b/martinez.pdf>
- **KNOCK Forum-Knowledge Network, Open Community. EMF and Wildlife.** [http://www.eclipse-mechanism.eu/forum\\_discussion?p\\_p\\_id=forumdiscussions\\_WAR\\_EclipseSBportlet&p\\_p\\_lifecycle=0&p\\_p\\_state=normal&p\\_p\\_mode=view&p\\_p\\_col\\_id=column-1&p\\_p\\_col\\_count=1&forumdiscussions\\_WAR\\_EclipseSBportlet\\_mvcPath=%2Fhtml%2Fforumdiscussions%2Fview\\_subject.jsp&forumdiscussions\\_WAR\\_EclipseSBportlet\\_subjectId=6](http://www.eclipse-mechanism.eu/forum_discussion?p_p_id=forumdiscussions_WAR_EclipseSBportlet&p_p_lifecycle=0&p_p_state=normal&p_p_mode=view&p_p_col_id=column-1&p_p_col_count=1&forumdiscussions_WAR_EclipseSBportlet_mvcPath=%2Fhtml%2Fforumdiscussions%2Fview_subject.jsp&forumdiscussions_WAR_EclipseSBportlet_subjectId=6)
- **[Ecological significance of electromagnetic fields: the 20th century–century of electricity, the 21st–century of magnetism]. (2003)** Lazetić B. *Med Pregl.* 2003;56 Suppl 1:31-6. <https://www.ncbi.nlm.nih.gov/pubmed/15510911>
- **The effects of microwave radiation from mobile telephones on humans and animals. (2000)** Galeev AL. *Behav. Physiol.* 30:187–194, 2000. <https://www.ncbi.nlm.nih.gov/pubmed/10872729>
- **Concern for Europe's Tomorrow. Health and the Environment in the European Region. WHO. 1995.** [http://www.euro.who.int/data/assets/pdf\\_file/0004/98266/WA309SCO.pdf](http://www.euro.who.int/data/assets/pdf_file/0004/98266/WA309SCO.pdf)

#### Books

- **The Invisible Rainbow: A History of Electricity and Life.** Arthur Firstenberg . AGB Press. (2017).
- **Electronic Silent Spring.** Katie Singer. Portal Books. (2013)
- **Cell Towers-Wireless Convenience? or Environmental Hazard?** Blake Levitt. iUniverse Publisher. (2011)
- **Biological Effects of Electromagnetic Fields Mechanisms, Modeling, Biological Effects, Therapeutic Effects, International Standards, Exposure Criteria.** Peter Stavroulakis (Ed.) (2003) Springer Publisher. <https://www.springer.com/us/book/9783540429890>
- **The Body Electric: *Electromagnetism and the Foundation of Life.* (1985)** Robert O Becker . Harper Paperbacks.

#### Amphibians

- **Mobile Phone Mast Effects on Common Frog (*Rana temporaria*) Tadpoles: The City Turned into a Laboratory. (2010)** Balmori A. *Electromagnetic Biology and Medicine*, 29: 31–35, 2010. <https://www.ncbi.nlm.nih.gov/pubmed/20560769>
- **The incidence of electromagnetic pollution on the amphibian decline: Is this an important piece of the puzzle? (2006)** Balmori Martínez A. *Toxicological and Environmental Chemistry.* 88(2): 287- 299, 2006. <https://www.tandfonline.com/doi/abs/10.1080/02772240600687200>
- **Cleavage planes in frog eggs are altered by strong magnetic fields. (1998)** Denegre JM et al. *Proceedings of the National Academy of Science (PNAS)* 95:14729–14732, 1998. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC24517/>
- **Mobile phone masts effects of electromagnetic radiation on tadpole development in the common frog (*Rana temporaria* L.). (1998)** Grefner NM et al. *Russian J. Ecol.* 29:133–134, 1998. <https://www.ncbi.nlm.nih.gov/pubmed/20560769>
- **Abnormal limb regeneration in adult newts exposed to a pulsed electromagnetic field. (1998)** Landesman RH et al. *Teratology* 42:137–, 1990. <https://www.ncbi.nlm.nih.gov/pubmed/2218941>

#### Bacteria

- **Resonance effect of millimeter waves in the power range from 10(-19) to 3 x 10(-3) W/cm2 on Escherichia coli cells at different concentrations (1996)** Belyaev IY et al. *Bioelectromagnetics.* 1996;17(4):312-21. <https://www.ncbi.nlm.nih.gov/pubmed/8891190>
- **Transgenic nematodes as biomonitors of microwave-induced stress. (1998)** Daniells C et al. *Mutation Research*, 399(1), 55-64, 1998. <https://www.ncbi.nlm.nih.gov/pubmed/9635489>

#### Bats

- **The Aversive Effect of Electromagnetic Radiation on Foraging Bats—A Possible Means of Discouraging Bats from Approaching Wind Turbines. (2009)** Nicholis B and Racey P. *PLoS One.* July 16, 2009. <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0006246>

- **Bats Avoid Radar Installations: Could Electromagnetic Fields Deter Bats from Colliding with Wind Turbines? (2007)** Nicholis B and Racey P. PLoS ONE 2(3): e297. March 2007, Issue 3. <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0000297>

#### Bees and Insects

- **Exposure of Insects to Radio-Frequency Electromagnetic Fields from 2 to 120 GHz. (2018)** Thielens A et al. Scientific Reports, Article number:3924 (2018). <https://www.nature.com/articles/s41598-018-22271-3>
- **Disturbing Honeybees' Behavior with Electromagnetic Waves: a Methodology. (2017)** Daniel Favre. Journal of Behavior. August 7, 2017. <https://www.jscimedcentral.com/Behavior/Articles/behavior-2-1010.pdf>
- **Is Electromagnetism one of the causes of the CCD? A work plan for testing this hypothesis. (2017)** Marie-Claire Cammaerts. Journal of Behavior. 2 (1):1006. March 28, 2017. <https://www.jscimedcentral.com/Behavior/behavior-2-1006.php>
- **Electromagnetic Radiation of Mobile Communication Antennas Affects the Abundance and composition of Wild Pollinators. (2016)** Lazaro,A. Journal of Insect Conservation 20(2):1-10, April 2016. [https://www.researchgate.net/publication/301647025\\_Electromagnetic\\_radiation\\_of\\_mobile\\_telecommunication\\_antennas\\_affects\\_the\\_abundance\\_and\\_composition\\_of\\_wild\\_pollinators](https://www.researchgate.net/publication/301647025_Electromagnetic_radiation_of_mobile_telecommunication_antennas_affects_the_abundance_and_composition_of_wild_pollinators)
- **Effect of Electromagnetic (cell phone) radiations on Apis mellifera. (2015)** Dalio, J. Journal of Research in Agriculture and Animal Science Volume 2 ~ Issue 12 (2015) pp:06-10. Feb. 2015. <http://questjournals.org/jraas/papers/vol3-issue1/B310610.pdf>
- **Effect of high-frequency radiations on survival of the honeybee (Apis mellifera L.). (2015)** Darney,K. Apidologie: 58 59 December 2015. [https://www.researchgate.net/publication/287972544\\_Effect\\_of\\_highfrequency\\_radiations\\_on\\_survival\\_of\\_the\\_honeybee\\_A\\_pis\\_mellifera\\_L](https://www.researchgate.net/publication/287972544_Effect_of_highfrequency_radiations_on_survival_of_the_honeybee_A_pis_mellifera_L)
- **Pest control by microwave and radio frequency energy: dielectric properties of stone fruit. (2015)** Ling B et al. Agronomy for sustainable Development. January 2015, Volume 35, Issue 1, pp 233–240. <https://link.springer.com/article/10.1007/s13593-014-0228-3>
- **Effect of Short-Term GSM Radiation at Representative Levels in Society on a Biological Model: The Ant Myrmica sabuleti. (2014)** Cammaerts MC et al. Journal of Insect Behavior 27(4) · July 2014. [https://www.researchgate.net/publication/262679650\\_Effect\\_of\\_Short-Term\\_GSM\\_Radiation\\_at\\_Representative\\_Levels\\_in\\_Society\\_on\\_a\\_Biological\\_Model\\_The\\_Ant\\_Myrmica\\_sabuleti](https://www.researchgate.net/publication/262679650_Effect_of_Short-Term_GSM_Radiation_at_Representative_Levels_in_Society_on_a_Biological_Model_The_Ant_Myrmica_sabuleti)
- **A magnetic compass aids monarch butterfly migration. (2014)** Guerra PA et al. Nature Communications. Volume 5, Article number: 4164 (2014). <https://www.nature.com/articles/ncomms5164>
- **Effect of electromagnetic radiations on brooding, honey production and foraging behavior of European honeybees (Apis mellifera L.) (2014)** Mall and Kumar. African Journal of Agricultural Research. Vol 9(13):1078-1085, March 2014. [http://www.academicjournals.org/article/article1396540463\\_Mall%20and%20Kumar.pdf](http://www.academicjournals.org/article/article1396540463_Mall%20and%20Kumar.pdf)
- **Food collection and response to pheromones in an ant species exposed to electromagnetic radiation. (2013)** Cammaerts MC et al. Electromagn Biol Med. 2013 Sep;32(3):315-32. <https://www.ncbi.nlm.nih.gov/pubmed/23320633>
- **Ants can be used as bio-indicators to reveal biological effects of electromagnetic waves from some wireless apparatus. (2013)** Cammaerts MC and Johansson O. Electromagn Biol Med. 2014 Dec;33(4):282-8. <https://www.ncbi.nlm.nih.gov/pubmed/23977878>
- **Detection and learning of floral electric fields by bumblebees. (2013)** Clarke D et al. Science. 2013 Apr 5;340(6128):66-9. <https://www.ncbi.nlm.nih.gov/pubmed/23429701>
- **GSM 900 MHz radiation inhibits ants' association between food sites and encountered cues. (2012)** Cammaerts MC et al. Electromagnetic Biology and Medicine, Early Online: 1–15, 2012. <https://www.ncbi.nlm.nih.gov/pubmed/22268919>
- **Decline of monarch butterflies overwintering in Mexico: is the migratory phenomenon at risk? (2013)** Brower LP et al. Insect conservation and Diversity. March 21, 2011. <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1752-4598.2011.00142.x>
- **Changes in Paramecium caudatum (Protozoa) near a switched-on GSM telephone. (2011)** Cammaerts MC et al. Electromagnetic Biology and medicine. Volume 30, 2011. <https://www.tandfonline.com/doi/full/10.3109/15368378.2011.566778?src=recsys>
- **Exposure to cell phone radiations produces biochemical changes in worker honey (2011)** Kumar N. Toxicol Int. 2011 Jan-Jun; 18(1): 70–72. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3052591/>
- **Electromagnetic Radiation (EMR) Clashes with Honey Bees. (2011)** Sahib S. International Journal of Environmental Sciences. Vol 1, No.5, 2011. <http://www.ipublishing.co.in/jesvol1no12010/EIJES2044.pdf>
- **Short Communication. Impact of mobile phones on the density of honeybees.** Journal of public administration and policy research Vol. 3(4) pp. 131-117 April 2011. Sahib, S. <http://www.academicjournals.org/journal/JHF/article-full-text-pdf/B0ABD121249>

- **Bioeffects of mobile telephony radiation in relation to its intensity or distance from the antennae. (2010)** Panagopoulos DJ et al. *J. Radiat. Biol.*, Vol. 86, No. 5, May 2010, pp. 345–357. <https://www.ncbi.nlm.nih.gov/pubmed/20397839>
- **Changes in honeybee behavior and biology under the influence of cellphone radiations. (2010)** Sharma vp et al. *Current Science* 98:1376–1378. May 2010. [https://www.researchgate.net/publication/225187745\\_Changes\\_in\\_honey\\_bee\\_behaviour\\_and\\_biology\\_under\\_the\\_influence\\_of\\_cell\\_phone\\_radiations](https://www.researchgate.net/publication/225187745_Changes_in_honey_bee_behaviour_and_biology_under_the_influence_of_cell_phone_radiations)
- **Report on Possible Impacts of Communication Cell Towers on Wildlife Including Birds and Bees. (2010)** The Ministry of Environment and Forest. 2010. [http://www.moef.nic.in/downloads/public-information/final\\_mobile\\_towers\\_report.pdf](http://www.moef.nic.in/downloads/public-information/final_mobile_towers_report.pdf)
- **Bioeffects of mobile telephony radiation in relation to its intensity or distance from the antennae. (2010)** Panagopoulos D et al. *Int. J. Radiat. Biol.*, Vol. 86, No. 5, May 2010, pp. 345–357. <https://www.ncbi.nlm.nih.gov/pubmed/20397839>
- **Mobile phone-induced honeybee worker piping. (2009)** Daniel F June 2009. *Apidologie* (2011) 42:270–279. <https://link.springer.com/article/10.1007/s13592-011-0016-x>
- **Insect control by radio-frequency high-strength electric fields. (2009)** Ponomaryova I et al. <https://ieeexplore.ieee.org/document/5393326/>
- **Radio frequency magnetic fields disrupt magnetoreception in American cockroach. (2009)** Vácha M. *J Exp Biol.* 2009 Nov;212(Pt 21):3473–7 <https://www.ncbi.nlm.nih.gov/pubmed/19837889>
- **Magnetoreception System in Honeybees (*Apis mellifera*). (2007)** Hsu C-Y et al. *PLoS One.* 2007; 2(4): e395. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1851986/>
- **Effects of electromagnetic exposition on the behavior of the honeybee (*Apis mellifera*). (2007)** Kimmel S et al. *Environmental Systems Research*, 8: 1–8. [http://somr.info/rfr/lib/Kimmel\\_et\\_al\\_2007.pdf](http://somr.info/rfr/lib/Kimmel_et_al_2007.pdf) or [https://www.researchgate.net/publication/228510851\\_Electromagnetic\\_Radiation\\_Influences\\_on\\_Honeybees\\_Apis\\_mellifera](https://www.researchgate.net/publication/228510851_Electromagnetic_Radiation_Influences_on_Honeybees_Apis_mellifera)
- **Cell death induced by GSM 900-MHz and DCS 1800-MHz mobile telephony radiation. (2007)** Panagopoulos D et al. *Mutat Res.* 626:69–78. <https://www.ncbi.nlm.nih.gov/pubmed/17045516>
- **Can Electromagnetic Exposure Cause a Change in Behaviour? Studying Possible Non-Thermal Influences on Honey Bees- An Approach within the Framework of Educational Informatics. (2006)** Harst W et al. *ACTA SYSTEMICA – IIAS International Journal*, Vol. VI, No. 1, 1-6 2006. (2 Articles) [https://www.researchgate.net/publication/237523719\\_Can\\_Electromagnetic\\_Exposure\\_Cause\\_a\\_Change\\_in\\_Behaviour\\_Studying\\_Possible\\_Non-Thermal\\_Influences\\_on\\_Honey\\_Bees\\_-\\_An\\_Approach\\_within\\_the\\_Framework\\_of\\_Educational\\_Informatics](https://www.researchgate.net/publication/237523719_Can_Electromagnetic_Exposure_Cause_a_Change_in_Behaviour_Studying_Possible_Non-Thermal_Influences_on_Honey_Bees_-_An_Approach_within_the_Framework_of_Educational_Informatics)
- **Electromagnetic radiation: Influences on honeybees (*Apis mellifera*). (2006)** Kimmel SJ et al. 2006. Researchgate. [https://www.researchgate.net/publication/228510851\\_Electromagnetic\\_Radiation\\_Influences\\_on\\_Honeybees\\_Apis\\_mellifera](https://www.researchgate.net/publication/228510851_Electromagnetic_Radiation_Influences_on_Honeybees_Apis_mellifera)
- **AAA Effect of GSM 900 MHz mobile phone radiation on the reproductive capacity of *Drosophila melanogaster*. (2004)** Karabarbounis, A *Electromagn. Biol. Med.* 23:29–43. <http://informahealthcare.com/doi/abs/10.1081/JBC-120039350>
- **“Effects of Different Kinds of EMFs on the Offspring Production of Insects.” 2nd International Workshop on Biological effects of EMFS. (2002)** Panagopoulos DJ. & Margaritis LH. (2002) Rhodes (Greece): 348–452. A list of his works. [https://www.researchgate.net/scientific-contributions/38908092\\_Dimitris\\_J\\_Panagopoulos](https://www.researchgate.net/scientific-contributions/38908092_Dimitris_J_Panagopoulos)
- **Worker piping associated with foraging in undisturbed queenright colonies of honey bees. Apidologie 27 (1996) 13–20.** [http://www.apidologie.org/articles/apido/abs/1996/01/Apidologie\\_0044-8435\\_1996\\_27\\_1\\_ART0002/Apidologie\\_0044-8435\\_1996\\_27\\_1\\_ART0002.html](http://www.apidologie.org/articles/apido/abs/1996/01/Apidologie_0044-8435_1996_27_1_ART0002/Apidologie_0044-8435_1996_27_1_ART0002.html)
- **Bursts of magnetic fields induce jumps of misdirection in bees by a mechanism of magnetic resonance. (1988)** Korall, H et al. *Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology*, 162(3), 279284. <https://link.springer.com/article/10.1007/BF00606116>
- **Biological Effects of a 765\_kV transmission line: Exposures and thresholds in honeybee colonies. Bioelectromagnetics. Greenberg, B.** [http://www.researchgate.net/publication/227913246\\_Biological\\_effects\\_of\\_a\\_765kV\\_transmission\\_line\\_Exposures\\_and\\_thresholds\\_in\\_honeybee\\_colonies](http://www.researchgate.net/publication/227913246_Biological_effects_of_a_765kV_transmission_line_Exposures_and_thresholds_in_honeybee_colonies)
- **Effects of Electric Charges on Honeybees (1976)** Warnke, U. *Bee World*. Volume 57, Issue 2. 1976. <https://www.tandfonline.com/doi/abs/10.1080/0005772X.1976.11097592>

#### Bees and Insect Related articles

- **Magnetic Sensing through the Abdomen of the Honey bee. (2016)** Liang C-H et al. *Nature. Scientific Reports*. Volume 6, Article number: 23657 (2016). <https://www.nature.com/articles/srep23657>
- **Importance of Insects.** Purdue University. (2014) [https://extension.entm.purdue.edu/radicalbugs/index.php?page=importance\\_of\\_insects](https://extension.entm.purdue.edu/radicalbugs/index.php?page=importance_of_insects)
- **Bees Can Sense Electric Fields of Flowers. (2013)** National Geographic. Dr Clarke and Dr. Whitney. U of Bristol. Feb 2013. <http://phenomena.nationalgeographic.com/2013/02/21/bees-can-sense-the-electric-fields-of-flowers/>
- **Severe Honey Bee (*Apis mellifera*) Losses Correlate with Geomagnetic and Proton Disturbances in Earth’s Atmosphere, (2015)** Ferrari TE and Tautz J. *Journal of Astrobiology & Outreach*. <https://www.omicsonline.org/open->

- [access/severe-honey-bee-apis-mellifera-losses-correlate-with-geomagnetic-andproton-disturbances-in-earths-atmosphere-2332-2519-1000134.php?aid=57103#corr](https://www.ncbi.nlm.nih.gov/pubmed/2332-2519-1000134.php?aid=57103#corr)
- **Detection and Learning of Floral Electric Fields by Bumblebees.** (2013) Clarke D et al. 2013 Apr 5;340(6128):66-9. <http://dx.doi.org/10.1126/science.1230883>

## Birds

- **Very weak oscillating magnetic field disrupts the magnetic compass of songbird migrants.** (2017) Pakhomov A et al. *J R Soc Interface*. 2017 Aug;14(133). <https://www.ncbi.nlm.nih.gov/pubmed/28794163>
- **Weak Broadband Electromagnetic Fields are More Disruptive to Magnetic Compass Orientation in a Night-Migratory Songbird (*Erithacus rubecula*) than Strong Narrow-Band Fields.** (2016). Schwarze S et al. *Front Behav Neuroscience*. March, 2016. <http://www.ncbi.nlm.nih.gov/pubmed/?term=PMID%3A+27047356>
- **Magnetoreception in birds: The effect of radio-frequency fields.** (2015) Wiltschko R et al. *Journal of The Royal Society Interface* 12(103) · February 2015. [https://www.researchgate.net/publication/270002583\\_Magnetoreception\\_in\\_birds\\_The\\_effect\\_of\\_radio-frequency\\_fields](https://www.researchgate.net/publication/270002583_Magnetoreception_in_birds_The_effect_of_radio-frequency_fields)
- **Cellular Apoptosis and Blood Brain Barrier Permeability Changes in the Pre-Incubated Chicken Embryo's Brain by Effect of Electromagnetic Fields.**(2015) Kalantarai S et al. *Zahedan Journal of Research in Medical Science. ZJRMS* 2015, 17(2): 16-21. [http://zjrms.ir/browse.php?a\\_id=3059&slc\\_lang=en&sid=1&printcase=1&hbnr=1&hmb=1](http://zjrms.ir/browse.php?a_id=3059&slc_lang=en&sid=1&printcase=1&hbnr=1&hmb=1)
- **Electromagnetic Radiations: A Possible Impact on Population of House Sparrow (*Passer Domesticus*).** (2015) Shende VA and Patil KG, Vol 1, 2015. <http://journals.abc.us.org/index.php/ei/article/view/766>
- **Anthropogenic electromagnetic noise disrupts magnetic compass orientation in a migratory bird.** (2014) Engel S et al. 2014 May 15;509(7500):353-6. <https://www.ncbi.nlm.nih.gov/pubmed/24805233>
- **Electronics' noise disorients migratory birds. Man-made electromagnetic radiation disrupts robins' internal magnetic compasses.**(2014) . Jessica Morrison. *Nature- News*. 07 May 2014. <https://www.nature.com/news/electronics-noise-disorients-migratory-birds-1.15176>
- **Case of House Sparrow (*Passer Domesticus*) Population Decline: Role of Semi-Nomadic Pastoralist Community (Van Gujjars) in Their Conservation.** (2014). Hussain A et al. Department of Forestry, India. *International Journal of Conservation Science*. Volume 5, Issue 4, October-December 2014: 493-502. <http://www.ijcs.uaic.ro/public/IJCS-14-44-Hussain.pdf>
- **Magnetic orientation of garden warblers (*Sylvia borin*) under 1.4 MHz radiofrequency magnetic field.** (2014) Kavokin K. *J R Soc Interface*. 2014 Aug 6;11(97):20140451. <https://www.ncbi.nlm.nih.gov/pubmed/24942848>
- **EFFECT OF MOBILE PHONE FREQUENCY RADIATION ON EARLY DEVELOPMENT OF CHICK EMBRYO.**(2014) Jyoti r, Kohli K and Bagai U. *International Journal of Science, Environment ISSN 2278-3687 (O) and Technology*, Vol. 3, No 3, 2014, 1273 – 1280. <http://www.ijset.net/journal/359.pdf>
- **Anthropogenic-related Bird Mortality Focusing on Steps to Address Human-caused Problems – a White Paper for the Anthropogenic Panel, 5th International Partners in Flight Conference, August 27, 2013, Snowbird, Utah.** Albert M. Manville, II, Ph.D., Senior Wildlife Biologist, Division of Migratory Bird Management, US Fish and Wildlife Service. <https://www.sandiegocounty.gov/content/dam/sdc/dplu/ceqa/Soitec-Documents/Record-Documents/2014-03-01-StephanVolker-Comment-Letter-Exhibit-16-Soitec-Solar-DPEIR.pdf>
- **Communication Towers Pluck Birds.** (2013) January 29, 2013. David Biello. *Scientific American*. <https://www.scientificamerican.com/podcast/episode/communication-towers-pluck-birds-13-01-29/>
- **Effect of Electromagnetic Mobile Radiation on Chick Embryo Development.**(2012) Fatma Al-Qudsi and Solafa Azzouz. *Life Science Journal*. 9(2):983-991. [https://www.researchgate.net/publication/232262365\\_Effect\\_of\\_Electromagnetic\\_Mobile\\_Radiation\\_on\\_Chick\\_Embryo\\_Development](https://www.researchgate.net/publication/232262365_Effect_of_Electromagnetic_Mobile_Radiation_on_Chick_Embryo_Development)
- **Biological effects from exposure to electromagnetic radiation emitted by cell tower base stations and other antenna arrays.** (2010) Levitt and Lai. *Environmental Reviews*, 2010, 18(NA): 369-395. <http://www.nrcresearchpress.com/doi/full/10.1139/A10-018?src=recsys#.W1e35neZPEY>
- **EFFECT OF CELL PHONE RADIATION ON GAURIYA SPARROWS *PASSER DOMESTICUS*.** (2009) Dongre SD and Verma RG. ISSN-0974-2832, Vol. II, Issue-7 (August 2009) <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.398.1596&rep=rep1&type=pdf>
- **Communication towers, lights, and birds: successful methods of reducing the frequency of avian collisions.** (2009) Gehring J et al. *Ecol Appl*. 2009 Mar;19(2):505-14. <https://www.ncbi.nlm.nih.gov/pubmed/19323206>
- **Oscillating magnetic field disrupts magnetic orientation in Zebra finches, *Taeniopygia guttata*.** (2009) Keary N. *Front Zool*. 2009 Oct 23;6:25. <https://frontiersinzoology.biomedcentral.com/articles/10.1186/1742-9994-6-25>
- **The Urban Decline of the House Sparrow (*Passer domesticus*): A Possible Link with Electromagnetic Radiation.** (2007) Balmori A and Hallberg O. *Electromagnetic Biology and Medicine*, 26: 141–151, 2007. <https://www.ncbi.nlm.nih.gov/pubmed/17613041>
- **A possible effect of electromagnetic radiation from mobile phone base stations on the number of breeding house sparrows (*Passer domesticus*)** (2007) Everaert and Bauwens. *Electromagnetic Biology and Medicine* 26:63–72 , 2007. <https://www.ncbi.nlm.nih.gov/pubmed/17454083>

- **Federal Communications Commission. 2006. Effects of communication towers on migratory birds.** Notice of Proposed Rulemaking. WT Docket No. 03-187, FCC 06-164, Federal Register 71(225): 67510-67518, November 22, Feb 2, 2007 <http://apps.fcc.gov/ecfs/document/view;jsessionid=nCRdSVrXPXOhlpmr8lbQC3GZOCvNnKhgHnnJWgTLO2ZCRV3DCsFc1357496456!-1864380355?id=6518724776>
- **Exposure to radio frequency radiation emitted by cell phone and mortality in chick embryos (Gallus domesticus).** (2006) Ingole IV and Ghosh SK. Biomedical Research (2006) Volume 17, Issue 3. <http://www.alliedacademies.org/articles/exposure-to-radio-frequency-radiation-emitted-by-cell-phone-and-mortality-in-chick-embryos-gallus-domesticus.html>
- **Possible Effects of Electromagnetic Fields from Phone Masts on a Population of White Stork (Ciconia ciconia) (2005)** Balmori A. Electromagnetic Biology and Medicine, 24: 109–119, 2005. <https://www.tandfonline.com/doi/abs/10.1080/15368370500205472>
- **The effects of electromagnetic fields from power lines on avian reproductive biology and physiology: a review. (2005)** Kim J. Fernie and James Reynolds. Journal of Toxicology and Environmental Health. 8:127-140, 2005. [https://www.fws.gov/southwest/es/documents/R2ES/LitCited/LPC\\_2012/Fernie\\_and\\_Reynolds\\_2005.pdf](https://www.fws.gov/southwest/es/documents/R2ES/LitCited/LPC_2012/Fernie_and_Reynolds_2005.pdf)
- **Magnetic compass orientation of migratory birds in the presence of a 1.315 MHz oscillating field.(2005)** Thalau, P., T. Ritz, K. Stapput, R. Wiltshcko, and W. Wiltshcko. 2005. Naturwissenschaften 92:86-90. <http://www.ncbi.nlm.nih.gov/pubmed/15614508>
- **Resonance effects indicate a radical-pair mechanism for avian magnetic compass. (2004)** Ritz T. Nature. 2004 May 13;429(6988):177-80. <https://www.nature.com/articles/nature02534>
- **The decline of the House Sparrow: a review. (2003)** Summers-Smith, Journal of British Birds, 96:439–446, 2003. <https://britishbirds.co.uk/article/the-decline-of-the-house-sparrow-a-review/>
- **Effects of electromagnetic fields on the reproductive success of American kestrels. (2000).** Fernie KJ et al. Biochem. Zool. 2000, Jan-Feb;73:60–65. <https://www.ncbi.nlm.nih.gov/pubmed/10685907>
- **Mortality of chicken embryos exposed to EMFs from mobile phones. (1998)** Youbicier-Simo BJ et al. Presented at the Twentieth Annual Meeting of the Bioelectromagnetics Society, St. Pete Beach, FL, June 1998. <https://www.buergerwelle.de/assets/files/grn/omega55.htm>
- **Evidence of a role for endogenous electrical fields in chick embryo development. (1992)** Hotary and Robinson Development 114:985–996, 1992 <https://www.ncbi.nlm.nih.gov/pubmed/1618158>
- **The properties of bird feathers as converse piezoelectric transducers and as receptors of microwave radiation. II. Bird feathers as dielectric receptors of microwave radiation. (1975)** Bigu-del-Blanco J, Romero-Sierra C. Biotelemetry. 1975;2(6):354-64. <https://www.ncbi.nlm.nih.gov/pubmed/1242004>
- **The properties of bird feathers as converse piezoelectric transducers and as receptors of microwave radiation. Bird feathers as converse piezoelectric transducers. (1975)** 1975;2(6):341-53. Bigu-del-Blanco J et al. <https://www.ncbi.nlm.nih.gov/pubmed/1235241>

#### Birds Related Articles

- **Forty Percent of the World's Bird Populations Are in Decline, New Study Finds. April 23, 2018.** Yale Environment 360. <https://e360.yale.edu/digest/forty-percent-of-the-worlds-bird-populations-are-in-decline-new-study-finds>
- **Night-migratory songbirds possess a magnetic compass in both eyes. (2012)** Engels S et al. PLoS One. 2012;7(9):e43271. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3440406/>
- **Magnetite-based magnetoreception. (2001)** Kirschvink JL et al. Current Opinion in Neurobiology. Volume 11, Issue 4, August 2001 , Pages 462-467. <https://www.sciencedirect.com/science/article/pii/S095943880000235X>

#### Cell Towers

- **Impacts of radio-frequency electromagnetic field (RF-EMF) from cell phone towers and wireless devices on biosystem and ecosystem—A review. (2013)** Sivani Saravanamuttu. Biology and Medicine. 4(4):202-216. January 9. [https://www.researchgate.net/publication/258521207\\_Impacts\\_of\\_radio-frequency\\_electromagnetic\\_field\\_RF-EMF\\_from\\_cell\\_phone\\_towers\\_and\\_wireless\\_devices\\_on\\_biosystem\\_and\\_ecosystem-A\\_review](https://www.researchgate.net/publication/258521207_Impacts_of_radio-frequency_electromagnetic_field_RF-EMF_from_cell_phone_towers_and_wireless_devices_on_biosystem_and_ecosystem-A_review)
- **[Increased occurrence of nuclear cataract in the calf after erection of a mobile phone base station]. (2012)** Hassig M et al. Schweiz Arch Tierheilkd. 2012 Feb;154(2):82-6. <https://www.ncbi.nlm.nih.gov/pubmed/22287140>
- **Electromagnetic pollution from phone masts. Effects on wildlife.(2009)** Balmori Pathophysiology, 16: 191–199. <https://www.ncbi.nlm.nih.gov/pubmed/19264463>
- **A possible effect of electromagnetic radiation from mobile phone base stations on the number of breeding house sparrows (Passer domesticus) (2007)** Everaert and Bauwens. Electromagnetic Biology and Medicine 26:63–72 , 2007. <https://www.ncbi.nlm.nih.gov/pubmed/17454083>



## Fish

- **Potential interactions between diadromous fishes of U.K. conservation importance and the electromagnetic fields and subsea noise from marine renewable energy developments. (2012) Gill AB et al. J Fish Biol. 2012 Jul;81(2):664-95.**  
<https://www.ncbi.nlm.nih.gov/pubmed/22803729>
- **Evidence for Geomagnetic Imprinting as a Homing Mechanism in Pacific Salmon. (2012) Putnam NF et al. Current Biology. Volume 23, Issue 4. Pages 312-316. 18 February 2013**  
<https://www.sciencedirect.com/science/article/pii/S0960982213000031>
- **Offshore windmills and the effects of electromagnetic fields on fish. (2007) Ohman MC et al. Ambio. 2007 Dec;36(8):630-3.** <https://www.ncbi.nlm.nih.gov/pubmed/18240676>
- **Offshore windmills and the effects of electromagnetic fields on fish. (2007) Ohman MC et al. Ambio. 2007 Dec;36(8):630-3.** <https://www.ncbi.nlm.nih.gov/pubmed/18240676>

## Government Letters and Papers Cell Towers

- **(2016) US Fish and Wildlife Service. Endangered Species. Communications Tower Siting, Construction, Operation, and Decommissioning Recommendations. Service Interim Guidelines.**  
<https://www.fws.gov/midwest/endangered/section7/telecomguidance.html>
- **(2014) of Interior Letter to National Telecommunications and Information Administration Regarding Adverse Impact of Cell Tower Radiation on Wildlife.** Willie Taylor, Director, Office of Environmental Policy and Compliance.  
[https://www.ntia.doc.gov/files/ntia/us\\_doi\\_comments.pdf](https://www.ntia.doc.gov/files/ntia/us_doi_comments.pdf)
- **(2014) Albert M Manville. Status of U.S. Fish and Wildlife Service Developments with Communication Towers with a Focus on Migratory Birds: Updates to Service Staff Involved with Tower Issues – A Webinar. Talking Points and Literature Citations, Available to the Public.**  
<https://www.fws.gov/midwest/es/planning/pdf/usfws2013revisedguidancecommtowerssupportinginfo27sept.pdf>
- **(2013) COMMUNICATION TOWER AND ANTENNA CONSULTATION IN NEW JERSEY.** Albert M. Manville, Senior Wildlife Biologist & Avian-Structural Lead  
Division of Migratory Bird Management, U.S. Fish & Wildlife Service.  
<https://www.fws.gov/northeast/njfieldoffice/pdf/celltower.pdf>
- **(2009) Albert M. Manville. Towers, turbines, power lines, and buildings – steps being taken by the U.S. Fish and Wildlife Service to avoid or minimize take of migratory birds at these structures.** Manville, A.M., II. 2009. In C.J. Ralph and T.D. Rich (editors). Proceedings 4th International Partners in Flight Conference, February 2008, McAllen, TX.  
<https://www.fws.gov/migratorybirds/pdf/management/manville2009.pdf>
- **(2009) U.S. Fish and Wildlife Service Briefing Paper on the Need for Research into the Cumulative Impacts of Communication Towers on Migratory Birds and Other Wildlife in the United States** Division of Migratory Bird Management (DMBM) Public Release Briefing April 17, 2009; Discusses Potential Radiation Impacts to Birds and Other Pollinators serving as a review of some of the literature.  
<http://electromagnetichealth.org/pdf/CommTowerResearchNeedsPublicBriefing-2-409.pdf>
- **(2009) The Effect of Cell Towers on Birds and Bats at Rock Creek Park, Washington, D.C.** Dickey and Gates. University of Maryland Center for Environmental Science to Resource Management Specialist National Park Service.  
<http://www.npshistory.com/publications/rocr/cell-towers-birds-bats.pdf>
- **(2007) Concerns Over Potential Radiation Impacts of Cellular Communication Towers on Migratory Birds and Other Wildlife,** Albert M. Manville, PhD; Senior Wildlife Specialist Gives Congressional Staff Briefing on the Environmental and Human Health Effects of Radiofrequency (RF) Radiation, House Capitol 5, Washington DC. Powerpoint presentation.  
[https://ehtrust.org/wp-content/uploads/manville\\_dc.compressed.pdf](https://ehtrust.org/wp-content/uploads/manville_dc.compressed.pdf)
- **(2007) US Fish and Wildlife letter to Federal Communications Commission regarding effects of communication towers on migratory birds. Notice of Proposed Rulemaking, WT Docket No. 03-187, FCC 06-164, Federal Register 71(225): 67510-67518, November 22.**  
<http://apps.fcc.gov/ecfs/document/view;jsessionid=nCRdSVrXPXQhlpnr8lbOC3GZQcvNnKhgHnnJWgTLO2ZCRV3DCsFc!1357496456!-1864380355?id=6518724776>
- **(2005) Albert M Manville. Bird strikes and electrocutions at power lines, communication towers, and wind turbines: state of the art and state of the science – next steps toward mitigation.** Bird Conservation Implementation in the Americas: Proceedings 3rd International Partners in Flight Conference 2002, C.J. Ralph and T.D. Rich (eds.). U.S.D.A. Forest Service General Technical Report PSW-GTR-191, Pacific Southwest Research Station, Albany, CA: 1051-1064.  
<https://www.fs.usda.gov/treesearch/pubs/32105>

## Magnetoreception

- **Magnetoreception in the wood mouse (Apodemus sylvaticus): Influence of weak frequency-modulated radio frequency fields. (2015) Malkemper EP et al. Scientific Reports. April 2015.**

<https://www.researchgate.net/publication/275654911> Magnetoreception in the wood mouse Apodemus sylvaticus Influence of weak frequency-modulated radio frequency fields

- **Orientation and Navigation of the European Eel Using the Earth's Magnetic Field and Its Possible Implications for Management. (2014)** Durif C et al. Conference Paper: American Fisheries Society 144th Annual Meeting. <https://www.researchgate.net/publication/267898629> Orientation and Navigation of the European Eel Using the Earth's Magnetic Field and Its Possible Implications for Management
- **Rapid Learning of Magnetic Compass Direction by C57BL/6 Mice in a 4-Armed 'Plus' Water Maze.(2013)** Phillips, J et al. PLoS ONE8(8):e73112 · August 2013. <https://www.researchgate.net/publication/256491013> Rapid Learning of Magnetic Compass Direction by C57BL6 Mice in a 4-Armed Plus Water Maze
- **It's Electric: Biologists Seek to Crack Cell's Bioelectric Code. (2013)** Researchers have found that cells' bioelectrical communication steers growth and development. It is hoped that if the code can be learned, manipulating cellular signaling could be used to stave off cancer or even regenerate limbs. Scientific America. March 27, 2013. <https://www.scientificamerican.com/article/bioelectric-code/>
- **Night-migratory songbirds possess a magnetic compass in both eyes. (2012)** Engels S et al. PLoS One. 2012;7(9):e43271. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3440406/>
- **Robins have a magnetic compass in both eyes. (2011)** Hein CM et al. 2011 Mar 31;471(7340):E11-2; <https://www.ncbi.nlm.nih.gov/pubmed/21455128>
- **Lateralization of magnetic compass orientation in pigeons. (2010)** Hein CM et al. J R Soc Interface. 2010 Apr 6;7 Suppl 2:S235-40. <https://www.ncbi.nlm.nih.gov/pubmed/20053653>
- **Avian magnetite-based magnetoreception: a physiologist's perspective. (2010).** J R Soc Interface. 2010 Apr 6; 7(Suppl 2): S193-S205. Cadiou H and McNaughton P. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2844004/>
- **Lateralized response of chicks to magnetic cues. (2008)** Rogers LJ et al. Behave Brain Res. 2008 Jan 10;186(1):66-71. <https://www.ncbi.nlm.nih.gov/pubmed/17765981>
- **Two different types of light-dependent responses to magnetic fields in birds.(2005)** Wiltschko R, Curr Biol. 2005 Aug 23, <http://www.ncbi.nlm.nih.gov/pubmed/16111946>
- **Resonance effects indicate a radical-pair mechanism for avian magnetic compass. (2004)** Ritz T. Nature. 2004 May 13;429(6988):177-80. <http://www.ncbi.nlm.nih.gov/pubmed/15141211>
- **Magnetic compass orientation in European robins is dependent on both wavelength and intensity of light. (2002)** Muheim R. J Exp Biol. 2002 Dec;205. <http://www.ncbi.nlm.nih.gov/pubmed/12432008>
- **Magnetite-based magnetoreception. (2001)** Kirschvink JL et al. Current Opinion in Neurobiology. Volume 11, Issue 4, August 2001 , Pages 462-467. <https://www.sciencedirect.com/science/article/pii/S09594388000235X>
- **Magnetic Orientation In Birds . (1996).** Wiltschko W. and R. Wiltschko The Journal of Experimental Biology 199, 29-38 (1996).
- **Magnetite in human tissues: a mechanism for the biological effects of weak ELF magnetic fields. Kirschvink JL.** 1992;Suppl 1:101-13<https://www.ncbi.nlm.nih.gov/pubmed/1285705>
- **Biogenic Magnetite as a Basis for Magnetic Field Detection in Animals. Biosystems. Vol 13. 181-201.** Kirschvink,J., Gould, J. <http://web.gps.caltech.edu/~jkirschvink/pdfs/Biosystems1981.pdf>
- **The importance of restoration of the atmospheric electrical environment in closed Bioregenerative Life Supporting Systems. (1996)** Gorgolewski S. Adv Space Res.1996;18(4-5):283-5. <https://www.ncbi.nlm.nih.gov/pubmed/11538811>

## Mammals

- **[Increased occurrence of nuclear cataract in the calf after erection of a mobile phone base station]. (2012)** Hassig et al. Schweiz Arch Tierheilkd. 2012 Feb;154(2):82-6. <https://www.ncbi.nlm.nih.gov/pubmed/22287140>
- **Extremely low-frequency electromagnetic fields disrupt magnetic alignment of ruminant. (2009)** Burda H et al. Proceedings of the National Academy of Science U S A. 2009 April 7; 106(14): 5708-5713. Published online 2009 March 19. <http://www.pnas.org/content/106/14/5708>
- **Prevalence of nuclear cataract in Swiss veal calves and its possible association with mobile telephone antenna base stations. (2009)** Hässig M et al. Schweiz Arch Tierheilkd. 2009 Oct;151(10):471-8. <https://www.ncbi.nlm.nih.gov/pubmed/19780007>
- **Reproductive and developmental effects of EMF in vertebrate animal models.(2009)** Pourlis AF. August 2009. Volume 16, Issues 2-3, Pages 179-189. [https://www.pathophysiologyjournal.com/article/S0928-4680\(09\)00015-7/fulltext](https://www.pathophysiologyjournal.com/article/S0928-4680(09)00015-7/fulltext)
- **Cognitive impairment in rats after long-term exposure to GSM-900 mobile phone radiation. (2008)** Nittby H et al. Bioelectromagnetics 29: 219-232: 2008. <https://www.ncbi.nlm.nih.gov/pubmed/18044737> Summary: This study showed cognitive impairment in rats after long-term exposure to PM MW radiation. This is study of rats shows that after 2 hours per week for 55 weeks there was impaired memory for objects in exposed as compared to sham animals.
- **Geomagnetic field modulates artificial static magnetic field effect on arterial baroreflex and on microcirculation. (2007)** Gimitrov J. Int J Biometeorol. 2007 Mar;51(4):335-44. <https://www.ncbi.nlm.nih.gov/pubmed/16983578>

- **Geomagnetic field effect on cardiovascular regulation. (2004)** Gimitrov J and Gimitrov A. *Bioelectromagnetics*. 2004 Feb;25(2):92-101. <https://www.ncbi.nlm.nih.gov/pubmed/14735558>
- **Verapamil protective effect on natural and artificial magnetic field cardiovascular impact. (2002)** Gmitrov J and Ohkubo C. 2002 Oct;23(7):531-41. <https://www.ncbi.nlm.nih.gov/pubmed/12224057>
- **Radiation-Induced Changes in the Prenatal Development of Mice. (1997)** Magras I and Xenos T. *Bioelectromagnetics* 18:455-461, 1997. <https://www.ncbi.nlm.nih.gov/pubmed/9261543>
- **Absence of chronic effect of exposure to short-wave radio broadcast signal on salivary melatonin concentrations in dairy cattle. (1997).** Stärk KD et al. *Journal of Pineal Research*, 22(4), 171-6.. <http://www.ncbi.nlm.nih.gov/pubmed/9247202>

#### Non-Thermal, Low Power effects

- **Chronic non-thermal exposure of modulated 2450 MHz microwave radiation alters thyroid hormones and behavior of male rats. (2008)** Sinha RK. *International Journal of Radiation Biology*, Vol. 84, No. 6, June 2008, pp. 505 – 513. <https://www.ncbi.nlm.nih.gov/pubmed/18470749>
- **Microwave Irradiation Affects Gene Expression in G. Ledoigt. (2006)** Vian A et al. *Plant Signal Behav*. 2006 Mar-Apr; 1(2): 67–70. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2633881/>
- **Transgenic nematodes as biomonitors of microwave-induced stress. (1998)** *Mutation Research*, 399(1), 55-64, 1998. <https://www.sciencedirect.com/science/article/pii/S0027510797002662>

#### Plants and Seeds

- **Review: Weak radiofrequency radiation exposure from mobile phone radiation on plants. (2017)** Halgamuge MN. *Electromagn Biol Med*. 2017;36(2):213-235. <https://www.ncbi.nlm.nih.gov/pubmed/27650031>
- **Exposure to 915 MHz radiation induces micronuclei in Vicia faba root tips. (2016)** Gustavino B, *Mutagenesis*. 2016 Mar;31(2):187-92. <https://www.ncbi.nlm.nih.gov/pubmed/26476436>
- **Induction of stress volatiles and changes in essential oil content and composition upon microwave exposure in the aromatic plant Ocimum basilicum. (2016)** Lung I et al. *Sci Total Environ*. 2016 Nov 1;569-570:489-495. <https://www.ncbi.nlm.nih.gov/pubmed/27362630>
- **Plant Responses to High Frequency Electromagnetic Fields. (2016)** A Vian. *BioMed Research International*. Volume 2016 (2016) <https://www.hindawi.com/journals/bmri/2016/1830262/>
- **Short-duration exposure to radiofrequency electromagnetic radiation alters the chlorophyll fluorescence of duckweeds (Lemna minor). (2014)** Senavirathna MD et al. *Electromagn Biol Med*. 2014 Dec;33(4):327-34. <https://www.ncbi.nlm.nih.gov/pubmed/24131393>
- **Influence of microwave frequency electromagnetic radiation on terpene emission and content in aromatic plants. (2014)** Soran ML. *J Plant Physiol*. 2014 Sep 15;171(15):1436-43. <https://www.ncbi.nlm.nih.gov/pubmed/25050479>
- **Effect of Millimeter Waves with Low Intensity on Peroxidase Total Activity and isoenzyme Composition in Cells of Wheat Seedling Shoots (2013)** *International Journal of Scientific Research in Environmental Sciences (IJSRES)*, 1(9), pp. 217-223, 2013. <http://www.ijsrpub.com/uploads/papers/IJSRES/IJSRES-Sep2013/IJSRES-13-54.pdf>
- **Cell phone radiations affect early growth of Vigna radiata (mung bean) through biochemical alterations. (2010)** Sharma VP et al. *Z Naturforsch C*. 2010 Jan-Feb;65(1-2):66-72. <https://www.ncbi.nlm.nih.gov/pubmed/20355324>
- **Report on Possible Impacts of Communication Cell Towers on Wildlife Including Birds and Bees.** The Ministry of Environment and Forest. 2010. [http://www.moef.nic.in/downloads/public-information/final\\_mobile\\_towers\\_report.pdf](http://www.moef.nic.in/downloads/public-information/final_mobile_towers_report.pdf)
- **Adverse Influence of Radio Frequency Background on Trembling Aspen Seedlings: Preliminary Observations. (2010)** Katie Haggerty. *International Journal of Forestry Research*, Volume 2010. Article ID 836278 <https://www.hindawi.com/journals/ijfr/2010/836278/>
- **A possible role for extra-cellular ATP in plant responses to high frequency, low amplitude electromagnetic field. (2008)** Roux D et al, *Plant Signaling & Behavior* 3:6, 383-385; June 2008; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2634308/>
- **High Frequency (900 MHz) low amplitude (5 V m<sup>-1</sup>) electromagnetic Field: a genuine environmental stimulus that affects transcription, translation, calcium and energy charge in tomato. (2007)** Roux D et al. *Planta*. 227(4): 88391, 2007. <https://www.ncbi.nlm.nih.gov/pubmed/18026987>
- **Exposure to radiofrequency radiation induces oxidative stress in duckweed Lemna minor L. (2007)** Tkalec M et al. *Sci Total Environ*. 2007 Dec 15;388(1-3):78-89. <https://www.ncbi.nlm.nih.gov/pubmed/17825879>
- **Plants Respond to GSM-Like Radiation. (2007)** Vian A et al. *Plant Signal Behav*. 2007 Nov-Dec; 2(6): 522–524. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2634357/>
- **Microwave Irradiation Affects Gene Expression in G. Ledoigt. (2006)** Vian A et al. *Plant Signal Behav*. 2006 Mar-Apr; 1(2): 67–70. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2633881/>

- **Changes in calcium signalling, gravitropism, and statocyte ultrastructure in pea roots induced by calcium channel blockers. (2004)** Belyavskaya NA et al. *J Gravit Physiol.* 2004 Jul;11(2):P209-10. <https://www.ncbi.nlm.nih.gov/pubmed/16240511>
- **The Effects of Microwaves on the Trees and Other Plants.(2003)** Spain. [http://www.hese-project.org/de/emf/WissenschaftForschung/Balmori\\_Dr.\\_Alfonso/showDoc.php?lang=de&header=Dr.%20Balmori&file=THE%20EFFECTS%20OF%20MICROWAVES%20ON%20THE%20TREES%20AND%20OTHER%20PLANTS.html&back=../showAuthor.php?target=Balmori\\_Dr.\\_Alfonso](http://www.hese-project.org/de/emf/WissenschaftForschung/Balmori_Dr._Alfonso/showDoc.php?lang=de&header=Dr.%20Balmori&file=THE%20EFFECTS%20OF%20MICROWAVES%20ON%20THE%20TREES%20AND%20OTHER%20PLANTS.html&back=../showAuthor.php?target=Balmori_Dr._Alfonso) or [http://www.boomaantastingen.nl/onderzoek\\_bomen\\_planten.pdf](http://www.boomaantastingen.nl/onderzoek_bomen_planten.pdf)
- **Growth and yield of winter wheat (Triticum aestivum L.) and corn (Zea mays L.) near a high voltage transmission line. (2003)** Soga G et al. *Bioelectromagnetics.* 2003 Feb;24(2):91-102. <https://www.ncbi.nlm.nih.gov/pubmed/12524675>
- **Ultrastructure and calcium balance in meristem cells of pea roots exposed to extremely low magnetic fields. (2001)** Belyavskaya NA et al. *Adv. Space Res.* 28: 645-650. <https://www.ncbi.nlm.nih.gov/pubmed/11803967>
- **PLANT MITOCHONDRIA AND OXIDATIVE STRESS: Electron Transport, NADPH Turnover, and Metabolism of Reactive Oxygen Species. (2001)** Moller IM. *Annu Rev Plant Physiol Plant Mol Biol.* 2001 Jun;52:561-591. <https://www.ncbi.nlm.nih.gov/pubmed/11337409>
- **[Cytogenetic changes induced by low-intensity microwaves in the species Triticum aestivum]. (1998)** [Article in Romanian]. Pavel A et al. *Rev Med Chir Soc Med Nat Iasi.* 1998 Jul-Dec;102(3-4):89-92. <https://www.ncbi.nlm.nih.gov/pubmed/10756851>
- **Long-term exposure of young spruce and beech trees to 2450-MHz microwave radiation.(1996)** Schmutz P et al. *Science of the Total Environment.* Volume 180, Issue 1, 2 February 1996 , Pages 43-48. <https://www.sciencedirect.com/science/article/pii/0048969795049185>
- **Response of Pinus sylvestris L. needles to electromagnetic fields. Cytological and ultrastructural aspects. (1996)** Selga Tand Selga M. *Skrunda Radio Location Station, Latvia. Science of The Total Environment,* 180(1), 65-73, 1996. <https://www.sciencedirect.com/science/article/pii/0048969795049215>

#### RadioTracking of Animals

- **Radiotelemetry and wildlife: Highlighting a gap in the knowledge on radiofrequency radiation effects. (2016)** Balmori A. *Sci Total Environ.* 2016 Feb 1;543(Pt A):662-9. <https://www.ncbi.nlm.nih.gov/pubmed/26615484>
- **Estimating Duration of Short-Term Acute Effects of Capture Handling and Radiomarking. (2010)** *Journal of Wildlife Management.*(2010) Holt RD et al. 73(6):989 – 995 · December 2010. [https://www.researchgate.net/publication/229667015\\_Estimating\\_Duration\\_of\\_Short-Term\\_Acute\\_Effects\\_of\\_Capture\\_Handling\\_and\\_Radiomarking](https://www.researchgate.net/publication/229667015_Estimating_Duration_of_Short-Term_Acute_Effects_of_Capture_Handling_and_Radiomarking)
- **Indirect Negative Impacts of Radio-Collaring: Sex Ratio Variation in Water Voles. (2005)** Moorhouse and MacDonald. *Journal of Applied Ecology.* 22 February 2005. <https://besjournals.onlinelibrary.wiley.com/doi/full/10.1111/j.1365-2664.2005.00998.x>
- **Demography, extinction and intervention in a small population: the case of the Serengeti wild dogs. (1994)** Burrows R et al. *Proc Biol Sci.* 1994 Jun 22;256(1347):281-92. <https://www.ncbi.nlm.nih.gov/pubmed/8058803>
- **Effects of ear-tagging on survival of moose calves. Journal of Wildlife Management. (1991)** 63(1):354-358 · January 1999. [https://www.researchgate.net/publication/236994469\\_Effects\\_of\\_ear-tagging\\_on\\_survival\\_of\\_moose\\_calves](https://www.researchgate.net/publication/236994469_Effects_of_ear-tagging_on_survival_of_moose_calves)
- **EFFECTS OF RADIO TAGS ON SPOTTED OWLS. (1991)** Paton P et al. *US Forest Service. Department of Agriculture. J Wildl Management* 55(4):617-622. <https://www.fs.fed.us/psw/publications/paton/paton1.PDF>

#### Trees

- **Radiofrequency radiation injures trees around mobile phone base stations. (2016)** Waldmann-Selsam C. *Sci Total Environ.* 2016 Dec 1;572:554-569. <https://www.ncbi.nlm.nih.gov/pubmed/27552133>.
- **Damage from Chronic High Frequency Exposure; Mobile Telecommunications, WiFi, Radar, Radio Relay Systems, Terrestrial Radio, TV, etc. First Symposium; The effect of electromagnetic radiation on trees, The Groene Paviljoen, Baarn. PowerPoint presentation. (2011)** Volker S. *Ing. Dipl. Phys.* 18.2011.
- **Adverse Influence of Radio Frequency Background on Trembling Aspen Seedlings: Preliminary Observations. (2010)** Katie Haggerty. *International Journal of Forestry Research.* Volume 2010, <https://www.hindawi.com/journals/ijfr/2010/836278/>
- **Does the Skrunda Radio Location Station diminish the radial growth of pine trees. 1996.** Balodis VG. et al. *Sci. Total Environ.,* 180: 57-64. <https://www.sciencedirect.com/science/article/pii/0048969795049207>
- **Response of Pinus sylvestris L. needles to electromagnetic fields. Cytological and ultrastructural aspects. (1996)** *Science of The Total Environment.* Selga and Selga. Volume 180, Issue 1,2. February 1996 , Pages 65-73. <https://www.sciencedirect.com/science/article/pii/0048969795049215>
- **Studies on the Effects of Radio-Frequency Fields on Conifers. (1996)** Lerchl D et al. *University of Wuppertal, Chair of Electromagnetic Theory; Conference Poster.* <http://www.iddd.de/umtsno/lebewesen/lebewesen7.htm>

- **Long-term exposure of young spruce and beech trees to 2450-MHz microwave radiation. (1996).** Schmutz P et al. Science of the Total Environment. Volume 180, issue 1,2 February 1996 , Pages 43-48.  
<https://www.sciencedirect.com/science/article/pii/0048969795049185>

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ITEM #: #7 ZAB DATE: 6/27/19

CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD

AGENDA TOPIC #7

NAME Kelley Hart  
(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION   
(Optional)

RESIDENT  BUSINESS OWNER \_\_\_\_\_  
OTHER \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

PHONE 310-497-7773 DATE 6/27/19  
(In case we would like to contact you)

ITEM #: ~~#7~~ ZAB DATE: 6-27-19

CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD

AGENDA TOPIC 2398 Bancroft Ave

NAME Stephanie K Thomas  
(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION   
(Optional)

RESIDENT  BUSINESS OWNER \_\_\_\_\_  
OTHER \_\_\_\_\_

SIGNATURE: Stephanie K Thomas

PHONE 570-527-6062 DATE 6-27-19  
(In case we would like to contact you)

ITEM #: \_\_\_\_\_ ZAB DATE: 6-27-19

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CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD

AGENDA TOPIC Verizon Towers @ Euclid

NAME OREN S. LEIMAN  
(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION   
(Optional)

RESIDENT  BUSINESS OWNER \_\_\_\_\_  
OTHER \_\_\_\_\_

SIGNATURE: Oren S Leiman

PHONE 415-577-9050 DATE 6-27-19  
(In case we would like to contact you)

ITEM #: \_\_\_\_\_ ZAB DATE: \_\_\_\_\_

CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD

AGENDA TOPIC cell sites

NAME Kate Bernier  
(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION   
(Optional)

RESIDENT \_\_\_\_\_ BUSINESS OWNER \_\_\_\_\_  
OTHER \_\_\_\_\_

SIGNATURE: Kate Bernier

PHONE (510) 548-8762 DATE \_\_\_\_\_  
(In case we would like to contact you)

ITEM #: EP2018-0236 ZAB DATE: 6-27-19

CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD

AGENDA TOPIC O EUCLID AVENUE

NAME MARK BERGER (Project Address)

(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION X  
(Optional)

OTHER RESIDENT X BUSINESS OWNER \_\_\_\_\_

SIGNATURE: [Signature]

PHONE 510 418-1843 DATE 6-27-19  
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ITEM #: 7 ZAB DATE: 6/27/19

CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD

AGENDA TOPIC O Euclid

NAME Steve Tracy (Project Address)

(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION ✓  
(Optional)

OTHER Euclid RESIDENT ✓ BUSINESS OWNER \_\_\_\_\_

SIGNATURE: [Signature]

PHONE 570 881 6042 DATE 6/27/19  
(In case we would like to contact you)

ITEM #: 7 ZAB DATE: 6/27/19

CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD

AGENDA TOPIC Cell Tower Verizon Euclid

NAME Regina Myers (Project Address)

(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION X  
(Optional)

OTHER RESIDENT ✓ BUSINESS OWNER \_\_\_\_\_

SIGNATURE: [Signature]

PHONE 510-520-2862 DATE 6/27/19  
(In case we would like to contact you)

ITEM #: #7 ZAB DATE: \_\_\_\_\_

CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD

AGENDA TOPIC O Euclid Cell Tower

NAME Christine Fasano (Project Address)

(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION ✓  
(Optional)

OTHER RESIDENT ✓ BUSINESS OWNER \_\_\_\_\_

SIGNATURE: [Signature]

PHONE 510 558 8715 DATE \_\_\_\_\_  
(In case we would like to contact you)



ITEM #: \_\_\_\_\_ ZAB DATE: 6/27/19

**CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD**

AGENDA TOPIC #7

(Project Address)

NAME Phoebe Sorgen  
(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION   
(Optional)

OTHER RESIDENT \_\_\_\_\_ BUSINESS OWNER \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

PHONE \_\_\_\_\_ DATE \_\_\_\_\_  
(In case we would like to contact you)

ITEM #: 7 ZAB DATE: June 27

**CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD**

AGENDA TOPIC 0 Euclid Ave.

(Project Address)

NAME MARION SNOW  
(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION   
(Optional)

OTHER RESIDENT  BUSINESS OWNER \_\_\_\_\_

SIGNATURE: Ma Snow

PHONE 510.368.4592 DATE 6/27/19  
(In case we would like to contact you)

ITEM #: 7 ZAB DATE: 6/27/19

**CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD**

AGENDA TOPIC 0 EUCLID

(Project Address)

NAME LLOYD MORGAN  
(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION   
(Optional)

OTHER RESIDENT  BUSINESS OWNER \_\_\_\_\_

SIGNATURE: Lloyd Morgan

PHONE 510 841-4362 DATE 6/27/19  
(In case we would like to contact you)

ITEM #: \_\_\_\_\_ ZAB DATE: 6/27/19

**CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD**

AGENDA TOPIC Cell Tower at 0 Euclid

(Project Address)

NAME Justin Lombardelli  
(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION   
(Optional)

OTHER RESIDENT  BUSINESS OWNER \_\_\_\_\_

SIGNATURE: Justin Lombardelli

PHONE 650.380.0480 DATE 6/27/19  
(In case we would like to contact you)

ITEM #: 7 ZAB DATE: 6/27/2019

CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD

AGENDA TOPIC 0 Euclid Avenue  
(Project Address)

NAME Susan Nunes Fadley  
(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION   
(Optional)

RESIDENT  BUSINESS OWNER \_\_\_\_\_  
OTHER \_\_\_\_\_

SIGNATURE: Susan Nunes Fadley

PHONE 510-439-7747 DATE 6/27/2019  
(In case we would like to contact you)

ITEM #: 7 ZAB DATE: 6-27-19

CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD

AGENDA TOPIC 7. Zell tower Euclid  
(Project Address)

NAME Stephanie Thomas  
(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION   
(Optional)

RESIDENT  BUSINESS OWNER \_\_\_\_\_  
OTHER \_\_\_\_\_

SIGNATURE: Stephanie Thomas

PHONE 510-527-6062 DATE 6-27-19  
(In case we would like to contact you)

ITEM #: 7 ZAB DATE: 6/27/19

CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD

AGENDA TOPIC 0 Euclid - Verizon Cell  
(Project Address)

NAME Allen Myers  
(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION   
(Optional)

RESIDENT  BUSINESS OWNER \_\_\_\_\_  
OTHER \_\_\_\_\_

SIGNATURE: Allen Myers

PHONE 510-501-1415 DATE 6/27/2019  
(In case we would like to contact you)

ITEM #: Action 07 ZAB DATE: \_\_\_\_\_

CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD

AGENDA TOPIC # ZP 2018-0236  
(Project Address)

NAME CHRISTIAN RAISNER  
(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION   
(Optional)

RESIDENT  BUSINESS OWNER \_\_\_\_\_  
OTHER \_\_\_\_\_

SIGNATURE: Christian Raisner

PHONE 510-774-0992 DATE 6/27/2019  
(In case we would like to contact you)

Permit ~~21008-0236~~  
ITEM #: 21008-0236 ZAB DATE: 6.27.19

CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD

AGENDA TOPIC BERRYMAN RESERVOIR

(Project Address)

NAME OLIVER RAISNER

(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION X  
(Optional)

RESIDENT X BUSINESS OWNER \_\_\_\_\_

OTHER \_\_\_\_\_

SIGNATURE: Oliver Raisner

PHONE 510.6559245 DATE 6.27.19

(In case we would like to contact you)

ITEM #: 7 ZAB DATE: 6.27.19

CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD

AGENDA TOPIC Cell Phone 50' PineTree Berryman

(Project Address)

NAME DAWN HAWK

(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION X  
(Optional)

RESIDENT X BUSINESS OWNER \_\_\_\_\_

OTHER \_\_\_\_\_

SIGNATURE: Dawn Hawk

PHONE 510.282.8003 DATE 6.27.19

(In case we would like to contact you)

ITEM #: ~~21008-0236~~ 7 ZAB DATE: 6/27/2019

ZP2016-0244

CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD

AGENDA TOPIC EUCLID AVENUE Berryman Reservoir

(Project Address)

NAME JONATHAN KHIVNER

(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION X  
(Optional)

RESIDENT X BUSINESS OWNER \_\_\_\_\_

OTHER HOME OWNER 1324 Bay View Pl # C8

SIGNATURE: Jonathan Khivner

PHONE 510.593.9291 DATE 6/27/2019

(In case we would like to contact you)

ITEM #: 7 ZAB DATE: \_\_\_\_\_

CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD

AGENDA TOPIC Verizon Tower

(Project Address)

NAME Gay Pellegrin

(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION X  
(Optional)

RESIDENT X BUSINESS OWNER \_\_\_\_\_

OTHER \_\_\_\_\_

SIGNATURE: Gay Pellegrin

PHONE \_\_\_\_\_ DATE \_\_\_\_\_

(In case we would like to contact you)

ITEM #: \_\_\_\_\_ ZAB DATE: \_\_\_\_\_

CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD

AGENDA TOPIC Cell  
(Project Address)

NAME Antoinette Stein  
(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION   
(Optional)

OTHER RESIDENT \_\_\_\_\_ BUSINESS OWNER \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

PHONE 650-8837662 DATE \_\_\_\_\_  
(In case we would like to contact you)

ITEM #: 7 ZAB DATE: 6/27/19

CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD

AGENDA TOPIC Verizon Cell Tower  
(Project Address)

NAME Robert Rose  
(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION   
(Optional)

OTHER RESIDENT \_\_\_\_\_ BUSINESS OWNER \_\_\_\_\_

SIGNATURE: Robert Rose

PHONE 510/409-1183 DATE 6/27/19  
(In case we would like to contact you)

ITEM #: \_\_\_\_\_ ZAB DATE: \_\_\_\_\_

CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD

AGENDA TOPIC opposition to proposed cell tower  
(Project Address)

NAME Angelina DeAntonis  
(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION   
(Optional)

OTHER RESIDENT  BUSINESS OWNER \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

PHONE 415-821-7288 DATE 6/27/19  
(In case we would like to contact you)

ITEM #: 7 ZAB DATE: 6/27/19

CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD

AGENDA TOPIC CORDONCES PARK  
(Project Address)

NAME ERIC POWELL  
(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION   
(Optional)

OTHER RESIDENT  BUSINESS OWNER

SIGNATURE: \_\_\_\_\_

PHONE 415 407-5060 DATE 6-27-19  
(In case we would like to contact you)

ITEM #: 7 ZAB DATE: \_\_\_\_\_

CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD *Didn't speak*

AGENDA TOPIC Call Tower  
(Project Address)

NAME Jeanine Becker  
(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION   
(Optional)

RESIDENT  BUSINESS OWNER \_\_\_\_\_  
OTHER \_\_\_\_\_

SIGNATURE: [Signature]

PHONE 415-307-2134 DATE 6/27/19  
(In case we would like to contact you)

ITEM #: 7 ZAB DATE: 6/27/19

CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD *Didn't speak*

AGENDA TOPIC # 7  
(Project Address)

NAME Louise Palmer  
(Please Print- to be sure we spell your name correctly)

SUPPORT \_\_\_\_\_ OPPOSITION \_\_\_\_\_  
(Optional)

RESIDENT  BUSINESS OWNER \_\_\_\_\_  
OTHER \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

PHONE \_\_\_\_\_ DATE \_\_\_\_\_  
(In case we would like to contact you)

ITEM #: 8 ZAB DATE: 6/27

CITY OF BERKELEY  
ZONING ADJUSTMENTS BOARD  
REQUEST TO ADDRESS THE BOARD

AGENDA TOPIC Grosvener project  
(Project Address)

NAME Tom Frank  
(Please Print- to be sure we spell your name correctly)

SUPPORT  OPPOSITION \_\_\_\_\_  
(Optional)

RESIDENT \_\_\_\_\_ BUSINESS OWNER \_\_\_\_\_  
OTHER Center for Sustainable Neighborhoods

SIGNATURE: [Signature]

PHONE \_\_\_\_\_ DATE \_\_\_\_\_  
(In case we would like to contact you)

**Public Testimony Guidelines:**

This meeting will be conducted in accordance with the Brown Act, Government Code Section 54953. Any member of the public may attend this meeting. The Board Chairperson may limit the number of speakers and the length of time allowed to each speaker. To speak at a public hearing, please submit a speaker card to Planning Staff as early as possible at the meeting.

At the start of the meeting the Board may rearrange the agenda or place additional agenda items on the Consent Calendar, so it is important to submit speaker cards at the start of the meeting to avoid losing the chance to speak to an item.

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BERKELEY ZONING ADJUSTMENTS BOARD MEETING  
REMOTE BROADCAST CAPTIONING  
THURSDAY JUNE 27, 2019

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\* \* \* \* \*

>> Hello, if everyone will take their seats, please. Good evening, and welcome to the June 27th, zoning adjustments board hearing. Our chair and vice chair have excused absences this evening so I'm beginning the meeting. I'll we do the roll call and ex-parte then we'll vote for a temporary chair. Board member Tregub. Are you present?

>> I. Tregub: Present and I have an ex-parte on 1950 Shattuck. I spoke with the applicant about --

>> 1951 Shattuck?

>> I. Tregub: 1951 Shattuck. Thank you. The applicant requested a meeting at the applicant's request. I met with them and we discussed a variety of issues particularly around what they're going to be doing on parking and building electrification. I also had discussions with the mayor, councilmember Kahn and Council Member Harrison regarding that the remaining piece of community benefit funding was going to go. On Euclid, I fielded questions from C.B. Perkins and Stephanie Thomas. I spoke to them about the process of the meeting, how the meeting will be structured. We did not discuss the content of the application. And then I got a call from east bay municipal utilities board director who informed me that the request did not come to the east bay port that it was a staff-level recommendation.

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>> I. Tregub: Okay, we're now going to pick up zero Euclid afternoon Berryman reservoir. It's zero because it's not -- it's not housing. No mail is delivered. Staff will provide a staff report whenever you're ready.

>> Good evening, ZAB, the request before you known as zero Euclid Avenue at the Berryman reservoir. It's a request to establish a new 50-foot high mono pole which is a 4 GLTE wireless. It has six antenna and associated ground equipment. This type of wireless telecommunication facility consists of a free-standing tower which is called a mono pole and referred to as a tree pole which is a faux tree designed to be disguised as a tree commonly used in locations with similar tree cover. Radio units and other related cables and equipment are proposed to be mounted on the mono pole. Other equipment will not be visible from the street. It should be noted that the federal communications commission, the FCC pursuant to regulations established under the telecommunications act of 1996 and the spectrum act of 2012 regulate a development of infrastructure limiting the scope and duration of local government review. The

federal regulations prohibit wireless facilities by state and locale government to the extent that such facilities comply with the FCC regulations. The federal and state law limit or prohibit discretionary review including the demonstration of need or alternative siting requirements. Furthermore, local jurisdictions on these types of applications are limited by permitting time limits as mandated by federal regulations commonly referred to as the shot clock which expires on July 10th. Since the applicant has not agreed to extension of tolling on the clock. The cities are peer review consultant has approved the facts. The City of Berkeley rules were written to focus on compliance with established standards while protecting public safety and promoting community welfare and esthetic quality. In terms of esthetic quality and design. As I noted, the city's discretion over this request is limited to design and esthetic consideration and the zoning designed requirements for wireless facilities. Therefore, only the designed aspects of wireless have become the city's focus. Berkeley's zoning ordinance does list design requirements and state all facilities shall be designed and located to minimize their visibility to the greatest extent feasible while considering technological requirements including placement screening and camouflage colors and materials to minimize visibility. In regards to this proposal before you, the zoning ordinance states per BMC 23 C 030 subsection 3. All monopoles and towers shall be designed to be the minimum height and width to support the installation unless another will facilitate collocation or other objectives. For this type of facility, the ZAB must make a finding that a facility operating alone or in conjunction with other telecommunications facilities would comply with all applicable state and federal standards and that the requirement would either, one, not be readily visible or two, be readily advisable, but it's not feasible to incorporate other measures to make it not readily visible. The original proposal of a monopine design or faux tree would comply with the first I mentioned to not be readily visible. It's designed to look like a pine tree and blends in with the surrounding tree cover and vegetation. However, as is typical staff requested that the applicant require simulation for the alternatives of the monopoles including four other design options in addition to the original monopole or tree pole design. These include an uncamouflaged monopole either painted green or gray and a tower either painted green or gray. Staff found that the design option consisting of a large enclosure screen walls make the facility more noticeable and visible. Multiple comment letters were sent to the city stating faux tree was not a desirable design. In response, staff, including land use as well as design review



staff evaluated the uncamouflaged design of the monopole in painted in either of the two colors. Staff found that since a monopole can be painted tree would mime miscellaneous its visibility as require under number one and two as I described without the installation of a faux tree as submitted that would be a preferable design. Additionally comments were received noting the proximity to the site to the rose garden to the east. It should be noted that the rose garden per the 1995 designation contains the architectural design features are defined as the following, the redwood pergola, the reflecting pool and small bridge. Flag stone walkway. Are drinking fountain, benches and bridges and children's amphitheater tunnel and sign. The location mass will not have an impact on the integrity of these features. Staff recommends that the board approve the request of a new monopole wireless facility with the condition of approval that the wireless facility be designed as an uncamouflaged monopole painted green or consider the original pine design should that be their preference. Thank you.

>> Are there any questions? Carrie.

>> C. Olson: Um -- did you take this to the landmark's commission? Or is this staff -- because you are not a historic preservationist so you don't have a standing. Sorry, I spent too many years on landmark's commission. I want to know when you say it won't impact anything that should go to the landmark's commission and let them say that.

>> This is not on a landmark site and we've received questions.

>> But it's adjacent to and actually it is the responsibility of the city to send things there if there is a question if there would be an impact. Just saying.

>> I. Tregub: Okay. I have a small nitpick that I asked staff about. I'm not sure if you had an opportunity to get back to me. Conditions 24 said attached approved drawing stated march 3, 2,018 is what is cement march fourth 2019?

>> Due to the multiple many applicant materials submitted, that's the date on the applicant's actual site plan in order to keep things clear. We can update that to make it clear for staff and the public. That's a date from the original print of the Verizon wireless plans. There are instances where the applications go through their internal process a year or more in advance of their submittal of application.

>> I. Tregub: Maybe we can have the applicant explain that. Other questions for staff? If not, let's call up applicant. You have up to five minutes to present.

>> Thank you. Good evening, everyone. I'm David Haddock with ridge communications representing Verizon wireless. I appreciate you take the time this evening to consider this

project. Also with me tonight is Armor KRABA if you have questions of the coverage objectives and needs in the neighborhood, he would be able to address those. I have a gentleman, Brian Palmer who can address any questions you have about RF emissions. There was a report that you may have questions about. I want to begin by giving some background on what Verizon is trying to accomplish with the project. Here are statistics, it's now the case that 55% of American homes are wireless only. Meaning that they don't have landline phones. And for younger folks, the millennials that number increases to over two-thirds that don't have a landline phone. Over 80% of 9-1-1 calls are made from cell phones. Another one that surprised me is there was a survey in 2015 that indicated cellular phone service is a major importance to home buyers. Millennials said it was the most -- 83% said it was the most important factor in purchasing a home. With Verizon, we recognize friends and trying to provide coverage where people need it the most. When we look at these neighborhoods in Berkeley, we see limited service in the residential part of the hilly neighborhoods. And because people generally rely on their cell phones, there would be serious consequences for not have been appropriate coverage. I want to comment briefly on Verizon's need for improved coverage. You have received a colorful map. That look like this. Maybe this looks like a bunch of splotches. But just to help understand what that map shows, it shows different parts of the city with a color code, the green means that the coverage is good inside of building in those areas. Yellow means that coverage is good inside of vehicles but not inside of buildings. And red means that coverage is good on the street outside, but not inside vehicles or inside building. Verizon is not taking the position there is no coverage in the neighborhoods, only that the coverage inside of building where people tend to spend most of their time is especially poor. So our objective for this project is to try to provide service that is needed in these neighborhoods in ways that are least offensive. We recognize that people can have different opinions about that. First we look for existing cell sites that we can collocate with. We found none in these hilly areas of Berkeley. According to the city's zoning map there are zero parcels in the area that are zoned in anything other than single-family residential. So we know there are no commercial properties available. And no commercial properties. We look for parcel that are used for other purposes even though they may be zoned residential. We look for churches but there are no churches nearby. This parcel stood out because it's used for utility purposes. Our view is that it's better to build a cell site on utility property than closer to where people live. We've not been able to identify any

other similar parcels in the area that will provide this coverage objectives. Certainly as we move closer to town there are existing cell sites and other opportunities to build, but because they're farther away from the need in these residential areas, we don't view them as being viable. The cell sites don't work that far. We propose the tree pole as staff mentioned because we thought it blended better with the area. But we're open to any other designs. We've submitted five different designs. Color makes no difference to the functioning of the cell site. Even though we showed photo simulations with green and gray, we could paint it any color anyone is willing to tolerate. I'd be happy to answer any questions you may have.

>> I. Tregub: Thank you. Commissioner Kahn.

>> C. Kahn: It sound like if I understand staff correctly, that our purview is fairly limited by both municipal and federal law. But one of the things we can definitely request is a location that has a better screening capability. So, my first question is whether it would be possible to locate this more northerly where it would be tucked in with the trees better. I mean, is there something about this particular location that requires it to be in that particular spot?

>> The location was mainly chosen for that precise purpose to move it as far away from the houses on the adjacent street and to tuck it in towards the trees. There is in that location -- it's sort of a walking path on top of a berm.

>> I. Tregub: I'm sorry. I don't want to do this, I'm going to ask once that we are respectful to whoever is up here speaking whether we agree or disagree with their representations. And I'm going to make sure everyone has that same opportunity to speak, so thank you.

>> Thank you for answering. I appreciate the answer. It doesn't necessarily have to be in this particular location if there is a better one.

>> I think that's right.

>> Okay. Thanks.

>> I. Tregub: Commissioner Habibi.

>> You know, one of the solutions the wires can be installed in everyone's house that gets connected to people's internet. I don't know what it's called, it's called an extender or a device. It looks like a router. Verizon provides people that device that gives the same coverage inside the house and with like hundred whatever feet. There is another question like a comment. That can be a solution that Verizon provides.

>> I've heard of those devices. Verizon doesn't design its network. Counting on people to install those. They try to make the system work well for people that don't have the knowledge or foresight to plan for those installations.

>> I. Tregub: Thank you. There was a question from commissioner Clarke.

>> T. Clarke: I'm looking at page five of 17. And the existing view number one. And view number one is looking at --

>> Is that attachment 2B?

>> Yes, attachment 2B looking at the photos. And so you have view number one and that's the view -- what is the fence or the trellis structure we're looking at? Is that around this reservoir thing? So view number one, I see this trellis. Can you tell me what that is. What am I looking at there?

>> It's an existing feature on the east bay [indiscernible] property.

>> So it's like a trellis.

>> Yes.

>> T. Clarke: So that's the walking path there.

>> There is a walking path --

>> Looking northeast from the trail.

>> There is a walking path on the outside of the fence as well as the inside fence.

>> T. Clarke: So the location is the land that's on that other section, that's part of the park? So there are two -- we're looking at the overview. You've submitted here. You've outlined all the green. Is that the entire -- is this the entire east mud site? What does that represent if the artist who created the simulations for us used that as a model to show where the site -- where the top of the tower would be visible from. So it's his estimation based on location we're proposing. All the spots in are places you'd be able to see the tower from.

>> The east bay mud land is just the lower portion.

>> That's right. Yes.

>> T. Clarke: All right, thank you.

>> I. Tregub: Thank you. Commissioner Selawsky followed by commissioner Olson.

>> J. Selawsky: I'm looking at attachment six in our packet page one of two. It's a list of existing antennas. Structures. In Berkeley. There are some 25 of them. Can you give me an idea of quantifiable -- how much will this improve coverage? And will it only be in that neighborhood? Or will it be substantially beyond that neighborhood? I don't have a clear sense of that at all.

>> We actually have an RF engineer that can give you a detailed explanation. What I can tell you from my knowledge and experience -- what I can tell you from my experience is that these sites have impacts on whole network in the area. There are sites that provide the limited amount of coverage that people receive when they're out of doors in these areas. And those sites are currently overloaded. One of the things we talk about

when we talk about the projects is capacity. Each of these sites has a limited capacity to carry traffic. If we build the site in this location as proposed, it will improve coverage for people there but it will also offload traffic from other adjacent sites and make those sites a little more robust and able to carry the traffic that they're exhausted for now.

>> Thank you.

>> I have my Verizon cell phone. Your map is not accurate. I drive all over Berkeley and go in homes all over Berkeley. I know where it's bad. Most of us with Verizon phones know where it's bad. I've lived through years of having terrible coverage. It's actually pretty good right now. I don't buy it that it has to be done, nevertheless I get it that you will do it. I have a few questions for you. I need to have answered before I can approve or consider anything. I need to know -- because someone I read all the letters today. Thank you to all of you who wrote them. Someone did a terrific job of analyzing the different options and what their heights would be. So I'm wondering if you have that information. If we approved a tree versus the uncamouflaged pole, are they both 50 feet tall? From your drawings in they aren't because the tree has extra foliage on top. I need to know how tall they really are.

>> When we design projects like this, we don't just buy a tower off the shelf, what we do is we go to a tower vendor and tell them we want a tower that is this height and they produce it for us. So what we can do is build whatever tower is approved at the height that it's approved. Of any of these designs.

>> Because part of the information we're not given is whether or not a telephone pole is 35 feet. We're not told whether or not a 35-foot pole would do an adequate job. Do we have to approve a 50-foot pole? Do you know the answer to that?

>> I could give you insight into that, sure. We proposed a 50-foot pole for a couple of reasons. Number one is that it needs to clear the water tank in particular. Which is made of metal and would interfere with the signal. Covering the enabled includes a certain amount of height. We may be able to lower the tower somewhat. We proposed a little bit higher because we know our experience is that generally cities don't like the proliferation of towers. If there was another carrier it might be better for them to collocate rather than build another tower. It might be possible to lower the tower. It's just sort of a balancing act for how we value these.

>> The collocation is really important to me but that's not your issue. But I will ask staff about that. And the neighbors should know that. That there could be more coming. Has anyone looked at what the view impacts to the houses behind? Have you collocated the house and their window -- these are homes that

look at the Golden Gate Bridge. These are homes where they pay a lot more money -- for views.

>> I. Tregub: If you'll -- one second. I wanted to ask as a matter of process if you agree with something, if you could signify to a non-verbal signage, thank you. Please proceed.

>> Have you looked at that?

>> It's looked at in the sense like the view shed map is included in the materials that you received. It has the green splotches around the map. Beyond that, what we tend to do with our photo simulations is create them from public places.

>> Not from private homes.

>> Exactly.

>> Okay you are right on the earthquake fault. Those of us who live down the hill from this, I frankly loved having a reservoir there because I figured when the big one came, the water would all 11 million-gallons could come down and put the fires out. But now you have a tower proposing on a fault. That means the ground could break open. Has there been anything planned structurally for how this would be on a fault?

>> We know it's there. The engineering hasn't been done at this stage in the process. These are drawings that are designed for zoning approval.

>> Then I will ask staff to follow-up on that.

>> There are conditions in conditions of approval require seismic approval.

>> Has anyone looked at whether or not all trees behind there are also evergreen or deciduous? I can see the picture, but it don't tell me whether they're evergreen or deciduous.

>> I can't tell you the species.

>> And could you tell us about the noise, any noise that might be anticipated from the computer installation, the air conditioning and that sort of thing. I understand it's supposed to be underground?

>> No. But there is a noise study that should be in your materials.

>> I understand. I wanted to ask you.

>> Sure, I can tell you all billion it. Each of the equipment cabinets that we install on the ground are designed to be outdoors so they have small air conditioners attached to the site. We know the noise. We know how far the noise will carry.

>> Could they be underground?

>> Not really and have them ventilate well.

>> Okay. Those are my questions. Thank you.

>> You're welcome.

>> I. Tregub: Thank you, I have a couple of questions. Can you speak to -- so the drawings show a march 2018 approval. Is that actually when they were reviewed by Verizon?

>> There are dates on the drawings that show every iteration from the first set and every change after that. Typically, that's the date that the architect finished the drawing and passed it on to us for review not necessarily the day Verizon approved it. It helps us keep versions straight.

>> I. Tregub: I understand and maybe this is a question for staff down the road as to what is the latest version in front of us today. Because there is a condition that says that is what we are being asked to approve that date of that is march 2018. That seems a little dated to me. No pun intended. But my other question was, can you describe the level of approval you went through at east bay mud?

>> I can tell you my experience of it.

>> I. Tregub: Is it staff level review? Does the east bay mud board see these types of approval?

>> I can't tell you that for sure. Verizon has a lease agreement with east bay mud. We passed the design contracts and they got rerouted.

>> I've a been puzzling over the RSRP maps that you referenced. One kind of glaring omission here is that the for site map doesn't low -- foresight map doesn't see the tower. It's difficult to extrapolate what the actual improvement is other than there is a green splotch that surrounds the tower. What I'm curious because the equation here is public benefit versus detrimental impact. And this tower will serve only Verizon customers, correct?

>> That's what our proposal is.

>> So you're proposing to use public land for gaining a private advantage over exerts. But I'm not asking for a comment on that. That's my comment. But what I am asking is what will I see is okay, the major improvement is in building coverage. Is that correct?

>> That's my understanding.

>> Okay. And well I'm reading from the map. I'm looking for confirmation.

>> Yes.

>> And some improvement in vehicle coverage. Corollary and however in buildings, of course, I presume most of the building within the green zone why wi-fi. So any cell phone customer of any provider with get coverage. Through wi-fi, correct?

>> I don't know that for sure.

>> Yes, the answer is yes. And so what I'm driving at is have you done an analysis of how many customers will actually receive in house customers will receive enhanced coverage?

>> I don't have that information, no.

>> Really? Who will going it benefit and how many people?

>> I wasn't part of creating market plan.

>> All right, thanks.

>> I. Tregub: Okay.

>> Does -- how much do trees or surrounding trees affect the tower signal? Do you need to have it in a clear area? Or can trees be near it?

>> It works better if it's in a clear area. Especially like the water in the trees and the leaves can interfere.

>> I've seen a lot of these cell phone towers that look like trees up on the way to the mountains. You'll see them and they usually are a little taller than the other surrounding trees. Is that -- if you had other trees around this pole, would you have to make it taller? Or could you put trees around pole? And what part has to be taller?

>> Where the antennas are located. It work worse with trees nearby. That's sort of a concession in our design to try to --

>> So this would look like just a tree in the middle of a field? What is the other vegetation surrounding that? Because it appears that there is not any trees right where you're putting the tower.

>> In that spot there is not. That's true.

>> Would you want to say anything more about the impact of other trees? It looks like it's going to be a bare tree in the middle of that area and nothing around it that would sovereign or create an effect where it is actually less glaring. Because now you have it right in the middle of an area with nothing else. It's bare. So if you had other actual frees planted around it, what effect would that have and could that ameliorate the view especially for people walking on the trail.

>> Good evening, definitely the foliage in general and trees affect the signal. Verizon as other carries is divided between line the low band and high band. The high band seems to be more susceptible to blocking from trees or foliage or building. 73% of our resources reside within this high bed. Only 27% of the resources resided in the low band which can penetrate through the trees. Yes, the trees will affect the performance of the site. We try to be either above the trees antenna to be above the trees or if the trees are surrounding site, we're pleased to try to point our antennas that they shoot in an opening between trees.

>> So the trees were below the antenna, a real tree, it's not going to block it. So it needs to have clear visible view?

>> Exactly.

>> Okay. Thank you.

>> I. Tregub: Commissioner Kim.

>> D. Kim: I was wondering if the other towers in the city or vicinity are similar height or if this tower is exceptionally



taller in comparison. To the Verizon towers that we have right now.

>> I don't know for sure. I know there are antennas mounted on buildings as well as towers. There is a wide diversity of them. When we build towers not necessarily in Berkeley but anywhere in the area, they tend to be around 60 feet tall. This is a little shorter. But I can't tell you how it compares to the other towers in Berkeley.

>> The norm is around 50 feet?

>> Maybe armor knows.

>> Yes. For a site like this facility, anywhere between 50 feet to 80 feet, this is like what we see in the urban areas. In the City of Berkeley, I don't have off the numbers, but I think the lowest we have is 45 -- 48. In height. And for they go all which to 80 or 90 feet.

>> D. Kim: So I'm looking at attachment 2B, 15 and 17. Would the tree design, is it looks wider or is the width similar because of the extra foliage?

>> The pole itself is probably the same width, but the added foliage makes it look bigger. That was a eucalyptus. There are all kinds of trees. We're open to whatever design works best in this low kissing.

>> D. Kim: I just wanted to ask about the width.

>> I. Tregub: I suggest and I'm sure there will be more questions. But given the late hour that we hear from the public, so thank you so much for your time and we'll ask you to come up later. We have a number of cards and what will I would propose is that you line up and in the order you see fit. I would ask that folks who need to go home earlier for whatever reason that maybe other folks let them speak first so they can do that. Honor system. And then if you say your name, then I will cross-check that with the card you've filled out. And commissioner Olson would like to make a comment before we begin. like it make a comment before we begin.

>> C. Olson: We have zero ability to discuss whether or not there are safety issues. It's not something we're allowed by the city to discuss. Or consider. So we're happy to hear you whatever it is you would like to say to us, but we can't take it into consideration or discuss it. If that's at issue. But tell us your other issues.

>> I. Tregub: And commissioner Clarke.

>> T. Clarke: I would love to hear feedback from the public on what kind of design of tower you want. As we're limited in the -- in our ability to deny the construction of it. What we want to do is create a design that is the most pleasing for this location. So if you could focus your comments on that, I would appreciate it.

>> I. Tregub: Okay.

>> As I live close to the project and I've been hearing about this nonstop, can you please offer like alternative sites you would prefer, that would be helpful.

>> I. Tregub: When you say pretty close -- okay. Thank you. Last thing we're not going to short change you on time. I know two minutes is actually not that much time. That said, given the thundershower and the fact that by 11:25 or so we'll have to go to captioner break. If you agree with what a previous speaker may have said, it is sufficient to say you agree. So please try to keep comments as succinct as possible. Thank you. With that, let's hear from the public.

>> I feel compelled to acknowledge -- I'm Kay. To acknowledge the research of a Stanford raid logical institute researcher. They are as radio frequency, microwave energy from the wireless industry admits electrical -- emits electrical discharges into the atmosphere. They operate with -- microwaves overlap with the waves. They release nitrous oxide gases into the atmosphere. Nitrous oxide enhances greenhouse CO 2. Nitrous oxide from the semi-conductors from the microwaves, it's 300 times more potent greenhouse gas than CO 2. Existing ground base -- I can't read my wrying, microwave emissions are known to already heat up the ionosphere. Nitrous gases from the -- from the electric power grid also destroy the earth protective owe zone layer of the atmosphere. The semi-conductors industry with most if not all is involved with most if not all electronic devices is how most of them operate. Is it is terminal -- it is terminal. I urge you not to put all your eggs in one basket by approval the --

>> I. Tregub: Sorry to cut you off but we're going to keep strict time. I'm sorry.

>> He said something wrong.

>> I. Tregub: You can address those comments to staff in writing.

>> It's all over the internet. Why don't people use this insanity for our on good.

>> I. Tregub: I'm sorry. We have -- I know two minutes is not a lot, but we have to preserve equity in the process. We want to make sure that everyone gets an equitable amount of time. Thank you.

>> My name is mark burger. This tower is in incompatibility with the neighborhood. It will exceed noise ordinance. The Berkeley municipal code states facilities shall be compatible in scale and integrated architecturally with the surround being buildings or natural setting. No readily visible antenna shall be placed in owe location to impair sensitive view corridor which is defined as any significant vista that substantially

enhances the value and enjoyment of real property. The view of any houses where views are impact was not considered. The staff report's conclusion that it doesn't violate UD7, UD24 is unsubstantiated. None of the options respect a built environment in the area particularly where the character is largely defined by an aggregation of historically and architecturally significant building. The proposal including a large diesel generator and cabinets with cooling fans. More noise will be emitted running at full load. Nighttime noise was not specified. The generator may run continuously at night 130-4050 requires the measurement of noise levels be made from any impacted property, not at the source of the noises. No such sound measurements were made. The staff assertion that the noise was satisfied is incorrect. The cooler fans being located in the bottom of a large bowl next to a.

>> I. Tregub: If you could finish.

>> Both features would have the effect of amplifying and focusing the noise in unpredictable ways that would have to be fuel tested to term the impact. The staff report findings are not supported by the fact. Please exercise your authority and deny the use permit.

>> I. Tregub: Thank you.

>> Hello. I live at 1372 Euclid. My neighbor across the street is Berryman reservoir. There are a couple of my neighbors that have the same view. I'm on the where we're the most impacted directly impacted by the reservoir. Seriously, we paid thousands of dollars to underground our utilities. This is going in the wrong way. This is not underground. I take my two dogs to the park. Every day probably 10 times a week, sometimes twice a day. You brought up the question what trees are there. What I saw, there are only oak. The evergreens are on the far eastern boundary of the east bay mud property. That's where the park evergreens are. There will is nothing there but oaks on the park side. I'm saying that it doesn't fit in with the neighborhood utilities or underground. Unless they have an oak tree design that is lower than the other oak trees, it's not going it fit in. How many people have been to coordination point? Half of the ball field is within a hundred yards of this -- not the ball fields. The entire green area within a hundred yards. If you're playing baseball, you're 200 yards away. RF impacts people up to 400 yards away. That would include the slide, the kiddie play area. The most commonly used barbecue area is within a hundred yards as welcome. Things that aren't designed to think about that I'm mostly against it on a design basis. Thank you.

>> I. Tregub: Thank you.

>> Good evening. I'm Kelly Hart. I'm a land use planner and former attorney. We're distributing a letter to you now. This

proposal is for a 50-foot tower. If you approve it tonight, Verizon can change it because of federal law. Under FCC wrong along with 6409-A. Local governments must allow collocation after a tower has been initially approved and collocation can entail adding 10% or 20 feet to the top of the tower. If you approve it, you have to expect at some point it will get 20 feet taller. Your purview is not as limited as your city planner suggestion. There are many reasons you can and should reject the proposal. Number one it doesn't meet three requirements in the code. Two, approving this would violate your general plan. Three, there was a major error in the RF peer review property that understates the radiation zone and number four, it's grossly irresponsible to propose this inside a drinking water location. There are three zoning code provisions not satisfied. Number one detriment to the neighborhood. Two, the applicant hasn't provided it's needed which it must do so according to your zoning code. Three, Verizon must provide analysis of all alternatives. According to the municipal code, you cannot approve this unless you find it's not detrimental. This will result in decline of property values. Instead of having a view of a park, they'll have a industrial cell four. Passersby do not currently see the reservoir or infrastructure. The cell tower whether 50 or 70 feet tall will be visible from outside the reservoir berm. It's not going to be pretty. Every time someone drives to or from the house they'll see a cell tower.

>> I. Tregub: I'm trying to understand point four, the allegations of an error in the peer review RF report. I was hoping you could succinctly explain it to us.

>> It's on -- turn to the picture on the last page of the packet. Can you see three red arrows. Each of those arrows according to the RF peer review each arrow is a hundred feet in length. According to the Verizon's report it is controlled zone. If is it is 35 feet off the ground but the radiation zone goes out a hundred feet if they're within FCC limit. The RF peer review said each arrow is a hundred feet long which would suggest that the zone of radiation stays within the east bay mud property. You see the paved path that goes around, the applicant said that was east bay mud. Is that a place where people walk their dogs. It's seven feet from the tower. They plan to put the tower 7 to 10 feet inside that 111-foot path. I measured it myself there is no way that that red arrow is a hundred feet. I build trails. I saw this and it's a wide path but it's not. The radiation zone goes about 60 to 70 feet on to the grassy field at a height of 35 feet. You do not want to have a lower tower. If you have a lower tower, you will directly radiate people since the radiation goes straight out from the tour. Not only will it be not useful because of all the trees but you're going

to be hurt people in the park even more than if you approved a 50 foot tower.

>> I. Tregub: You're speaking to the location is not ideal.

>> Yes.

>> I. Tregub: Thank you. We have another question for you.

>> Yes, looking at your diagram third page from the back.

The coverage map seems to be wildly divergent from what is represented by Verizon. Can you just give some substantiation to the rube metrics information?

>> The reason why they're wildly different is because the Verizon map is not based on real data. It's based on a computer simulation that did not use real data. The Rube metrics map is based on real data. Rube metrics collects data nationwide. It's actual data. They collect it for all the providers. You can see here we actually included in there. The white area is -- that doesn't mean they have good data. The white means no one has collected the data. Verizon doesn't have the data. According to another map that Verizon has on their website, they have good coverage throughout the area. Verizon has excellent coverage throughout the area.

>> Thank you.

>> So quickly, do you have an alternative site in mind?

>> I don't, I found out about the project last Tuesday.

>> Okay. Okay. Thank you.

>> I. Tregub: Okay. We understand.

>> I understand you just found out.

>> I. Tregub: Okay. Thank you soap for your time.

>> My name is regina. I leave live directly across the street from there site. According to 23 C 17100 B 3. In order to approve a use permit, they have to find that the facility is necessarily to fill a capacity short fall and is the least intrusive means. The applicant used a radio frequency simulation without any real data. Verizon's claims of need have not been verified by the independent third party consultant. Please see attachment one of Kelly's letter. This is a screen shot of the Verizon coverage performance using real data. Rube metrics is an independent mobile analytic firm, their data demonstrates Verizon has no gapping coverage in this area. There are some places where no data has been collected so we don't know of a gap. Where they have data, they have excellent coverage. Rube is consistent with Verizon's own website that shows there is good performance and coverage at the proposed location. The peer review in the application did not require that real data will perform any type of analysis. The peer review did not address the issues of needs or coverage gap at all. They simply regurgitated a bunch of rhetoric on emission standards. That doesn't validate that this tower is necessary. Attachment two

contains a list of installations nearby. The they have prove why they don't have to collocate before they justify a few one.

>> I. Tregub: Thank you so much.

>> I'm Christine. And I'm going to be continuing with Kelly's letter. I do want to say that I moved from New York City about a decade ago. It was literally rose gardens that made me choose Berkeley. I live a few blocks from there. It feels personal. My and my child plays there all the time for hours on end. Another reason that you should reject this proposal is because it is not consistent with the general plan. Policy, LU 7 neighborhood quality of life requires that new development be consistent with zoning standards and compatible with the uses in the area. We explained how Verizon's proposal is inconsistent with zoning standards. Specifically other elements include scale, it will far exceed the height limits that everyone else in this residential neighborhood has complied with. Once it's approved, they can add 20 feet to it without any further review as you heard. It will stand out like a sore thumb. In this clearing created for the reservoir. There is a carefully concealed reservoir tank not visible. Two beautiful historic parks and residences. Even the telephone poles along Euclid have been underground. Historic character. The rose garden across the street reflects Berkeley's arts and crafts style. Contrary to what you heard from staff, this tower will impact the perception, the appreciation of the historic elements in the rose garden. I want to add one point. My point, it's not in the letter. I know we're not allowed to talk about biological effects on humans, but there are numerous studies about biological effects on trees. There is an EMS connection it trees.

>> I. Tregub: You're welcome to submit that into a record to staff. Thank you so much.

>> Can you explain what it was that got submitted. It's a petition signed by over 90 people and a matching petition with 38 signatures. It's on esthetic part.

>> I live on Cragmont about half a mile up from there. Cell coverage is great in my home and car and outside. This is unnecessary. A in addition to general code there are two more reasons to reject the application. One, it's reckless to let east bay mud lease part of the reservoir storage space, they proposed putting the tower in the basin itself which is intended as a drinking water reservoir. They shouldn't compromise water storage or get locked into a contract unable to use the full capacity of the reservoir when needed. And they proposed putting it on a steep slope. 5 feet -- 5 to 7 feet from the access path. In an earthquake or fire, it could fall into the basin or across the path. Blocking personnel when the water is most needed. This

is the sole source of drinking water for those below. Two, there is an error in the peer review RF report which grocery miscalculates the zone for radiation. Once the cell tower is built, people at the park and neighbors maybe exposed to radiation exceeding the FCC limits. On the last page of the letter, received a map from page 10, I think Kelly went over that with you. So the map shows that the arrow that is supposed to be a hundred feet is -- the radiation would extend -- the controlled zone is where the radiation is strongest but that is erroneous. She talked about the path being 25 feet instead of 11 feet so that sector C arrow is actually longer and it means --

>> I. Tregub: Time flies when you're having fun.

>> Property devaluation concerns me because I live nearby. You can't consider health effects other than exceeding the FCC limits which it will do. But the health effects will make the property values lower.

>> I. Tregub: Thank you.

>> Good evening, I'm Marvin snow, I live on north gate Avenue. I've been a Berkeley resident and property owner for over 45 years. This is my first ZAB meeting. I'll cut to the chase here. We won't discuss any of the medical issues or scientific issues that you've told us we should avoid. Ears have committed focused on the applicant Verizon wireless. I would like to point out that east bay municipal district, east bay mud should be the applicant as they propose to lease a portion of their public lands to a commercial enterprise, Verizon wireless presumably in return for land-leased revenue. Verizon wireless is totally unrelated to the mission of the public agency east bay mud! And further, I was sitting here early when I heard the panel here discussing the east bay mud situation and apparently what was said was this was all done at the staff level. Never reaching the board. Andy Katz didn't know a thing about it. I sent him an e-mail about a week ago as I sent you folks and sent another one today where it documents many of the points. One thing is clear about the proposal, it is a 50-foot monopole antenna it will not be an asset to the surrounding community by any stretch of the imagination. Verizon is wear of this as they've proposed various disguises. I need another minute.

>> I. Tregub: If someone would like to ask a question, then we can --

>> I'd like to hear what you have to say.

>> Thank you. Thank you very much. Okay. None of the propose -- I'm saying that Verizon wireless should be aware of this as they proposed various disguises at an attempt of mitigation. None of those are effective given the sensitive location of the site immediately adjacent to the park, rose steps, Berkeley rose garden. East bay mud has used this land for

a reservoir for nearly a century. Now they propose to use it as an antenna farm at the staff level and Berkeley staff, I don't know when they got to know about it, but the residents only found out about it a few weeks ago. Some property owners in the surrounding area have -- okay.

>> I. Tregub: We gave you more time.

>> They have the adverse impact is 20% of the market value. This would total in the millions of dollars of property value losses across multiple property owners. This decrease in value -- I'm close to the end here --

>> I. Tregub: Can you summarize the rest.

>> I'll summarize here. It will have a negative impact on Berkeley's future real estate tax revenues which they so desperately need. The city may ask that east bay mud unfortunate choice be canceled. The United States Supreme Court only last week strengthened significantly property owner rights with regard to government takings of this sort.

>> I. Tregub: I have an idea for you.

>> I have one more sentence. Neighboring property owners should be aware of their ability to take this issue immediately to federal court. I say this simply as a concerned citizen, I will be happy to hear from the city's attorney. Thank you.

>> I. Tregub: My suggestion if you'd like to put this in the record, I know you only have one copy, but you can give it to staff.

>> It's all in the e-mails that I sent you.

>> I. Tregub: Got it. Thank you.

>> My name is Lloyd Morgan, I'm a senior -- with the trust and director of the largest brain tumor registry in the United States. Children absorb double the radiation of an adult. A 5-year-old child will absorb 78 to 85% of the radiation into their brain. A 10-year-old only 65% in their brain. Infants almost totally. There are now 58 studies, scientific peer reviewed studies showing risk of cancer. 12 brain cancer studies. 6 studies of the lining of our brain and spinal cord. Five hearing nerve tumours. That is your ear, the nerve that goes from your ear. We have a salivary gland in our cheek. That's another five studies. We have four cancer studies in men and women -- breast cancer studies. There are two lymphoma studies. These are all peer reviewed. Four thyroid cancer studies and four multiple cancer studies, three of them are military, but one is a school in southern California where 18 cancers were amongst the teachers. Cell phone radiation inhibits DNA repair. The map that you were given is a conflict of interest. It's their map and they created it and it's not reasonable. It needs to be independently done as Kelly told you.

>> I. Tregub: Thank you.



>> I live at 1350 scenic Avenue a block away from the proposed site. I know we're not supposed to talk about harm but I am severely saddened and disheartened that you're proposing to put it of all places in a park. Where there are a hundred thousand people that visit this park every year, myself included and my son who is 20 years old. My wife and him the lawyer Kelly go up there every day and we're going to irradiate him along with the tens of thousands of children? The last place you want to put a cell tower is a school and a park. Do we want our neighborhood to become another Westin elementary school? Rippen California where four children do not come down with cancels that are children do not get. But we can't talk about that, it's irrelevant. We're all lab rats and we have to live with it. When I really want to -- what I really want to talk is the coverage issue, the legal issue. According to zoning code 23 C 17100 BC must prove that the cell tower is necessary. According to their simulated map, they show red. You all have a handout which shows you the map. So then you see the second map which shows you there is improvement in coverage. If you look at Rube metrics they are an independent mobile analytic firm that offer scientific insight with the network under real world conditions so they actually test it. When they actually test it, you can see that the coverage is actually very good. So, they also have -- if you compare the two maps, there is a discrepancy. There is a huge discrepancy. Somebody is wrong. The independent analysis or Verizon simulated analysis. That's what you have to think about. Lastly, Verizon's own interactive map on their website said 1322 Euclid Avenue Berkeley 4 G quality excellent. Excellent, excellent! That means there is no coverage gap. 25 cell locations in the area, 18 existing cell locations within 1.5 miles.

>> I. Tregub: We have that information. We have it right here.

>> Thank you.

>> Hello, I'm Susan, I live on [indiscernible] road. I'd like to speak briefly that -- what Verizon calls this utility property. I don't know if some of you remember, but east bay mud went through an extensive EIR project when they improved the reservoir. It cost \$6 million. They involved the community, they involved government people as well as private people. It was a collaborative effort to build that place. They hired Mueller and Caulfield architect to reach out to the community and finalize a design to enhance the surroundings and being appreciated by the public. The architects responded at length to people's concerns and eventually persuaded the community to accept the design that is there now for everybody to enjoy. I do not understand why the right hand doesn't seem to know what the left hand is doing.

It's just very strange to me. The space is too important to allow a 50-foot tower. I hope there is some way to work around this decision. Because it won't be the last tower in that space. In that utility property. Thank you very much for the opportunity to express my views.

>> I. Tregub: Thank you.

>> I'm Stephanie Thomas and I agree with most everything people have said and I won't repeat that much. One thing in addition to other things is on chart of the city of Berkeley hierarchy of everything, the people are on the top and somehow the decisions are not reflecting that. I don't understand the whole process. Esthetics have been talked about. Visual blight and these are treasures these areas. Children play there. The noise issue has been mentioned. I will say too that just as there is light pollution that harms insects and animals, it's not only the people, the noise, but all the creatures around that area. Maybe we can't mention that. But I think of them all the time. Reduction of property values 20% has been mentioned. What about liabilities to cities? There is no insurance coverage for these facilities. Health effect of workers or unforeseen damages. In the packets I gave here, most harmful effects on the environment and wildlife many, many studies, effects on trees and animals and birds, pollinators. A new study from UC effects on the insect. And fire safety. Little bit of that earthquake thing has been covered. But there is a woman from Fairfax that wrote about Dr. Martin call who discovered plants are more flammable when exposed to RF radiation.

>> I. Tregub: That's your time. I'm sorry. There that and many other issues. Energy costs. Toxic waste accumulation.

>> I. Tregub: Thank you. So just to let folks know, we have four minutes until we have to go to captioner break. We'll make sure to get to all the comments whether it's before or after. Go ahead.

>> I'm Alan Myers 1322 Euclid Avenue. Even if all the -- can you hear me?

>> I. Tregub: Yes.

>> Even if all the health -- native health effect studies are wrong, the perception is that this they're right. That perception would effect our property values. So, even if I'm not going to die in 10 years from cancer, I'm going to lose a lot of money. We had to go through the process to build that house. We had to go through 10 times the amount of work that Verizon and east bay mud have to go through for this project. It's a trap. You guys seem to be working hard at this process. But this is a screwed up process. And as far as health benefits, my wife also would love -- her career is preschool and day care. She'd love to have an in-home day care. That's going to be affected because

of the perception of the negative health effects. Then there is the incorrectness in the plan. The -- like as has been mentioned with the coverage, the tree heights that are indicated north of the tower or the pole are wrong. They're off by 30 feet. They're only 25 to 30 feet high and the plans say they're 50 feet high. The photo simulations are completely wrong. They make it seem like the pole will be at the far northeast corner of the reservoir and it's not. It's completely wrong.

>> I. Tregub: Thank you. This will be the last speaker before the break.

>> I'm Christian reasoner, I'm a retired person and I live directly above the distance of the city block uphill. From the project. I'm not going to try to reiterate things that have been said. I stand strongly. I think that the speakers went light on the applicant. There is plenty for all of you. , I believe, to rest upon easily to reject this project. But I want to tell you, it's a wonderful place. It's a unique place. It's something that you got to think about. You have to think about the character of it. It can't be reproduced. I don't know about other sites. I don't think there is any other site that is needed. We don't have to make the matter worse. But let's consider this park is unique among other parks. S it happens to be that way. I feel like a lucky person to be nearby. Preserve it for others. But you got something here that is precious. I believe there is really the obligation and fiduciary duties you've a felt and aware of. It's not in keeping with its surroundings. Those surrounds are hard-fought for over the years. We like the character. It offers -- it can't be replaced. This will hurt and hurt it bad. Thank you very much.

>> I. Tregub: Thank you. We're going to take a 10-minute break. We'll return promptly after.

>> I want krsh my 12-year-old son is going to Berkeley high school. We're excited to be there. This tower wants to come in to impede helicopters and impede firefighters. It's going to be there. They're blaming trees. This is an obstacle. Earthquakes, my disclosure package earthquake fall, the whole hill is moving. This tower will be a problem. It's going to fall, it's going it cause a fire. I'm alarmed by this. It's a safety issue. My property value has gone down. I would not have bought this house if that tower were there, small, medium or large. That's all I have to say.

>> I. Tregub: Thank you.

>> My name is Donna hawk, you I live above the park. I did write a letter of opposition. I'd like to summarize a few points from my neighbors letter. Who was also in a letter of opposition. Michael Burke. He's an attorney. A point which has been made already, it's inconsistent with the character of this

neighborhood. He quotes a legal case saying esthetics may constitute a valid case if substantial impact is before the board. There is no document showing by Verizon or anybody else showing that the cell tower is necessary. The application says it is residential and provides few traditional sites for cell towers. Putting up a fake, ugly 50-foot tall pine tower in a location directly in front of residents unobstructed view of the bay would diminish the value of the property and constitute an unjust taking and inverse condemnation of their property and to approve it would violate the duty imposed by conditional use permits not to obstruct the view. Talks about the noise ordinance, it does have a diesel generator which is polluting diesel soot is the number one air-borne carcinogen in California. There is no necessity for the generator. This fuel-filled generator could heighten the risk of a fire if the park and the spreading could be devastating to the entire neighborhood and subject the city of Berkeley to huge liabilities for negligently approving the project in the face of known risks. Thank you.

>> I. Tregub: Thank you.

>> Good evening, I'm Jonathan Cooner. I live on Bayview place three quarters a block down. I've lived there since I was three years old on and off. The character of the character has stayed remarkably the same. People come from all over to use the park. People knew it was something to us in Berkeley. I think it's important to see the thing in three dimensions. You look at the maps and I'm sure you studied them carefully. I know you're careful about this. If you haven't seen the park and Berryman reservoir and the new ball field, when you approach the park on uphill side is a basin which means that the trees look like a big screen. But when you get inside them, you still see the hills beyond. When you go back and where reservoir is open space with trees behind it and then the residences. The pictures shown before and after are deceptive because you don't get the effect confident distance, the path they were talking about. The path and another few feet before first line of trees make the pole that's going to be there stand out. It's not going to be disguised. I have to disagree with the staff sort saying it would be camouflaged. I've looked at it. There is a test pole there. If you go up, you can see from some places, yes, the trees are higher. From other places, you see the wide sky and it's a complete blockage. It's definitely going to be in the way and an eyesore. I feel it's going to change the character of the neighborhood.

>> I. Tregub: Thank you.

>> I'm Oren Lyman. I live across the street from the reservoir on 1348 Euclid. So anyway, there is a great photograph

showing the height -- the balloons were tied to a 50-foot to show the silhouette of the tower. And it's significant. Nothing in the plan, the application shows the significance. It doesn't fit in the neighborhood. And I'll leave you guys an extra minute.

>> I. Tregub: We have a question.

>> Did you submit that photo tonight?

>> A few minutes ago because one of my neighbor took it.

>> Our neighbor, Jeff, sent an e-mail earlier today.

>> It's a good photo. I didn't see it until tonight.

>> I. Tregub: It would have been in our supplemental packet too we got it today. I don't have a speaker card for you. You can just see staff after. Thank you so much.

>> So Jeff sent that e-mail earlier today. He had surgery the day that the comments were due. And so he wasn't able to come tonight. That's why he sent the e-mail. I'm Gaye Pelletier. I live at 1304 Bayview place. I'm 30 feet away from the tower. I felt like we didn't get proper notice. My muss was out of town -- my husband was out of town and when we got the postcard it was a week and a half ago that we noticed it. We are blindsided by this thing. In the city's wireless ordinance section 23 C.17.070 states that freestanding towers are the least preferable choice for cell phone antennas. Also, from miss Olson, the rose walk homes I believe are landmarked. I'm not in one of those homes, but I know that they're probably staring straight at this beautiful tree. There will be significant impacts on those homes. I know neighbors who work for months to get designs for the rose garden sign. The Berkeley landmark and I know people who work for months on the Berryman reservoir and here we are two weeks into a process and we're considering this design. The green swatches on the map that they showed you are inside of the bowl. Nobody goes inside of the bowl and looks up at the tower except for the guys that work at east bay mud. From my house, I'll be able to see it so I don't know why the map matters. The tower -- this is my last comment. The tower will not affect voice communications, only data cording to Verizon's application unless it wasn't accurate. Thank you.

>> I. Tregub: Thank you.

>> Hi, I'm Antoinette stien I live on Arlington in Berkeley. I believe that this is not needed. It is -- I spend a lot of time in the park. I both walk my dog and I also hike. This is going to be glaring. This is going to be stark. This is not going to be fitting with the park setting. And I believe that it's not in compliance with CEQA. The CEQA for the approved reservoir. This is a major change to an approved CEQA project. CEQA says? Section 15162 that when there is a change made though a project that's been CEQA approved, that there is a requirement

that if there is substantial changes, which there are, that the impacts of the project need to be attended to. They need to be studied. They need to be mitigated. Alternatives to them need to be found. And none of that has been done. This has been proposed as a commercial tower in a park setting. And this was an approved project before. Went through quite a lot of deliberations. And this has all of a sudden with no compliance with CEQA even though you are each one of you are the discretionary body, the lead agency at this stage under CEQA. And you need to take your obligation seriously. Thank you very much.

>> I. Tregub: Thank you. If there is anybody else that wishes to speak, otherwise this will be the last speaker. Please line up.

>> Thank you my name is Robert Roth, I live on Codornices road looking down at the tower site. As miss Olson commented, it's going to be directly in the way of people who paid a lot of money for that view. Maybe the most important factor you should be thinking about is that this tower is proposed for the very edge of the reservoir, the slope. And it's basically about six feet away from the path for entering Codornices Park. What is going to happen now going from a lovely tranquil setting, you're going to have this industrial tower looming over you. And I think that is very much disturbing the esthetic of the neighborhood. The complex of the park and rose garden, it's a nature-oriented setting. East bay mud mailed a big deal about all the landscaping it was doing, yet, this is going to be obstruct all landscaping. Also, since it's going to be so close to the path at the Codornices park and noise is admitted by within 23 feet, it's going to be audible on path and disturbing the experience of people in the park. The other thing you did ask for alternative sites so I have a couple suggestions. One is on -- I was talking to the gentleman here from Verizon and he told me, I suggested what about on top of the water reservoir which is high up so you wouldn't need a very high tower and with the masking, it could be not very --

>> I. Tregub: Could you briefly state what are the two alternatives.

>> So one that I suggested and the gentleman said that this was something they talked to east bay mud about was doing it on top of the reservoir and another idea would be that they own the whole hillside between the reservoir and Codornices road. Where they're proposing to put it there are no trees. The staff is mistaken. There are a few saplings but this will four way above whether it's a fake tree or an actual tower, it's going to be ugly.

>> I. Tregub: This is the last comment. I would like to bring the applicant back up and if you'd like to take up to three minutes to address anything that has been said. If I wish-- if you wish.

>> I'll take a few moment to respond to some of the research and comments by public. I'm not questioning the quality of Rube metrics data, we need to under the data that we're looking at. Twice a year they do a drive. The coverage they show is just a snapshot of the coverage at the moment they were driving the area. It doesn't specify the busy hours of the network or is it in the morning or evening? It's just the snapshot at the exact time driver driving through. This is only done twice a year. The second thing, the setup of the rude metrics drive is through a van and they are connected to antennas on top of the van. The signal they are measure is outdoor not indoor. We only mesh indoor no -- measure indoors. The other thing that the rude data present, it only shows like hexagon of good coverage or poor and doesn't specify the low band or what band. Is it the low band where we only have 27% or the high band? Of course it's the low band. Whatever coverage they show, it's the low band. And the same website of rude metrics, it's just the one layer. Second layer they show the feet. And areas that they are showing green hexagons, they show white or unstressed data. They means they drove that area, however they couldn't do speed tests and the speed test is done through the download a file from a server and done load another file. The speed test they are showing is [indiscernible] even though in the other level they show the green hexagon with good coverage. Second point, the maps are done through industrial standard tools. Tales a third party tool. This tool uses propagation models and like we have a third party. It's actual drive test data. It's collected in every city. And due to these propagation models, they're based on modern [indiscernible] In addition to that, we have realtime tools that collects the [indiscernible] [beep]

>> I. Tregub: I actually have a question for you but on a different subject. I thought it was interesting there were comments made alleging that the application was only for data. Not voice. I don't know if that is you or --

>> Sure. Actually, it's the same. With the 4-G technology, voice and data are all data. It's still data.

>> I. Tregub: Someone made a comment about the use of diesel generators at the site. I actually have never heard of diesel generators being used for stand alone monopoles. For this application. Can you speak to -- are you using diesel generators? Is it connected to the structure? If so, what were the uses?

>> This is just the construction.

>> It's a stand-by generator intended to operate only when there is a significant power outage. When the sites are designed they have a battery back up measured in terms of the hours. We know that sometimes power outages can go beyond that so the diesel generator is designed to operate only in those periods. It runs periodically at 15 minutes at a time to make sure it's operational. Other than that, it does not operate unless there is a significant power outage.

>> I. Tregub: So, this is bringing in my experience from the outside with diesel generators. But recently, it has been noted they have to operate more because -- there was a change in the state law because of the fires where PG&E shut off power whenever there is a risk beyond a certain threshold of fire. And so would that mean this diesel generator would run any time that there is even a short term or prolonged outage? If so, my real question for staff is, has the use of diesel generators been studied either through CEQA or just if this is an in-fill exemption? Either mitigation -- are there mitigations that are going to be standard conditions? Because I don't think I saw those included in the proposal.

>> Standard conditions can be included to address any concerns. Regarding the diesel backup diesel generators.

>> I think there is a permit required by a Bay Area quality management for a diesel generator. There is a process you have to go through for a diesel generator.

>> We can specify that or daylight that in the conditions as per the building permit review and approval.

>> I. Tregub: Okay.

>> Verizon always goes through the permitting process.

>> I. Tregub: And this would be a building permit even though it's not a structure in the traditional sense of the building?

>> They have to provide the appropriate approval for the build plan, correct. They provide that approval as part of their building plan submittal.

>> I. Tregub: Other questions? Charles.

>> So one of the findings that we need to make is that -- yeah. Is that there is, you know, clearly indicated evidence of a need that's been challenged by the neighbors here. One of the items provided is from Verizon's website. Showing that the property directly across the street has excellent coverage. Which is contradictory to the data that you provided. Do you have an explanation for that?

>> The marketing maps from Verizon website have a disclaimer. They don't guarantee the quality of service and they don't include any capacity issues. Like this area is served by



two sites. You would be surprised how far they are. One is 1542 Shattuck. The other is downtown Berkeley on Edison street. They're exceeding their capacity limitations. Even though they provide coverage, marketing maps don't include any capacity issues. And that is included in the disclaimer we have there. The site are exceeding the capacity because they're serve where they're not supposed to serve. They can't even accommodate the subscribers immediately around the sites. So in busy hour when there is like increased traffic, these sites cannot even serve this area.

>> So what you're saying it's not excellent service.

>> Exactly. These maps don't include any capacity issues.

>> I. Tregub: After this we're going to close the public hearing. If there are know other questions, thank you, we're going to close the public hearing. Commissioner Sheahan will be next followed by commissioner Clarke.

>> P. Sheahan: I'm going to speak to the findings. Which are part of the staff report. And we're obligated to comply with the number of laws and one of which is that we make findings. That support either a denial or an approval of a project. And I believe that findings cannot be made. Number one that this project will not affect any historic resource. Rose sidewalk directly adjacent, Berkeley rose garden is across the street. Greenwood common, the John Galen Howard house is close by. I could go on and on and on. This is an incredibly historically rich area of Berkeley even by Berkeley standards. This is really the epicenter of historic value in Berkeley. The non-detriment finding cannot be made in respect to residences. The project is not consistent with general requirements. And does not meet the 2002 general plan. One of the policies is LU-7 neighborhood quality of life and I believe this project compromises that. Policy UD-16 context. It does not respect the built environment particularly historic resources, features and parks. The proposed does not the least visible means to achieve the intent. Either there are other locations that have not been studied that are not adjacent to parks and historic structures. The proposed is extremely intrusive. And other locations must be found.

>> I. Tregub: Thank you. Commissioner Clarke.

>> T. Clarke: I think the location on this site seems like one of the worst locations. If I was going to choose a location on this particular property, that would be the least desirable in my opinion. I do think it's too close to the park. I can't see and I think there is not enough information for us to evaluate it. The two views -- we're only given two views of the entire -- proposal. I don't understand why this didn't go to design review. This is considered a commercial property. And this did not go to design review committee. We should have had a

lot more information in terms of the options on site and when you look at the sections of the site on -- there is a big pit, the way goes down. It seems like this is a strange place to put a tower on the edge of a hill like -- strange place to put a tower on an edge of a hill like this. People call it the bowl. It's right on the edge of a pathway next to the park. Why put it -- here you have this property. And you're trying to get it away from the surrounding properties. Don't put it on the edge. Even if we can approve it on this location because of the coverage issues, it doesn't appear to be the correct location on the east bay mud property. I think we would want to study more locations. I would want section cut, the description of the trellis and how that is related. I think that's like a fencing thing that has been put up, I'm not sure what the purpose of that is on east bay mud because I don't know the history of the site that well. Anyway, I would have thought it would have been on the other side of the property. Because putting it next to a park doesn't seem right. The other side is not next to the park. At the least, we should have studied that and I would want more views closer up, not just a view down the hill. These views that we're given are kind of like we're giving this view one and two that are taken from kind of down the hill. So it's not a very accurate view from one in the park. There is no view of what we see from park from where people are using the park. It's a very well-used park and there are no views from the path. We don't have hardly enough information. From what I know, it looks like the wrong location. I wouldn't be able to approve or push this forward tonight. I recommend it go to design review committee.

>> I. Tregub: Is that a motion?

>> Yes that it go to design review committee and they bring more information about it and more options.

>> I. Tregub: Just to get clarification on your motion, would it be to -- so there is a shop clock. Let me ask the attorney, we have to make a similar to the last project, we have to make an up or down decision on this tonight?

>> It is a similar situation. I believe --

>> Why do we have to make a decision tonight?

>> There is a state law that requires the city to act within 150 days of receiving the application. That 150 days expires on July 10th. I believe.

>> Ride like to move for denial.

>> Motion to reject.

>> I'll second.

>> I have comments I'd like to make before.

>> I. Tregub: There have been several motions to deny and I heard commissioner Kahn's first. It is the district that his

councilmember represents. If that's okay to keep him as the motion.

>> He's not to be involved.

>> That is irrelevant. I'm interested in hearing basis for my fellow commissioners for denial because there were several motions simultaneously to deny. But for me, the reason that I'm moving for denial specifically I think Teresa makes a good point or design review. But I have not been satisfied that the need for this was adequately illustrated. We have the one document that was prepared by Verizon. We're told that document was submitted to peer review. I'd like to see the peer review because it seems inconsistent with their own website on how the site is being served. It cast serious doubt on the quality of information we're receiving and we have to demonstrate, you have to demonstrate that our satisfaction is necessary, and I'm not satisfied. That's the killer here. I seldom vote against a project as my colleagues will tell you. Seldom initiate a move to deny. But I think everything that Teresa said needs to be demonstrated just the esthetic considerations. Having a section from the park through the landscape to show how this tower will be viewed from the park would have been an excellent document to provide us. It would have been would have helped your case, but it's something we need to see. In the views from the park as Teresa has said, views from the hills. We have all the neighbors here concerned about the views. Maybe you can satisfy them the views are not going to be a problem but I'm not convinced of it tonight. You have a case it make. I don't feel it's adequately made. That's my thinking. And I'm interesting in accept anything amendments or modifications those this as grounds for denial.

>> So we over here did not hear who made the motion and seconded the motion.

>> I. Tregub: Charles made the motion, I also wanted to ask who made the second. Okay. So commissioner Sheahan.

>> I was looking down to check a box.

>> I. Tregub: But that does mean any amendments. We'll ask the mover and seconder to see if they are friendly to them. Commissioner Olson.

>> C. Olson: I want to start off by saying thank you for coming out tonight. My grandparents live right there and I grew up in this park. And I remember when there was a building up on the hillside that burned down and fire is a real concern. Plus, the fire area was just south of here. I want to start off by saying I find a categorical exemption absolutely in appropriate. For this project. And I want to delineate the reasons why what should have been studied under CEQA and yes I was part of the Berryman reservoir project and forcing that to go the way it did because it's not the way it started out. And it did have a CEQA

process and that process as pointed out by one of the speakers does right say if there are major changes there needs to be further CEQA work. These are the things from listening to all of you and from what I know that the CEQA needs to look for. We don't have any idea what is being presented here. The height might be this or that or might look like this or might look like that. The effects could be felt. And all of that. I think we need storey poles and that is in our ordinance that storey poles are required when a house is proposed in the hills or any other project. It's the way that is reads. So we need storey poles. And then we'll know what it would look like. And we need to know specifically then what the actual height of the different options proposed to us would be. We need to know what the view impacts are from homes. Not to homes but from homes, from their windows in Berkeley we care about our views. I get teased about that all the time. I don't have a view. But I appreciate the views. The noise. Diesel generator. We need to understand it. I've been doing this for 20 years on land use commissions. I can tell you I have approved most of the cell towers in Berkeley. And -- or not approved some that never got built or at least as far as I know never got built. The noise from the computer and the air conditioner matter because they do make noise and so we ask that these be put inside sound-tight rooms. So this is not -- does not seem to be proposing anything that is sound tight. We need to know. I'm concerned about wildlife and specifically birds. Especially if you had something that looked look a tree. It's like we all know who have trees around us that the birds are nesting in the trees. What if they think it's a tree? The fire area. The earthquake fault. The drinking water basin. That was really interesting catch. Thank you to whoever mentioned that. And there is a wonderful picture we have over Berkeley architectural heritage of the hills in the 1870. They were empty, there were no trees. But this is a historic area. It's not just the houses that are landmarked. In fact there are not that many landmarks in Berkeley because we count you on to take care of your beautiful homes. Amazing homes. I don't want to put down Bayview. The singer house? Oh, my gosh. Baja had two house tours. All the properties were evaluated and researched. It's a historic area and maybe we should work on making it a landmark district to protect it. That's all I have to say.

>> I. Tregub: Thank you. Commissioner Selawsky.

>> J. Selawsky: Thank you. Thank you. And I also want to thank all of you for being here tonight and your comments. On Friday morning. And thank you to my colleagues for your -- Patrick, Charles, Carrie, Teresa. I think a lot has already been said but I think Patrick started it off saying if we're going to deny, we need to cite some findings. And I think Carrie, you

touched on some of this. It's right in the middle of several historic resources. Rose walk, rose garden, John Galen Howard house. There are a bunch there. We can't say that the project will not affect any historical resource. I cannot make that finding. So right there. I also -- I'm going to cite the area character in our general plan. This project is not truly compatible with and does not reinforce the design characteristics of the area. Area character. Certainly is a concern, and I heard that from a lot of the folk out there. For now, I don't think we have to cite many as long as we're citing two or three, we are a fine. I'll leave it that for now. Thank you all for your comments.

>> I. Tregub: Thank you. And commissioner Owens.

>> The contradictory data makes me iffy. A lot of neighbors complained to me about this. I don't think it's a good location period. I would recommend that the rejection item or motion also acts that the applicant look for alternative sites.

>> Accepted.

>> My interest is protecting the park. I'm no so interested in multimillion dollar homes, but the park, yes. I'm interested in making sure that is protected. If you can find another place, that would be ideal. I say that as a Berryman resident myself.

>> I. Tregub: Other comments. Commissioner Kim.

>> D. Kim: I want to quickly acknowledge that the fact that not only does ZAB feel ready to reject this, but I feel like the applicant could have told the public earlier so that they could have known. I think they would have appreciated that. When you find alternative sites maybe to ensure that the people know what is going on in their vicinity.

>> I. Tregub: Thank you. Commissioner Clarke.

>> T. Clarke: I don't know if this relates to our rejection, but I feel like the application is incomplete. That's one of my main problems because we don't have the design information even if this was a good location, I can't -- I don't have enough information presented in the packet in terms of the views from other locations. It's pretty scarce. And we've seen a lot more information on any of the other cell phone towers that we had a really good presentation. They modeled what it looks like from different angles and here we have two views with green or pine tree look or gray or, you know, and only two views. I think in general, I find it incomplete to be able to make a decision if we did feel it was okay in this location which most of us I don't think do anyway.

>> I think that is implied by all of our comments in this specific motion to deny. I think that specifically stating that the incompleteness of the package relative to this kind of materials we need though make an evaluation based on the

esthetics because of lack of other views, sectional views. Primarily those two things. It's a factor.

>> I. Tregub: Thank you. Any other additions? I will ask staff to read back staff too read backgrounds for denial that are recommended.

>> So, my notes include that findings cannot be made regarding historic district. Project is not consistent with the requirement in the general plan. Does in the have context. It is not the least visible means other sites are possible. It is extremely intrusive. I have additional notes on the location. Which is the least desirable, too close to the park and not enough information regarding the views or other options on the site. Lack of sections. Concerns of it being close to the pit and park pathway next to the park. And not satisfied with the quality of info. We have concerns about the CEQA as it relates to the Berryman reservoir and we have the captioner's record that we can use CEQA as it relates to what?

>> The Berryman reservoir.

>> I. Tregub: Would I like to add if the mover and second railroad friendly to explore whether the threshold of significance for the use of the diesel generator meets threshold CEQA requirements.

>> May I -- I believe board member Hahn mentioned that the lack of sufficient information to establish a finding for the need for this structure to provide coverage.

>> S. Hahn: I wanted to be specific about 23 B.340 had 0 for denial and conditions. According to this row vision, the zoning adjustments board cannot approve this use permit unless you find it will not be detrimental or injurious to property or improvement of adjacent properties or surrounding neighborhood or general city. I would find it impossible to make that finding. Then there is another one, 23 C.17.100 findings required for approval. In order to approve any use permit or administrative use permit under this chapter ZAB zoning officer must make the following findings that the facility is necessary, I think this is what you're talking about, to prevent or fill a significant gap in coverage or capacity short fall in the applicant service area and is the least intrusive means of doing so.

>> Is the mover and seconder friendly to the three things added?


>> Absolutely.

>> Yes.

>> I. Tregub: Okay. Thank you. So I think if staff feels comfortable that they have enough information from us, I suggest we move to a vote.

>> Board member Olson.

>> Yes.  
>> Board member Clarke.  
>> Yes.  
>> Board member Kim.  
>> Yes.  
>> Board member Sheahan.  
>> Yes.  
>> Board member Tregub.  
>> Yes.  
>> Board member Kahn.  
>> Yes.  
>> Board member Selawsky.  
>> Yes.  
>> Board member Owens.  
>> Yes.  
>> Board member Habibi.  
>> Yes.  
>> I. Tregub: That is nine yeses. Zero Euclid Avenue is denied. It is appealable to the city council. [applause]

	<h1>I. ZONING PROJECT APPLICATION FORM</h1>	
	<i>(This box for staff use only.)</i>	
ZP201 _____ <input type="checkbox"/> Administrative Use Permit <input type="checkbox"/> Use Permit / Variance <input type="checkbox"/> Modification of any of the Above	PLN201 _____ <input type="checkbox"/> Pre-Application  Intake Planner: _____	DATE STAMP HERE

• **Project Address:** EBMUD Berryman Reservoir, Berkeley, CA 94708 Unit/Suite #: \_\_\_\_\_

**Project Description:** Install a a new Verizon wireless facility on a new 50' Monopine including: (6) antennas, (6) remote radio units, ground equipment including a 30 KW diesel generator on a 132 gallon tank, and other equipment, cables and conduits as shown on the plans submitted with this application.

• **Property Owner Name:** East Bay Municipal Utility District

**Owner's Mailing Address:** Attn: Rob Korn, P.O. Box 24055, Oakland, CA 94623

**Phone #:** 510-287-1246  Home  Mobile  Business **E-mail:** robert.korn@ebmud.com

• **Applicant Name (or write "same"):** Verizon Wireless by Ridge Communications, Inc.

**Applicant's Mailing Address:** Attn: David Haddock, 12919 Alcosta Blvd. St. 1, San Ramon, CA 94583

**Phone #:** 916-420-5802  Home  Mobile  Business **E-mail:** david.haddock@ridgecommunicate.com

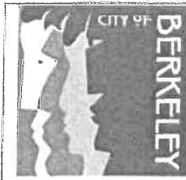
<b>For projects involving <u>only</u> the following four items and <u>none</u> of the items on pages 2-3 of this form, please refer to the handout indicated in the right-hand column <u>instead</u> of filling out this form.</b>	
1. Converting existing Rental or Tenant In Common (TIC) Units to Condominiums? <u>N/A</u>	Refer to the "Condominium Conversion Procedures: Guide for Applicants"
2. Demolition of, or exterior alterations to, a designated City of Berkeley Landmark, Structure of Merit, or structure in a City Historic District (or interior alterations to such buildings if publicly owned)? <u>N/A</u>	Refer to the "Landmark Preservation Commission: Structural Alteration Permit and Design Review Submittal Requirements"
3. Application to designate a City Landmark, Structure of Merit or Historic District? <u>N/A</u>	Refer to the "Landmark, Structure of Merit or Historic District Designation Form"
4. Exterior changes (including signs) to (1) any structure (new or existing) in a non-residential zoning district OR (2) a commercial or mixed-use building in the R-4 District? <u>N/A</u>	Refer to the Design Review Submittal Packet

Continued on Page 2

## PLANNING & DEVELOPMENT

Land Use Planning Division, 1947 Center Street, 2<sup>nd</sup> Floor, Berkeley, CA 94704  
 Tel: 510.981.7410 TDD: 510.981.6903  
 Fax: 510.981.7420 Email: [Planning@CityofBerkeley.info](mailto:Planning@CityofBerkeley.info)





# I. ZONING PROJECT APPLICATION FORM

## Submittal Requirements Checklist – Instructions

1. Complete the checklist below and **sign the bottom of page 3.** (*Owner must also sign, or provide a letter authorizing the applicant to sign on the owner's behalf.*)
2. For each question for which you check "yes", review the Zoning Project Submittal Requirements to learn more and to provide the item indicated in the right-hand column.
3. **Submit a pdf copy of the entire application, along with the paper application to the Planner at the Permit Service Center, Zoning Counter.**

Does the project include:	No	Yes	Handout / Application Requirement
1. Any work requiring an Administrative Use Permit, Use Permit, Variance, or Modification of any these permits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Required For All Projects
2. Any new structure(s), addition(s), demolition(s), exterior alteration(s), or change(s) of use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Required For All Projects Involving Construction
3. A new main building, OR a new accessory building/structure or main building addition within 2 feet of a required setback?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Boundary/Topographic Survey
4. More than 50 cubic yards of grading?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Grading Plan
5. A request to waive or reduce required parking?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Parking Survey
6. (1) a building over three stories in height, (2) a Density Bonus, (3) an FAR over 2.0, (4) over 10,000 sq. ft. of gross floor area; OR any wireless installation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Photo Simulations
7. A new main building or an addition exceeding 14 feet in average height in the 'H' Overlay District?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Section Drawings Story Poles
8. A new main building or an addition exceeding 14 feet in average height on a site adjacent to a residential use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shadow Study
9. A new main building (except accessory buildings/structures)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Street Strip Elevation
10. Creation of (1) 5 or more dwelling or live/work units, or (2) additional condominium units resulting in 5 or more condominium units on the site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Housing Affordability Statement Applicant Anti-Discriminatory Housing Policies
11. Under Government Code Section 65915: a. A request for a Density Bonus? b. A request for any concessions or incentives in addition to a Density Bonus?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Housing Affordability Statement Additional Incentives or Concessions Documents
12. Creation of (1) 10 or more dwelling units, (2) 5,000 sq. ft. of floor area, OR (3) 25 or more peak hour vehicle trips (based on ITE trip generation rates)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Traffic Impact Analysis
13. Creation or replacement of 2,500 square feet or more of impervious surface area? (Includes additions and new buildings but not routine maintenance and re-surfacing).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Stormwater Requirements Checklist
14. Any new dwelling unit(s), or addition or renovation of 10,000 sq. ft. or more of non-residential space?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Green Building Checklist Energy Efficiency Analysis (nonresidential mixed-use only)
15. 2,500 sq. ft. or more of new landscape area or 2,500 sq. ft. or more of rehabilitated landscape?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Berkeley Water Efficient and Bay Friendly Landscape Requirements
16. A new building on a site with a history of soil and/or groundwater contamination or within Environmental Management Areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Phase I or II Assessment
17. A new building or addition in a liquefaction, landslide, or fault zone shown on the "Environmental Constraints Map"	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Seismic Hazard Investigation
18. Federal funding, either directly or through the City of Berkeley Housing Trust Fund?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Area of Potential Effects (APE) Statement
19. A new business, or a new commercial space with tenant/operator already selected? (Does not include home occupations.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Zoning Use Questionnaire



# I. ZONING PROJECT APPLICATION FORM

Page 3 of 4

You must disclose whether or not any of the following are true of the project:	No	Yes
<ul style="list-style-type: none"> <li>Over 7,500 square feet of office, retail, restaurant, hotel, lodging, manufacturing, light industrial, research and development, warehouse or storage? If so, Affordable Child Care and Affordable Housing Fees apply. Refer to Council Resolutions #66,618-N.S. &amp; #66,617-N.S.</li> </ul>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Any new commercial or industrial building, more than five or more Dwelling Units; or an addition or more than 10,000 square feet. If so, Percent for Public Art on Private Projects Program applies, per BMC Chapter 23C.23.</li> </ul>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Project involves the elimination or rehabilitation of any dwelling units, and/or are any of the dwelling units on the property controlled rental units? If so, your application will be referred to the Rent Stabilization Board. No action is required on your part. You may contact them at (510) 981-7368 if you have any questions.</li> </ul>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Construction activity within the drip line of a Coast Live Oak tree with circumference over 18" at 4'-6" above ground (or 26" aggregate circumference for multi-trunked trees)? If so, the Moratorium on the removal of Coast Live Oaks Ordinance applies, per BMC Chapter 6.52.</li> </ul>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Removal of 25% or more of a main building's exterior walls and roof (including replacement of existing structural members)? If so, the Demolition Ordinance may apply, per BMC Chapter 23C.08.</li> </ul>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Smoke Shops or Drug Paraphernalia?</li> </ul>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Cultivation, Distribution, Manufacture or Sale of Cannabis?</li> </ul>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Demolition or substantial change of a building &gt;40 years old? If so, the Demolition Ordinance will apply, per BMC Chapter 23C.08, as well as Section 15300.2 of the CEQA Guidelines.</li> </ul>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Construction on a parcel that is within 40' of an open creek or 25' of a culverted creek? If so, the Preservation and Restoration of Natural Watercourses Ordinance applies, per BMC Chapter 17.08</li> </ul>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Under penalty of perjury, I certify that:

- (1) the above information is true and complete to the best of my knowledge, and
- (2) the attached paper and electronic copies of this application are the same.

(\*Owner's signature, or signed letter authorizing applicant to apply on owner's behalf, is required for all applications.)

Applicant Signature: <u></u>	Owner's Signature: <u></u>
Printed: <u>DAVID HADDOCK</u>	Printed: <u>Matt Stewart</u>
Date: <u>12/14/18</u>	Date: <u>12.2.18</u>



# I. ZONING PROJECT APPLICATION FORM

*(This page is for staff use only.)*

Zoning District(s):	
Zoning Section	Description
1. 23 _____	UP/AUP to
2. 23 _____	UP/AUP to
3. 23 _____	UP/AUP to
4. 23 _____	UP/AUP to
5. 23 _____	UP/AUP to
6. 23 _____	UP/AUP to
7. 23 _____	UP/AUP to
8. 23 _____	UP/AUP to
9. 23 _____	UP/AUP to

## **Applicant Statement**

### **A. Description of the Coverage area.**

Verizon's objective is to improve coverage in the Berkeley Hills area, especially along Euclid Avenue north of EBMUD's Berryman Reservoir. This area is primarily residential and wooded, and provides few traditional locations for cell sites.

### **B. Statements Related to Need.**

Verizon's coverage objectives for this project are to improve service in the area described above, and to offload traffic from other nearby sites that are often at or exceeding capacity. Coverage maps showing existing coverage are included with this application, as are coverage maps showing anticipated coverage after the proposed project is constructed.

The proposed location is most appropriate as it will allow Verizon to achieve its coverage objectives, while causing the least impact on the neighborhood. This EBMUD parcel is already used for utility purposes. Adding a Verizon tower to this location will allow Verizon to cover the neighborhood without changing its character.

### **C. Description of Services.**

Wireless communications have become a modern necessity. This technology allows subscribers to communicate with others who use telephones, e-mail, text messages, etc. at essentially any time and any place. Wireless communications have become the primary medium for accomplishing business and leisure. Because of this, the Federal Communications Commission has observed that:

Wireless services are central to the economic, civic, and social lives of over 270 million Americans. Americans are now in the transition toward increasing reliance on their mobile devices for broadband services, in addition to voice services. Without access to mobile wireless networks, however, consumers cannot receive voice and broadband services from providers. Providers continue to build out their networks to provide such services, and a crucial requirement for providing those services is obtaining State and local governmental approvals for constructing towers or attaching transmitting equipment to pre-existing structures. *In re Petition for Declaratory Ruling*, 24 FCC Rcd. 13994.

Clearly, constructing wireless communications facilities, in general, is both essential and desirable to the public comfort and convenience. Moreover, the construction of this particular proposed facility is also essential and desirable to the public comfort and convenience. As shown on the coverage maps included with this application, Verizon coverage in the immediate vicinity of the proposed facility is poor. By building the proposed facility Verizon will dramatically improve coverage in the area, particularly inside of homes and other buildings. This will enable Verizon subscribers to more easily make contact with the world around them, including emergency services, such as law enforcement, fire departments, ambulances, etc.

In addition, adding the proposed facility in this location will decrease the amount of traffic that must be carried by other nearby wireless facilities, improving both the capacity and resiliency, thereby extending benefits beyond the immediate vicinity of this proposed facility.

Verizon is proposing to provide LTE service from this facility. Please note that LTE is a “data only” service, for which the term “minutes of use” has no meaning. The throughput or capacity of an LTE site is not measured in terms of the number of telephone calls, or the number of minutes of telephone usage, or blocked or dropped telephone calls. While voice telephone service will ultimately be provided from the proposed site, that service is just any other service that uses data, like e-mail or web browsing, or video.

**D. Visibility.**

Verizon proposes to install a monopole disguised as an evergreen tree. Antennas, remote radio units, and other related cables and equipment, would be mounted on the monopole. Other equipment cabinets, including a standby generator, would be installed on the ground near the monopole. Because it would be disguised as an evergreen tree, the monopole and attached antennas would have limited visibility from the neighborhood, as it would match the general appearance of other trees located in the vicinity. This is evident from the photosimulations submitted with this application. This EBMUD parcel is shaped like a bowl, with the lowest elevations surrounded by an earthen berm. Because ground equipment would be installed at the bottom of this bowl, it would not be visible from the street.

**E. Third Party Evaluation Statement.**

Verizon Wireless will pay the reasonable actual cost and administrative fees for the hiring of an independent qualified engineering consultant to evaluate any technical aspect of the proposed site, and will provide to the engineer any information necessary to perform the evaluation. A deposit of \$5,500 is included with this application.

**F. Noise Data.**

Verizon Wireless will pay the reasonable actual cost and administrative fees for the hiring of an independent qualified acoustic consultant to prepare or independently review an acoustic report on the equipment. A deposit of \$1,500 is included with this application.

**G. Assurance of Removal.**

Prior to obtaining a building permit to erect or install the proposed facility, Verizon Wireless will either secure a bond or provide financial assurances, in a form acceptable to the City Manager, for the removal of the facility in the event it is abandoned or the approval is otherwise terminated.

# PROPOSED PROJECT



## PROJECT INFORMATION

**Berryman Reservoir on Euclid Ave:** Proposed new wireless facility with faux evergreen tree tower and equipment on the ground.

## APPLICANT INFORMATION:

Verizon Wireless  
Ridge Communications, Inc.  
12919 Alcosta Blvd, Suite 1  
San Ramon, CA 94583  
(925) 498-2340

For more information check the  
Planning Department Web Page:  
[www.ci.berkeley.ca.us/planning](http://www.ci.berkeley.ca.us/planning)  
Or call 510-981-7410

Public Notices



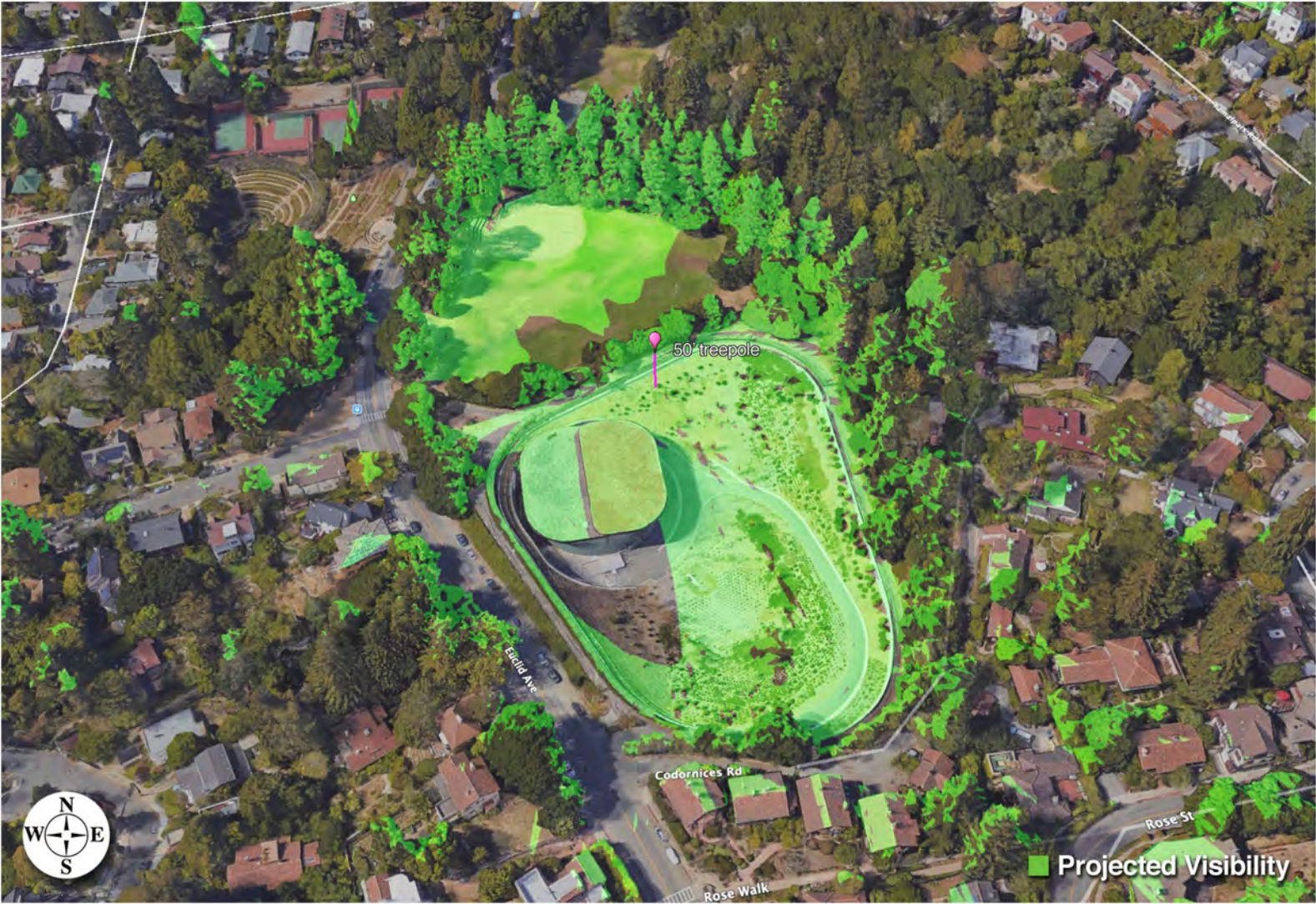












Projected visibility generated using Google Earth data. Actual visibility may be affected by conditions not reflected in the available data.



Berkeley Hills Site # 237566

Viewshed Map

11/6/18

EBMUD Berryman Reservoir  
Berkeley, CA

Applied Imagination 510 914-0500



December 17, 2018

City of Berkeley  
Planning and Development Department  
1947 Center Street, 3<sup>rd</sup> Floor  
Berkeley, CA 94704

Re: Verizon Wireless Permit Application  
New Telecommunication Facility  
EBMUD Berryman Reservoir  
Euclid Ave & Codornices Rd

Dear Planning Department:

Please find enclosed with this letter materials to support an application for a Use Permit for a new Verizon Wireless facility at the address shown above.

Per the City's requirements, I have included with this cover letter the following documents:

- Zoning Project Application
- Use Permit application fee of \$3,270
- Applicant Statement
- \$5,500 Deposit for Third Party Evaluation
- Noise Study
- \$1,500 Deposit for Third Party Review of Noise Study
- Photo of Pre-Application Poster
- (1) full sized, (2) 11x17 and (1) 8.5x11 plan sets
- Hazardous Waste and Substances Statement
- Zoning Use Questionnaire
- Tabulation Form
- Current FCC Licenses
- Radio Frequency Report
- Photo Simulations
- Coverage Maps – Before and After
- CD with copies of all files

Sincerely,



David Haddock  
Site Development Manager  
Ridge Communications, Inc. for Verizon Wireless  
12919 Alcosta Blvd. Ste. 1  
San Ramon, CA 94583

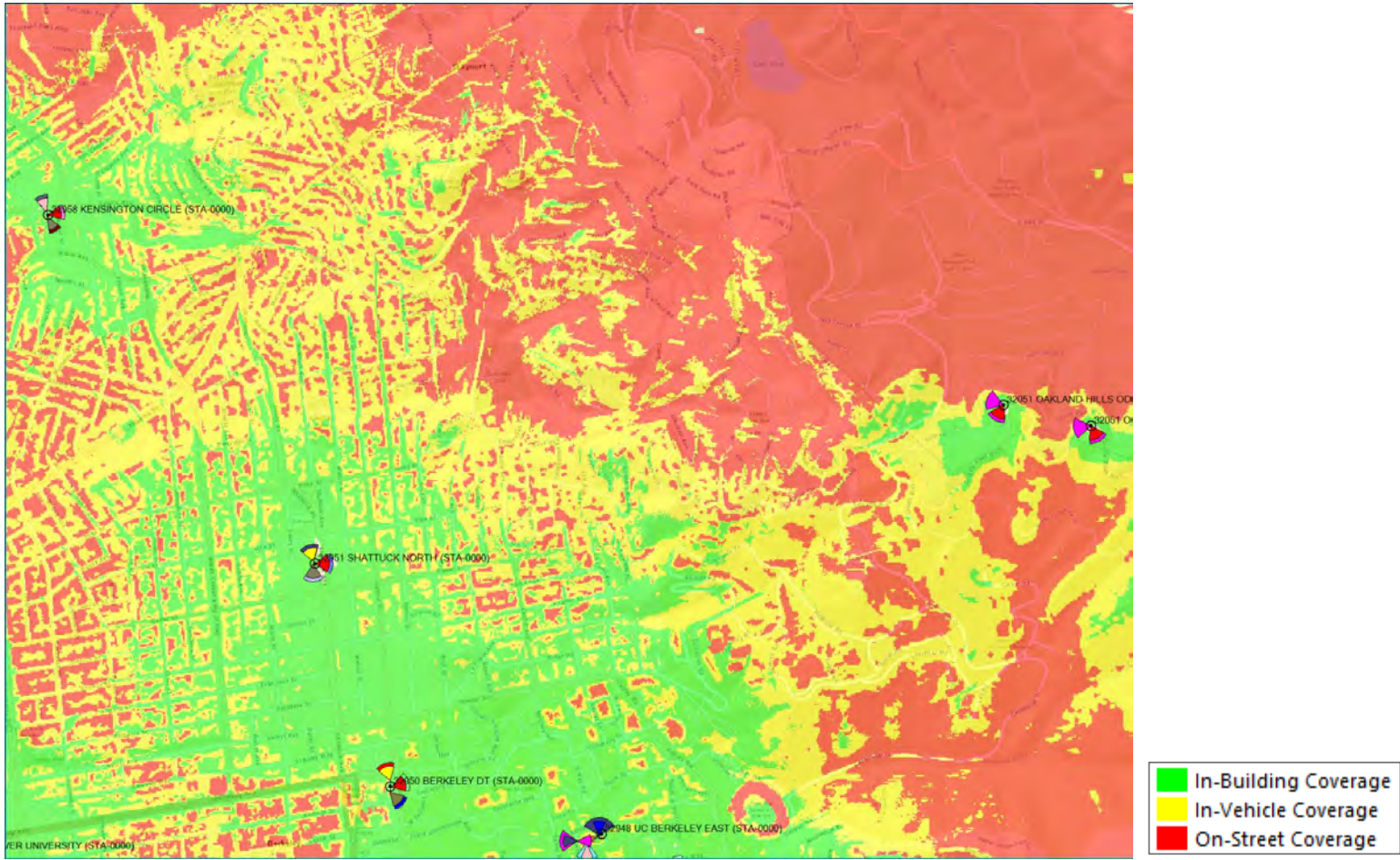


# Berkeley Hills 700 & AWS Analysis

Nov 14th 2018



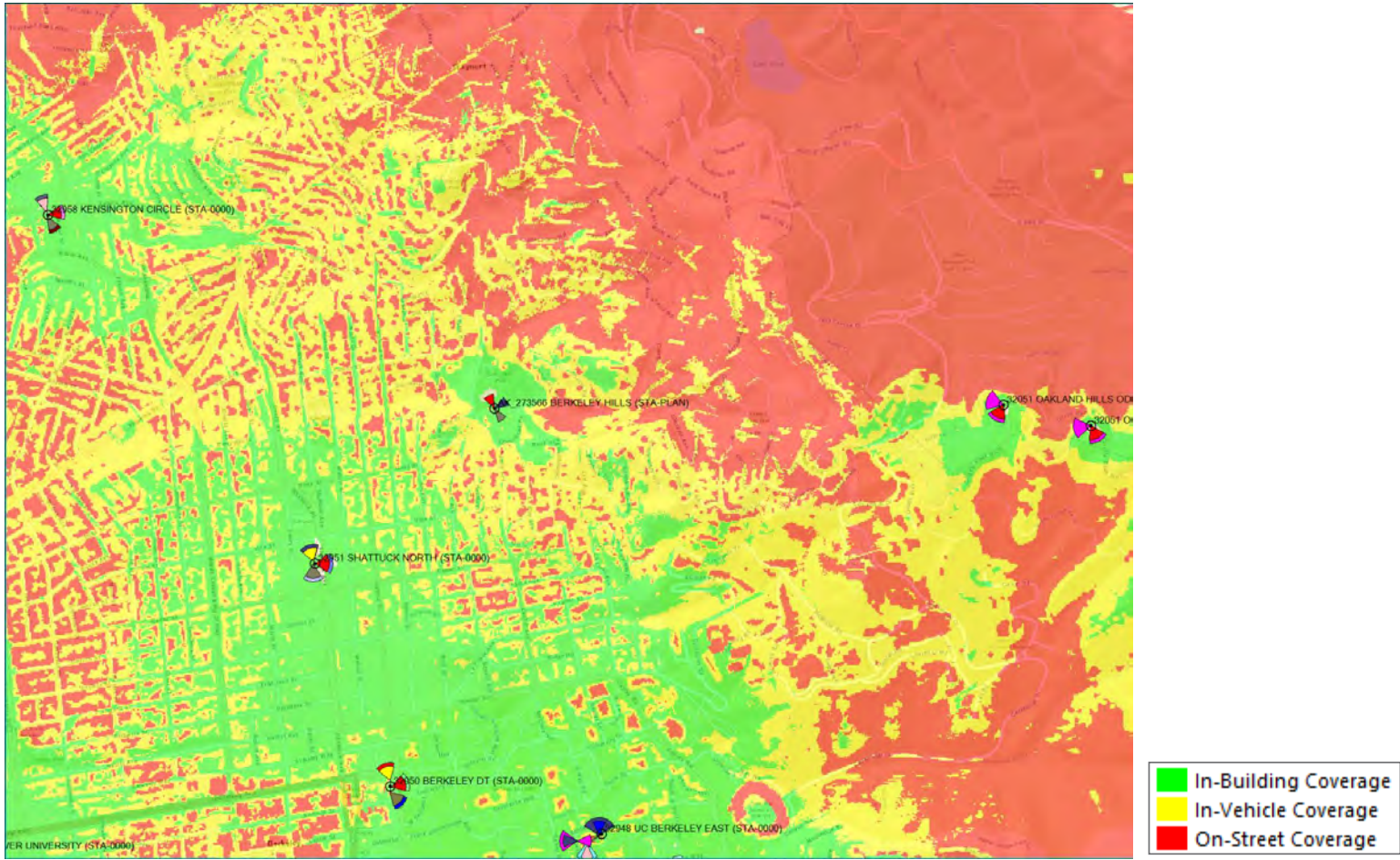
# Before Site RSRP@700







# After Site RSRP@700



12/17/2018

ULS License - Cellular License - KNKA228 - GTE MOBILNET OF CALIFORNIA LIMITED PARTNERSHIP

ULS License

**Cellular License - KNKA228 - GTE MOBILNET OF CALIFORNIA LIMITED PARTNERSHIP**

Call Sign	KNKA228	Radio Service	CL - Cellular
Status	Active	Auth Type	Regular

**Market**

Market	CMA007 - San Francisco-Oakland, CA	Channel Block	B
Submarket	0	Phase	2

**Dates**

Grant	04/14/2015	Expiration	05/15/2025
Effective	11/01/2016	Cancellation	

**Five Year Buildout Date**

03/08/1990

**Control Points**

**4** 500 W. Dove Rd., TARRANT, Southlake, TX  
P: (800)264-6620

**Licensee**

FRN	0003579380	Type	Limited Partnership
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**Licensee**

GTE MOBILNET OF CALIFORNIA LIMITED PARTNERSHIP 5055 North Point Pkwy, NP2NE Network Engineering Alpharetta, GA 30022 ATTN Regulatory	P:(770)797-1070 F:(770)797-1036 E:LicensingCompliance@VerizonWireless.com
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**Contact**

Verizon Wireless Licensing - Manager 5055 North Point Pkwy, NP2NE Network Engineering Alpharetta, GA 30022 ATTN Regulatory	P:(770)797-1070 F:(770)797-1036 E:LicensingCompliance@VerizonWireless.com
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**Ownership and Qualifications**

Radio Service Type	Mobile
Regulatory Status	Common Carrier Interconnected Yes

**Alien Ownership**

The Applicant answered "No" to each of the Alien Ownership questions.

**Basic Qualifications**

The Applicant answered "No" to each of the Basic Qualification questions.

**Demographics**

Race	
Ethnicity	Gender

12/17/2018

ULS License - Cellular License - KNKA228 - GTE MOBILNET OF CALIFORNIA LIMITED PARTNERSHIP

12/17/2018

ULS License - PCS Broadband License - WQCV287 - Cellco Partnership

ULS License

## PCS Broadband License - WQCV287 - Cellco Partnership

Call Sign	WQCV287	Radio Service	CW - PCS Broadband
Status	Active	Auth Type	Regular

### Rural Service Provider Bidding Credit

Is the Applicant seeking a Rural Service Provider (RSP) bidding credit?

### Reserved Spectrum

Reserved Spectrum

### Market

Market	BTA404 - San Francisco-Oakland-San Jose, CA	Channel Block	C
Submarket	22	Associated Frequencies (MHz)	001895.00000000-001910.00000000-001975.00000000-001990.00000000

### Dates

Grant	01/18/2017	Expiration	01/27/2027
Effective	01/18/2017	Cancellation	

### Buildout Deadlines

1st	01/27/2002	2nd	
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### Notification Dates

1st	01/25/2002	2nd	
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### Licensee

FRN	0003290673	Type	General Partnership
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### Licensee

Cellco Partnership 5055 North Point Pkwy, NP2NE Network Engineering Alpharetta, GA 30022 ATTN Regulatory	P:(770)797-1070 F:(770)797-1036 E:LicensingCompliance@VerizonWireless.com
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### Contact

Cellco Partnership Licensing - Manager 5055 North Point Pkwy, NP2NE Network Engineering Alpharetta, GA 30022 ATTN Regulatory	P:(770)797-1070 F:(770)797-1036 E:LicensingCompliance@VerizonWireless.com
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### Ownership and Qualifications

Radio Service Type	Mobile		
Regulatory Status	Common Carrier	Interconnected	Yes

### Alien Ownership

12/17/2018

ULS License - PCS Broadband License - WQCV287 - Cellco Partnership

Is the applicant a foreign government or the representative of any foreign government? No

Is the applicant an alien or the representative of an alien? No

Is the applicant a corporation organized under the laws of any foreign government? No

Is the applicant a corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country? No

Is the applicant directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof, or by any corporation organized under the laws of a foreign country? **Yes**

If the answer to the above question is 'Yes', has the applicant received a ruling(s) under Section 310(b)(4) of the Communications Act with respect to the same radio service involved in this application? **Yes**

**Basic Qualifications**

The Applicant answered "No" to each of the Basic Qualification questions.

**Tribal Land Bidding Credits**

This license did not have tribal land bidding credits.

**Demographics**

Race

Ethnicity

Gender

12/17/2018

ULS License - AWS (1710-1755 MHz and 2110-2155 MHz) License - WQGB267 - Cellco Partnership

ULS License

**AWS (1710-1755 MHz and 2110-2155 MHz) License - WQGB267 - Cellco Partnership**

Call Sign	WQGB267	Radio Service	AW - AWS (1710-1755 MHz and 2110-2155 MHz)
Status	Active	Auth Type	Regular

**Rural Service Provider Bidding Credit**

Is the Applicant seeking a Rural Service Provider (RSP) bidding credit?

**Reserved Spectrum**

Reserved Spectrum

**Market**

Market	CMA007 - San Francisco-Oakland, CA	Channel Block	A
Submarket	0	Associated Frequencies (MHz)	001710.00000000-001720.00000000-002110.00000000-002120.00000000

**Dates**

Grant	11/29/2006	Expiration	11/29/2021
Effective	11/01/2016	Cancellation	

**Buildout Deadlines**

1st	2nd
-----	-----

**Notification Dates**

1st	2nd
-----	-----

**Licensee**

FRN	0003290673	Type	General Partnership
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**Licensee**

Cellco Partnership 5055 North Point Pkwy, NP2NE Network Engineering Alpharetta, GA 30022 ATTN Regulatory	P:(770)797-1070 F:(770)797-1036 E:licensingcompliance@verizonwireless.com
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**Contact**

Cellco Partnership Licensing Manager 5055 North Point Pkwy, NP2NE Network Engineering Alpharetta, GA 30022 ATTN Regulatory	P:(770)797-1070 F:(770)797-1036 E:LicensingCompliance@VerizonWireless.com
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**Ownership and Qualifications**

Radio Service Type    Mobile

12/17/2018

ULS License - AWS (1710-1755 MHz and 2110-2155 MHz) License - WQGB267 - Cellco Partnership

Regulatory Status    Common Carrier    Interconnected    Yes

**Alien Ownership**

The Applicant answered "No" to each of the Alien Ownership questions.

**Basic Qualifications**

The Applicant answered "No" to each of the Basic Qualification questions.

**Tribal Land Bidding Credits**

This license did not have tribal land bidding credits.

**Demographics**

Race

Ethnicity

Gender

12/17/2018

ULS License - 700 MHz Upper Band (Block C) License - WQJQ694 - Cellco Partnership

ULS License

## 700 MHz Upper Band (Block C) License - WQJQ694 - Cellco Partnership

Call Sign	WQJQ694	Radio Service	WU - 700 MHz Upper Band (Block C)
Status	Active	Auth Type	Regular

### Rural Service Provider Bidding Credit

Is the Applicant seeking a Rural Service Provider (RSP) bidding credit?

### Reserved Spectrum

Reserved Spectrum

### Market

Market	REA006 - West	Channel Block	C
Submarket	0	Associated Frequencies (MHz)	000746.00000000-000757.00000000-000776.00000000-000787.00000000

### Dates

Grant	11/26/2008	Expiration	06/13/2019
Effective	09/11/2018	Cancellation	

### Buildout Deadlines

1st	06/13/2013	2nd	06/13/2019
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### Notification Dates

1st	06/20/2013	2nd	
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### Licensee

FRN	0003290673	Type	General Partnership
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### Licensee

Cellco Partnership 5055 North Point Pkwy NP2NE Network Engineering Alpharetta, GA 30022 ATTN Regulatory	P:(770)797-1070 E:LicensingCompliance@VerizonWireless.com
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### Contact

Verizon Wireless Licensing Manager 5055 North Point Pkwy, NP2NE Network Engineering Alpharetta, GA 30022 ATTN Regulatory	P:(770)797-1070 E:LicensingCompliance@VerizonWireless.com
--	--

### Ownership and Qualifications

Radio Service Type	Mobile		
Regulatory Status	Common Carrier	Interconnected	Yes

### Alien Ownership



12/17/2018

ULS License - 700 MHz Upper Band (Block C) License - WQJQ694 - Celco Partnership

The Applicant answered "No" to each of the Alien Ownership questions.

**Basic Qualifications**

The Applicant answered "No" to each of the Basic Qualification questions.

**Tribal Land Bidding Credits**

This license did not have tribal land bidding credits.

**Demographics**

Race

Ethnicity

Gender

12/17/2018

ULS License - AWS (1710-1755 MHz and 2110-2155 MHz) License - WQQA218 - Cellco Partnership

ULS License

## AWS (1710-1755 MHz and 2110-2155 MHz) License - WQQA218 - Cellco Partnership

Call Sign	WQQA218	Radio Service	AW - AWS (1710-1755 MHz and 2110-2155 MHz)
Status	Active	Auth Type	Regular

### Rural Service Provider Bidding Credit

Is the Applicant seeking a Rural Service Provider (RSP) bidding credit?

### Reserved Spectrum

Reserved Spectrum

### Market

Market	BEA163 - San Francisco-Oakland-San Jose, CA	Channel Block	B
Submarket	4	Associated Frequencies (MHz)	001720.00000000-001730.00000000-002120.00000000-002130.00000000

### Dates

Grant	08/23/2012	Expiration	11/29/2021
Effective	11/01/2016	Cancellation	

### Buildout Deadlines

1st	2nd
-----	-----

### Notification Dates

1st	2nd
-----	-----

### Licensee

FRN	0003290673	Type	General Partnership
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### Licensee

Cellco Partnership 5055 North Point Pkwy, NP2NE Network Engineering Alpharetta, GA 30022 ATTN Regulatory	P:(770)797-1070 F:(770)797-1036 E:licensingcompliance@verizonwireless.com
---	---

### Contact

Cellco Partnership Licensing Manager 5055 North Point Pkwy, NP2NE Network Engineering Alpharetta, GA 30022 ATTN Regulatory	P:(770)797-1070 F:(770)797-1036 E:LicensingCompliance@VerizonWireless.com
--	---

### Ownership and Qualifications

Radio Service Type    Mobile

12/17/2018

ULS License - AWS (1710-1755 MHz and 2110-2155 MHz) License - WQQA218 - Cellco Partnership

Regulatory Status    Common Carrier    Interconnected    Yes

**Alien Ownership**

The Applicant answered "No" to each of the Alien Ownership questions.

**Basic Qualifications**

The Applicant answered "No" to each of the Basic Qualification questions.

**Tribal Land Bidding Credits**

This license did not have tribal land bidding credits.

**Demographics**

Race

Ethnicity

Gender

12/17/2018

ULS License - PCS Broadband License - WQTX823 - Cellco Partnership

ULS License

## PCS Broadband License - WQTX823 - Cellco Partnership

Call Sign	WQTX823	Radio Service	CW - PCS Broadband
Status	Active	Auth Type	Regular

### Rural Service Provider Bidding Credit

Is the Applicant seeking a Rural Service Provider (RSP) bidding credit?

### Reserved Spectrum

Reserved Spectrum

### Market

Market	BTA404 - San Francisco-Oakland-San Jose, CA	Channel Block	C
Submarket	24	Associated Frequencies (MHz)	001895.00000000-001910.00000000-001975.00000000-001990.00000000

### Dates

Grant	01/18/2017	Expiration	01/27/2027
Effective	01/18/2017	Cancellation	

### Buildout Deadlines

1st	2nd
-----	-----

### Notification Dates

1st	2nd
-----	-----

### Licensee

FRN	0003290673	Type	General Partnership
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### Licensee

Cellco Partnership 5055 North Point Pkwy, NP2NE Network Engineering Alpharetta, GA 30022 ATTN Regulatory	P:(770)797-1070 F:(770)797-1036 E:licensingcompliance@verizonwireless.com
---	---

### Contact

Cellco Partnership Licensing Manager 5055 North Point Pkwy, NP2NE Network Engineering Alpharetta, GA 30022 ATTN Regulatory	P:(770)797-1070 F:(770)797-1036 E:LicensingCompliance@VerizonWireless.com
--	---

### Ownership and Qualifications

Radio Service Type	Mobile
Regulatory Status	Common Carrier Interconnected Yes

### Alien Ownership

12/17/2018

ULS License - PCS Broadband License - WQTX823 - Cellco Partnership

The Applicant answered "No" to each of the Alien Ownership questions.

**Basic Qualifications**

The Applicant answered "No" to each of the Basic Qualification questions.

**Tribal Land Bidding Credits**

This license did not have tribal land bidding credits.

**Demographics**

Race

Ethnicity

Gender

12/17/2018

ULS License - AWS-3 (1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz) License - WQVP232 - Cellco Partnership

ULS License

**AWS-3 (1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz) License - WQVP232 - Cellco Partnership**

Call Sign	WQVP232	Radio Service	AT - AWS-3 (1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz)
Status	Active	Auth Type	Regular

**Rural Service Provider Bidding Credit**

Is the Applicant seeking a Rural Service Provider (RSP) bidding credit?

**Reserved Spectrum**

Reserved Spectrum

**Market**

Market	BEA163 - San Francisco-Oakland-San Jose, CA	Channel Block	J
Submarket	0	Associated Frequencies (MHz)	001770.00000000-001780.00000000-002170.00000000-002180.00000000

**Dates**

Grant	04/08/2015	Expiration	04/08/2027
Effective	11/01/2016	Cancellation	

**Buildout Deadlines**

1st	04/08/2021	2nd	04/08/2027
-----	------------	-----	------------

**Notification Dates**

1st		2nd	
-----	--	-----	--

**Licensee**

FRN	0003290673	Type	General Partnership
-----	------------	------	---------------------

**Licensee**

Cellco Partnership 5055 North Point Pkwy, NP2NE Network Engineering Alpharetta, GA 30022 ATTN Regulatory	P:(770)797-1070 F:(770)797-1036 E:licensingcompliance@verizonwireless.com
---	---

**Contact**

Verizon Wireless Licensing Manager 5055 North Point Pkwy, NP2NE Network Engineering Alpharetta, GA 30022 ATTN Regulatory	P:(770)797-1070 F:(770)797-1036 E:LicensingCompliance@VerizonWireless.com
--	---

**Ownership and Qualifications**

12/17/2018

ULS License - AWS-3 (1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz) License - WQVP232 - Cellco Partnership

Radio Service Type    Mobile

Regulatory Status    Common Carrier    Interconnected    Yes

**Alien Ownership**

The Applicant answered "No" to each of the Alien Ownership questions.

**Basic Qualifications**

The Applicant answered "No" to each of the Basic Qualification questions.

**Tribal Land Bidding Credits**

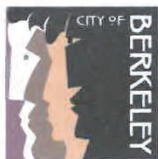
This license did not have tribal land bidding credits.

**Demographics**

Race

Ethnicity

Gender



## PLANNING & DEVELOPMENT

Land Use Planning, 2120 Milvia Street, Berkeley, CA 94704  
Tel: 510.981.7410 TDD: 510.981.7474 Fax: 510.981.7420  
Email: [Planning@ci.berkeley.ca.us](mailto:Planning@ci.berkeley.ca.us)

### II.E. HAZARDOUS WASTE AND SUBSTANCES STATEMENT

Pursuant to the Permit Streamlining Act (PSA), a development permit application may not be accepted as complete unless and until the applicant has submitted a signed statement indicating whether the proposed project site or any alternative site(s) is on the lists of hazardous waste sites compiled pursuant to Government Code Section 65962.5 by the California Secretary for Environmental Protection.

Data lists / maps are available at the following websites (check multiple lists and categories):

<http://www.calepa.ca.gov/SiteCleanup/CorteseList/>

<http://www.envirostor.dtsc.ca.gov/public/>

<https://geotracker.waterboards.ca.gov/>

---

#### Applicant's Information:

Name: Verizon Wireless by Ridge Communications, Inc. Attn: David Haddock

Street Address: 12919 Alcosta Blvd. Ste 1

City, State, Zip Code: San Ramon, CA 94583

Phone Number: 916-420-5802

#### Project Information:

Address: EBMUD Berryman Reservoir @ Euclid Ave & Codomices Rd

City, State, Zip Code: Berkeley, CA 94708

Assessor's book, page, and parcel number: 060-2468-001-04

Specify any list pursuant to Section 65962.5 of the Government Code: N/A

Regulatory identification number: \_\_\_\_\_

Date of list: \_\_\_\_\_

#### Applicant's verification:

Signature: 

Date: 12/14/18



**Verizon Wireless • Proposed Base Station (Site No. 273566 “Berkeley Hills”)  
Euclid Avenue • Berkeley, California**

**Statement of Hammett & Edison, Inc., Consulting Engineers**

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of Verizon Wireless, a personal wireless telecommunications carrier, to evaluate the base station (Site No. 273566 “Berkeley Hills”) proposed to be located at Euclid Avenue in Berkeley, California, for compliance with appropriate guidelines limiting human exposure to radio frequency (“RF”) electromagnetic fields.

**Executive Summary**

Verizon proposes to install directional panel antennas on a tall pole to be sited at the EBMUD Berryman Reservoir facility, located on Euclid Avenue in Berkeley. The proposed operation will comply with the FCC guidelines limiting public exposure to RF energy.

**Prevailing Exposure Standards**

The U.S. Congress requires that the Federal Communications Commission (“FCC”) evaluate its actions for possible significant impact on the environment. A summary of the FCC’s exposure limits is shown in Figure 1. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. The most restrictive FCC limit for exposures of unlimited duration to radio frequency energy for several personal wireless services are as follows:

Wireless Service	Frequency Band	Occupational Limit	Public Limit
Microwave (Point-to-Point)	5–80 GHz	5.00 mW/cm <sup>2</sup>	1.00 mW/cm <sup>2</sup>
WiFi (and unlicensed uses)	2–6	5.00	1.00
BRS (Broadband Radio)	2,600 MHz	5.00	1.00
WCS (Wireless Communication)	2,300	5.00	1.00
AWS (Advanced Wireless)	2,100	5.00	1.00
PCS (Personal Communication)	1,950	5.00	1.00
Cellular	870	2.90	0.58
SMR (Specialized Mobile Radio)	855	2.85	0.57
700 MHz	700	2.40	0.48
[most restrictive frequency range]	30–300	1.00	0.20

**General Facility Requirements**

Base stations typically consist of two distinct parts: the electronic transceivers (also called “radios” or “channels”) that are connected to the traditional wired telephone lines, and the passive antennas that send the wireless signals created by the radios out to be received by individual subscriber units. The transceivers are often located at ground level and are connected to the antennas by coaxial cables. A small antenna for reception of GPS signals is also required, mounted with a clear view of the sky. Because of the short wavelength of the frequencies assigned by the FCC for wireless services, the antennas require line-of-sight paths for their signals to propagate well and so are installed at some height

**Verizon Wireless • Proposed Base Station (Site No. 273566 “Berkeley Hills”)  
Euclid Avenue • Berkeley, California**

above ground. The antennas are designed to concentrate their energy toward the horizon, with very little energy wasted toward the sky or the ground. This means that it is generally not possible for exposure conditions to approach the maximum permissible exposure limits without being physically very near the antennas.

**Computer Modeling Method**

The FCC provides direction for determining compliance in its Office of Engineering and Technology Bulletin No. 65, “Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radio Frequency Radiation,” dated August 1997. Figure 2 describes the calculation methodologies, reflecting the facts that a directional antenna’s radiation pattern is not fully formed at locations very close by (the “near-field” effect) and that at greater distances the power level from an energy source decreases with the square of the distance from it (the “inverse square law”). The conservative nature of this method for evaluating exposure conditions has been verified by numerous field tests.

**Site and Facility Description**

Based upon information provided by Verizon, including zoning drawings by Streamline Engineering and Design, Inc., dated March 13, 2018, it is proposed to install six JMA Wireless Model MX06FRO840-02 directional panel antennas on a new 45-foot steel pole, configured to resemble a pine tree,\* to be sited about 70 feet north of the water tank at the EBMUD Berryman Reservoir facility, located on Euclid Avenue in Berkeley. The antennas would employ up to 16° downtilt, would be mounted at an effective height of about 40½ feet above ground, and would be oriented in pairs toward 60°T, 145°T, and 335°T. The maximum effective radiated power in any direction would be 51,870 watts, representing simultaneous operation at 20,900 watts for AWS, 10,000 watts† for PCS, 10,970 watts for cellular, and 10,000 watts for 700 MHz service. There are reported no other wireless telecommunications base stations at the site or nearby.

**Study Results**

For a person anywhere at ground, the maximum RF exposure level due to the proposed Verizon operation is calculated to be 0.32 mW/cm<sup>2</sup>, which is 60% of the applicable public exposure limit. The maximum calculated level at the second-floor elevation of any nearby residence‡ is 12% of the public exposure limit. The maximum calculated level for a worker on the water tank is 84% of the public exposure limit. It should be noted that these results include several “worst-case” assumptions and therefore are expected to overstate actual power density levels from the proposed operation.

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\* Foliage atop the pole puts the overall height at 50 feet.

† Verizon indicates it will operate at reduced power in this band so as not to exceed the emission limit in §24.232 of the FCC Rules.

‡ Located at least 290 feet away, based on photographs from Google Maps.

**Verizon Wireless • Proposed Base Station (Site No. 273566 “Berkeley Hills”)  
Euclid Avenue • Berkeley, California**

**No Recommended Mitigation Measures**

Due to their mounting locations and height, the Verizon antennas would not be accessible to unauthorized persons, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. It is presumed that Verizon will, as an FCC licensee, take adequate steps to ensure that its employees or contractors receive appropriate training and comply with FCC occupational exposure guidelines whenever work is required near the antennas themselves.

**Conclusion**

Based on the information and analysis above, it is the undersigned’s professional opinion that operation of the base station proposed by Verizon Wireless at Euclid Avenue in Berkeley, California, will comply with the prevailing standards for limiting public exposure to radio frequency energy and, therefore, will not for this reason cause a significant impact on the environment. The highest calculated level in publicly accessible areas is much less than the prevailing standards allow for exposures of unlimited duration. This finding is consistent with measurements of actual exposure conditions taken at other operating base stations.

**Authorship**

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration Nos. E-13026 and M-20676, which expire on June 30, 2019. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.



*William F. Hammett*  
William F. Hammett, P.E.  
707/996-5200

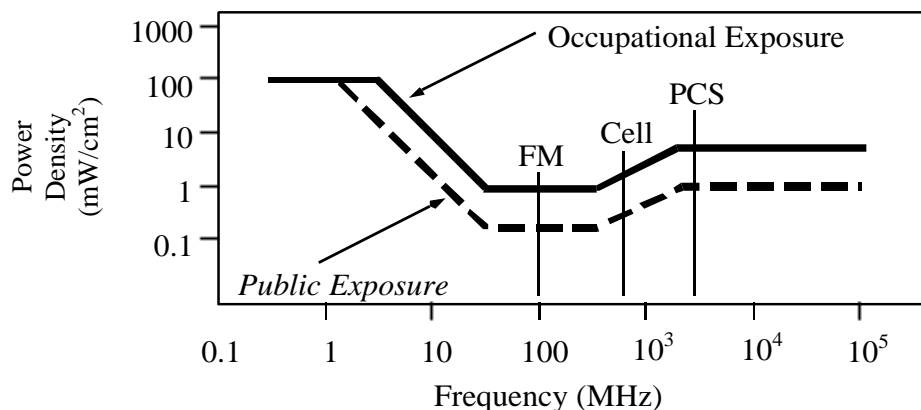
October 17, 2018

### FCC Radio Frequency Protection Guide

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission (“FCC”) to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The FCC adopted the limits from Report No. 86, “Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields,” published in 1986 by the Congressionally chartered National Council on Radiation Protection and Measurements (“NCRP”). Separate limits apply for occupational and public exposure conditions, with the latter limits generally five times more restrictive. The more recent standard, developed by the Institute of Electrical and Electronics Engineers and approved as American National Standard ANSI/IEEE C95.1-2006, “Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz,” includes similar limits. These limits apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

As shown in the table and chart below, separate limits apply for occupational and public exposure conditions, with the latter limits (in *italics* and/or dashed) up to five times more restrictive:

Frequency Applicable Range (MHz)	Electromagnetic Fields (f is frequency of emission in MHz)					
	Electric Field Strength (V/m)		Magnetic Field Strength (A/m)		Equivalent Far-Field Power Density (mW/cm <sup>2</sup> )	
0.3 – 1.34	614	<i>614</i>	1.63	<i>1.63</i>	100	<i>100</i>
1.34 – 3.0	614	<i>823.8/f</i>	1.63	<i>2.19/f</i>	100	<i>180/f<sup>2</sup></i>
3.0 – 30	1842/f	<i>823.8/f</i>	4.89/f	<i>2.19/f</i>	900/f <sup>2</sup>	<i>180/f<sup>2</sup></i>
30 – 300	61.4	<i>27.5</i>	0.163	<i>0.0729</i>	1.0	<i>0.2</i>
300 – 1,500	3.54√f	<i>1.59√f</i>	√f/106	<i>√f/238</i>	f/300	<i>f/1500</i>
1,500 – 100,000	137	<i>61.4</i>	0.364	<i>0.163</i>	5.0	<i>1.0</i>



Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits, and higher levels also are allowed for exposures to small areas, such that the spatially averaged levels do not exceed the limits. However, neither of these allowances is incorporated in the conservative calculation formulas in the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) for projecting field levels. Hammett & Edison has built those formulas into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radio sources. The program allows for the description of buildings and uneven terrain, if required to obtain more accurate projections.

## RFR.CALC™ Calculation Methodology

### Assessment by Calculation of Compliance with FCC Exposure Guidelines

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission (“FCC”) to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The maximum permissible exposure limits adopted by the FCC (see Figure 1) apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits.

#### Near Field.

Prediction methods have been developed for the near field zone of panel (directional) and whip (omnidirectional) antennas, typical at wireless telecommunications base stations, as well as dish (aperture) antennas, typically used for microwave links. The antenna patterns are not fully formed in the near field at these antennas, and the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) gives suitable formulas for calculating power density within such zones.

For a panel or whip antenna, power density  $S = \frac{180}{\theta_{BW}} \times \frac{0.1 \times P_{net}}{\pi \times D \times h}$ , in mW/cm<sup>2</sup>,

and for an aperture antenna, maximum power density  $S_{max} = \frac{0.1 \times 16 \times \eta \times P_{net}}{\pi \times h^2}$ , in mW/cm<sup>2</sup>,

where  $\theta_{BW}$  = half-power beamwidth of the antenna, in degrees, and

$P_{net}$  = net power input to the antenna, in watts,

$D$  = distance from antenna, in meters,

$h$  = aperture height of the antenna, in meters, and

$\eta$  = aperture efficiency (unitless, typically 0.5-0.8).

The factor of 0.1 in the numerators converts to the desired units of power density.

#### Far Field.

OET-65 gives this formula for calculating power density in the far field of an individual RF source:

power density  $S = \frac{2.56 \times 1.64 \times 100 \times RFF^2 \times ERP}{4 \times \pi \times D^2}$ , in mW/cm<sup>2</sup>,

where ERP = total ERP (all polarizations), in kilowatts,

RFF = relative field factor at the direction to the actual point of calculation, and

$D$  = distance from the center of radiation to the point of calculation, in meters.

The factor of 2.56 accounts for the increase in power density due to ground reflection, assuming a reflection coefficient of 1.6 (1.6 x 1.6 = 2.56). The factor of 1.64 is the gain of a half-wave dipole relative to an isotropic radiator. The factor of 100 in the numerator converts to the desired units of power density. This formula has been built into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radiation sources. The program also allows for the description of uneven terrain in the vicinity, to obtain more accurate projections.

**Verizon Wireless • Proposed Base Station (Site No. 273566 “Berkeley Hills”)  
Euclid Avenue • Berkeley, California**

**Supplemental Information for  
Review by URS Corporation**

Underlying RF Exposure Report: dated October 17, 2018

Attached are antenna manufacturers’ specification documents, showing antenna patterns and highlighted to show half-power beam width, front-to-back ratio, and aperture height for the following antennas proposed for use at this base station:

JMA Wireless MX06FRO840-02

The applicable  $P_{net}$  values are as follows  
(referencing the panel antenna near-field calculation formula in Figure 2 of Report):

<u><math>P_{net}</math></u>	<u>Frequency Band</u>
285 watts	AWS
150 watts	PCS
285 watts	cellular
285 watts	700 MHz

October 17, 2018

Product Specifications

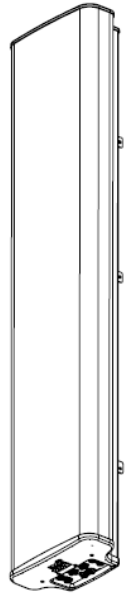
# MX06FRO840-02

NWAV™ X-Pol Antenna | Hex-Port | 8 ft | 40°



## X-Pol, Hex-Port 8 ft 40° Fast Roll Off with Smart Bias T (2) 698–894 MHz & (4) 1695–2180 MHz

- Fast Roll Off (FRO™) Azimuth beam pattern improves Intra- and Inter-cell SINR
- Excellent Passive Intermodulation (PIM) performance reduces harmful interference
- Fully integrated (iRETs) with *independent* RET control for low and high bands for ease of network optimization
- SON-Ready array spacing supports beamforming capabilities
- Suitable for LTE/CDMA/PCS/UMTS/GSM Air interface technologies
- Integrated Smart BIAS-Ts reduces leasing costs



Electrical Specification (Minimum/ Maximum)	Ports 1,2		Ports 3,4,5,6		
	698–798	824–894	1695–1880	1850–1990	1920–2180
Frequency bands, MHz	698–798	824–894	1695–1880	1850–1990	1920–2180
Polarization	± 45°		± 45°		
Average gain over all tilts, dBi	17.6	18.0	19.9	20.4	20.8
Horizontal beamwidth (HBW), degrees <sup>1</sup>	42°	37°	39°	36°	34°
Front-to-back ratio, co-polar power @180° ± 30°, dB	>22.0	>22.0	>25.0	>25.0	>25.0
X-Pol discrimination (CPR) at boresight, dB	>18.0	>15.0	>18	>18	>15
Sector power ratio, percent	<4.5	<3.5	<3.7	<3.8	<3.6
Vertical beamwidth, (VBW), degrees <sup>1</sup>	9.0°	8.3°	6.0°	5.7°	5.3°
Electrical downtilt (EDT) range, degrees	2-12	2-12	0-9		
First upper side lobe (USLS) suppression, dB <sup>1</sup>	≤ -15.0	≤ -15.0	≤ -16.0	≤ -16.0	≤ -16.0
Minimum cross polar isolation, port-to-port, dB	25	25	25	25	25
Maximum VSWR/ return loss, dB	1.5/ -14.0	1.5/ -14.0	1.5/ -14.0	1.5/ -14.0	1.5/ -14.0
Maximum passive Intermodulation (PIM), 2x 20W carrier, dBc	-153	-153	-153		
Maximum input power per any port, watts	300		250		
Total composite power all ports, watts			1500		

<sup>1</sup> Typical value over frequency and tilt

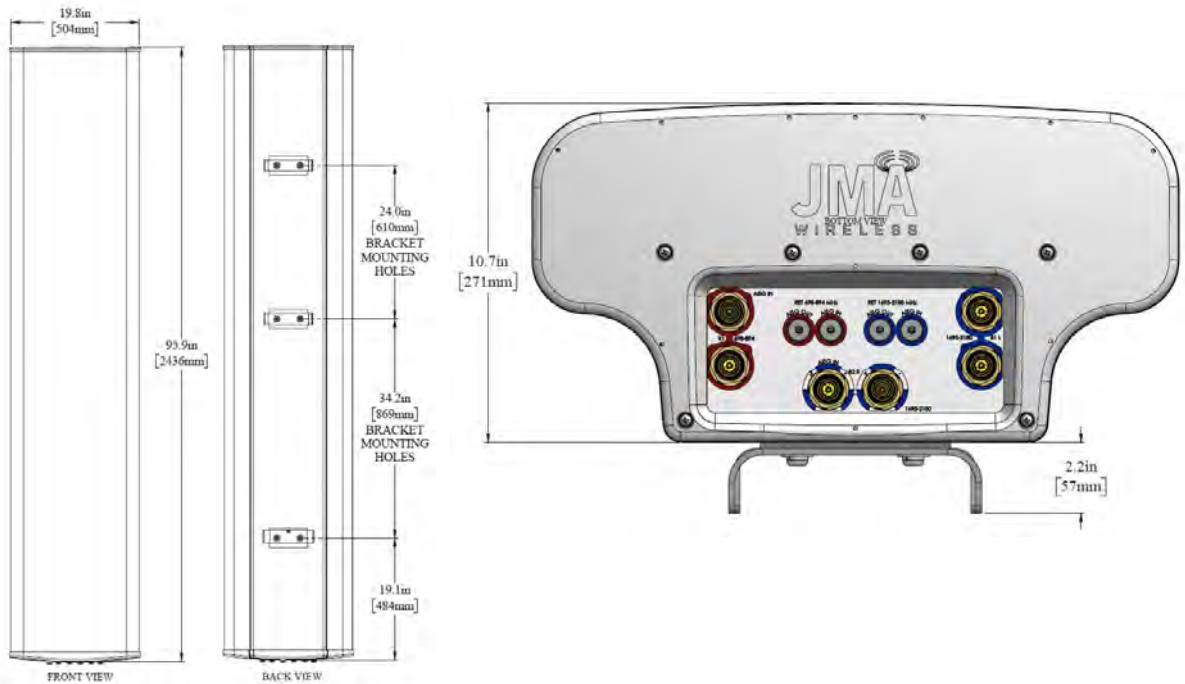
Product Specifications

# MX06FRO840-02

NWAV™ X-Pol Antenna | Hex-Port | 8 ft | 40°



Mechanical Specifications	
Dimensions height/ width/ depth, inches (mm)	95.9/ 19.8/ 10.7 (2436/504/ 271)
Shipping dimensions length/ width/ height, inches (mm)	106/ 26/ 15 (2692/ 660/ 381)
No. of RF input ports, connector type & location	6 x 4.3-10 female, bottom
RF connector torque	96 lbf-in (10.85 N m or 8 lbf-ft)
Net antenna weight, lb (kg)	75 (34.0)
Shipping weight, lb (kg)	105 (47.6)
Antenna mounting and downtilt kit included with antenna	91900318, 91900319 (middle bracket)
Net weight of the mounting and downtilt kit, lb (kg)	18 (8.2)
Range of mechanical up/ down tilt	-2° to 12°
Rated wind survival speed, mph (km/h)	150 (241)
Frontal, lateral & rear wind loading @ 150 km/h, lbf (N)	355 (1581), 152 (677), 355 (1581)
Equivalent flat plate @100 mph and Cd=2, sq. ft.	8.17



Ordering Information	
Antenna Model	Description
MX06FRO840-02	8F X- Pol HEX FRO 40° 2-12°/ 0-9° RET, 4.3-10 & SBT
Optional Accessories	
992100-CA030-SC	Optional AISG jumper cable, M/F, 3.0 meters
PCU-1000	Primary control unit, USB



**Verizon Wireless • Proposed Base Station (Site No. 273566 “Berkeley Hills”)  
Euclid Avenue • Berkeley, California**

**Supplemental Information for  
Review by City Planner**

Underlying RF Exposure Report: dated October 17, 2018

RE EME STUDY DATA			Uncontrolled				Controlled			
			Subject Equipment		Accumulative Equipment		Subject Equipment		Accumulative Equipment	
			Power density mW/cm <sup>2</sup>	% FCC limit	Power density mW/cm <sup>2</sup>	% FCC limit	Power density mW/cm <sup>2</sup>	% FCC limit	Power density mW/cm <sup>2</sup>	% FCC limit
Subject structure	Base horizontal plane <sup>(1)</sup>	In front	0.32	60						
		Behind								
	Horizontal planes within 12 ft	Above								
		Below								
	Roof surface (main)									
Adjacent locations	Any structure within 30 ft	___ ft								

NOTES: <sup>(1)</sup> Defined as the ground

October 17, 2018



# PLANNING & DEVELOPMENT

Land Use Planning, 1947 Center Street, Berkeley, CA 94704  
Tel: 510.981.7410 TDD: 510.981.6903 Fax: 510.981.7420 Email: [Planning@CityofBerkeley.info](mailto:Planning@CityofBerkeley.info)

## TABULATION FORM

Project Address: EBMUD Berryman Reservoir @ Euclid Ave & Codomices Rd Date: 12/06/2018

Applicant's Name: Verizon Wireless by Ridge Communications, Inc. Attn: David Haddock

Zoning District R-1H

Please print in ink the following numerical information for your Administrative Use Permit, Use Permit, or Variance application:

	<i>Existing</i>	<i>Proposed</i>	<i>Permitted/ Required</i>
<b>Units, Parking Spaces &amp; Bedrooms</b>			
Number of Dwelling Units (#)	0	0	
Number of Parking Spaces (#)			
Number of Bedrooms (#) (R-1, R-1A, R-2, R-2A, and R-3 only)	0	0	
<b>Yards and Height</b>			
Front Yard Setback (Feet)			
Side Yard Setbacks: (facing property)			
Left: (Feet)			
Right: (Feet)			
Rear Yard Setback (Feet)			
Building Height* (# Stories)			
Average* (Feet)			
Maximum* (Feet)			
<b>Areas</b>			
Lot Area (Square-Feet)			
Gross Floor Area* (Square-Feet)			
Total Area Covered by All Floors			
Building Footprint* (Square-Feet)			
Total of All Structures			
Lot Coverage* (%) (Footprint/Lot Area)			
Useable Open Space* (Square-Feet)			
Floor Area Ratio* Non-Residential only (Except ES-R)			

\*See Definitions – Zoning Ordinance Title 23F.

Revised: 05/15



# PLANNING & DEVELOPMENT

Land Use Planning, 1947 Center Street, Berkeley, CA 94704  
Tel: 510.981.7410 TDD: 510.981.6903 Fax: 510.981.7420 Email: [Planning@CityofBerkeley.info](mailto:Planning@CityofBerkeley.info)

DATE STAMP HERE

## ZONING USE QUESTIONNAIRE

Property Address EBMUD Berryman Reservoir, Berkeley, CA 94708 Permit # \_\_\_\_\_

Applicant Name Verizon Wireless by Ridge Communications, Inc.- David Haddock Phone # 916-420-5802

Name of Property Owner (if different from applicant) East Bay Municipal Utility District Phone # \_\_\_\_\_

Proposed Use Wireless Telecommunications Facility Previous Use Water Reservoir

Describe your business: Wireless Communications

Does your business include the sale of: Drug Paraphernalia?  Tobacco?  Alcohol  Medical Marijuana?

What are adjacent uses (sides and rear?) Utility

Is this an existing building? Yes \_\_\_\_\_ No XX

If yes, has a Change of Occupancy Inspection been made by the Building and Safety Division?

Yes \_\_\_\_\_ No \_\_\_\_\_

What changes will be made to the building? \_\_\_\_\_

List days and hours of operation: Monday - Thursday: 24/7 Friday: 24/7  
Saturday: 24/7 Sunday: 24/7

Is the transaction contingent on obtaining a Use Permit? Yes X No \_\_\_\_\_ Explain Lease requires permits

How many employees will you have (including yourself)? Total N/A Per Shift N/A

How many customers do you expect at one time? N/A When will be your busiest hours? N/A

Is there an existing parking lot? Yes \_\_\_\_\_ No XX Do you share it with any other use? \_\_\_\_\_

Will you provide parking for customers? Yes \_\_\_\_\_ No X- N/A How many spaces? \_\_\_\_\_

Will you provide parking for employees? Yes \_\_\_\_\_ No X- N/A How many spaces? \_\_\_\_\_

Will parking be on the same property? Yes \_\_\_\_\_ No X- N/A If not, explain: \_\_\_\_\_

From what area do you expect the majority of your customers: No Customers - unmanned facility

Immediate neighborhood \_\_\_\_\_ Several neighborhoods \_\_\_\_\_ Passing Traffic \_\_\_\_\_ City-wide \_\_\_\_\_ Larger area \_\_\_\_\_

Will you be selling any alcoholic beverages for off-site consumption? Yes \_\_\_\_\_ No X

If yes, have you applied for an off-sale license from the State Department of Alcoholic Beverage Control?

Yes \_\_\_\_\_ No \_\_\_\_\_

Will you be selling beverages in containers subject to California Redemption Value (CRV)?

Yes \_\_\_\_\_ No X

ADDRESS: EBMUD Berryman Reservoir, Berkeley, CA 94708

DATE: 12/14/2018

**ESTABLISHMENTS SERVING FOOD OR DRINK**

Proposed seating (#) \_\_\_\_\_ Maximum allowable capacity under Building Code (#) \_\_\_\_\_

What type of cooking will you feature? \_\_\_\_\_

How will cooking odors be controlled? \_\_\_\_\_

What arrangement will be made for recycling? \_\_\_\_\_

**Alcoholic Beverages**

Will you serve beer? \_\_\_\_\_ Wine? \_\_\_\_\_ Liquor? \_\_\_\_\_

With meals only? \_\_\_\_\_ Separately? \_\_\_\_\_ At a bar? \_\_\_\_\_

Have you applied for a license from Department of Alcoholic Beverage Control? Yes \_\_\_\_\_ No \_\_\_\_\_

**Music**

Will you provide live entertainment? Yes \_\_\_\_\_ No \_\_\_\_\_ Of what type? \_\_\_\_\_

Will there be live music? \_\_\_\_\_ Recorded? \_\_\_\_\_ Amplified at what level? \_\_\_\_\_

Will sound control be provided? Yes \_\_\_\_\_ No \_\_\_\_\_

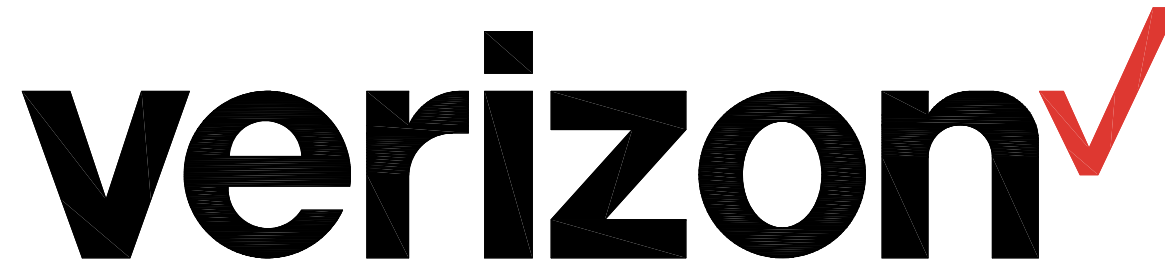
What are the assurances that sound control will be adequate? \_\_\_\_\_

When will sound controls be installed? \_\_\_\_\_

Who is responsible for assuring that the business operates as described above?

[PRINT NAME] Verizon Wireless

Signature  Date 12/14/18



**BERKELEY HILLS**  
EBMUD BERRYMAN RESERVOIR, BERKELEY, CA 94708  
LOCATION NUMBER: 273566

VERIZON WIRELESS EQUIPMENT ENGINEER: SIGNATURE _____ DATE _____	VERIZON WIRELESS REAL ESTATE: SIGNATURE _____ DATE _____
VERIZON WIRELESS CONSTRUCTION: SIGNATURE _____ DATE _____	VERIZON WIRELESS RF ENGINEER: SIGNATURE _____ DATE _____
PROPERTY OWNER: SIGNATURE _____ DATE _____	RIDGE COMMUNICATIONS - LEASING SIGNATURE _____ DATE _____
RIDGE COMMUNICATIONS - CONSTRUCTION SIGNATURE _____ DATE _____	RIDGE COMMUNICATIONS - ZONING SIGNATURE _____ DATE _____

**BERKELEY HILLS**

273566  
EBMUD BERRYMAN RESERVOIR  
BERKELEY, CA 94708



2785 MITCHELL DRIVE, BLDG 9  
WALNUT CREEK, CA 94598

**PROJECT DESCRIPTION**

A (P) VERIZON WIRELESS UNMANNED TELECOMMUNICATION FACILITY CONSISTING OF INSTALLING:

- (P) 50'-0" HIGH MONOPINE W/ (6) (P) VERIZON WIRELESS ANTENNAS
- (6) (P) RRU UNITS
- (2) (P) SURGE SUPPRESSORS, (1) Ⓞ EQUIPMENT & (1) Ⓞ ANTENNAS
- (P) VERIZON WIRELESS 25'-0"X20'-0" (500 SQ FT) EQUIPMENT LEASE AREA
- (P) VERIZON WIRELESS (177 SQ FT) MONOPINE LEASE AREA
- (P) GPS ANTENNA
- (P) VERIZON WIRELESS 30KW DIESEL GENERATOR ON 132 GALLON UL 2085 RATED FUEL TANK

**VICINITY MAP**



**CODE COMPLIANCE**

ALL WORK & MATERIALS SHALL BE PERFORMED & INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

- 2016 CALIFORNIA ADMINISTRATIVE CODE, PART 1, TITLE 24 C.C.R.
- 2016 CALIFORNIA BUILDING CODE (CBC), PART 2, VOLUME 1&2, TITLE 24 C.C.R. (2015 INTERNATIONAL BUILDING CODE AND 2016 CALIFORNIA AMENDMENTS)
- 2016 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 C.C.R. (2014 NATIONAL ELECTRICAL CODE AND 2016 CALIFORNIA AMENDMENTS)
- 2016 CALIFORNIA MECHANICAL CODE (CMC) PART 4, TITLE 24 C.C.R. (2015 UNIFORM MECHANICAL CODE AND 2016 CALIFORNIA AMENDMENTS)
- 2016 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 C.C.R. (2015 UNIFORM PLUMBING CODE AND 2016 CALIFORNIA AMENDMENTS)
- 2016 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24 C.C.R.
- 2016 CALIFORNIA FIRE CODE, PART 9, TITLE 24 C.C.R. (2015 INTERNATIONAL FIRE CODE AND 2016 CALIFORNIA AMENDMENTS)
- 2016 CALIFORNIA GREEN BUILDING STANDARDS CODE, PART 11, TITLE 24 C.C.R.
- 2016 CALIFORNIA REFERENCED STANDARDS, PART 12, TITLE 24 C.C.R.

ALONG WITH ANY OTHER APPLICABLE LOCAL & STATE LAWS AND REGULATIONS

DISABLED ACCESS REQUIREMENTS

THIS FACILITY IS UNMANNED & NOT FOR HUMAN HABITATION. DISABLED ACCESS & REQUIREMENTS ARE NOT REQUIRED IN ACCORDANCE WITH CALIFORNIA STATE BUILDING CODE, TITLE 24 PART 2, SECTION 11B-203.4

**PROJECT INFORMATION**

SITE NAME:	BERKELEY HILLS	SITE #:	273566
COUNTY:	ALAMEDA	JURISDICTION:	CITY BERKELEY
APN:	060-2468-001-04	POWER:	PG&E
SITE ADDRESS:	EBMUD BERRYMAN RESERVOIR BERKELEY, CA 94708	FIBER:	AT&T
CURRENT ZONING:	R-1H (SINGLE FAMILY RESIDENTIAL)		
CONSTRUCTION TYPE:	V-B		
OCCUPANCY TYPE:	U, (UNMANNED COMMUNICATIONS FACILITY)		
PROPERTY OWNER:	EAST BAY MUNICIPAL UTILITY DISTRICT P.O. BOX 24055 OAKLAND, CA 94623 CONTACT: ROB KORN (510) 287-1246 ROBERT.KORN@EBMUD.COM		
APPLICANT:	VERIZON WIRELESS 2785 MITCHELL DRIVE, BLDG 9 WALNUT CREEK, CA 94598		
SITE ACQUISITION COMPANY:	RIDGE COMMUNICATION, INC (925)498-2340 12667 ALCOSTA BLVD, SUITE 175 SAN RAMON, CA 94583		
LEASING CONTACT:	ATTN: DAVID HADDOCK (916) 420-5802 DAVID.HADDOCK@RIDGECOMMUNICATE.COM		
ZONING CONTACT:	ATTN: DAVID HADDOCK (916) 420-5802 DAVID.HADDOCK@RIDGECOMMUNICATE.COM		
CONSTRUCTION CONTACT:	ATTN: KEITH SCHMID (408) 679-1141 KEITH.SCHMID@RIDGECOMMUNICATE.COM		

**DRIVING DIRECTIONS**

FROM: 2785 MITCHELL DRIVE, BLDG 9, WALNUT CREEK, CA 94598  
TO: EBMUD BERRYMAN RESERVOIR, BERKELEY, CA 94708

1. HEAD NORTHEAST ON MITCHELL DR TOWARD OAK GROVE RD 30 FT
2. TURN RIGHT ONTO OAK GROVE RD 0.4 MI
3. TURN RIGHT ONTO YGNACIO VALLEY RD 3.4 MI
4. YGNACIO VALLEY RD TURNS RIGHT AND BECOMES HILLSIDE AVE 0.2 MI
5. TURN RIGHT ONTO THE 24 W RAMP TO OAKLAND 1.2 MI
6. CONTINUE ONTO CA-24 W/HWY 24 W 8.1 MI
7. KEEP LEFT AT THE FORK TO CONTINUE ON CA-24 W 1.4 MI
8. TAKE EXIT 5B TO MERGE ONTO CA-13 N TOWARD BERKELEY 0.4 MI
9. MERGE ONTO CA-13 N 1.0 MI
10. TURN RIGHT ONTO CLAREMONT AVE 164 FT
11. TURN LEFT ONTO CLAREMONT BLVD 0.2 MI
12. CONTINUE ONTO BELROSE AVE 0.1 MI
13. BELROSE AVE TURNS LEFT AND BECOMES DERBY ST 0.2 MI
14. TURN RIGHT ONTO WARRING ST 0.2 MI
15. SLIGHT LEFT ONTO PIEDMONT AVE 0.2 MI
16. AT THE TRAFFIC CIRCLE, CONTINUE STRAIGHT TO STAY ON PIEDMONT AVE 0.4 MI
17. CONTINUE ONTO GAYLEY RD 0.3 MI
18. CONTINUE STRAIGHT ONTO LA LOMA AVE 0.1 MI
19. TURN LEFT ONTO LE CONTE AVE 0.2 MI
20. TURN RIGHT AT THE 2ND CROSS STREET ONTO EUCLID AVE 0.5 MI

END AT: EBMUD BERRYMAN RESERVOIR, BERKELEY, CA 94708

ESTIMATED TIME: 29 MINUTES ESTIMATED DISTANCE: 18.4 MILES

VERIZON WIRELESS EMERGENCY  
CONTACT NUMBER TO BE POSTED AT  
SITE: VERIZON NOC#: (800) 264-6620

**SHEET INDEX**

SHEET	DESCRIPTION	REV
T-1	TITLE SHEET	-
C-1	TOPOGRAPHIC SURVEY	-
C-2	TOPOGRAPHIC SURVEY	-
C-3	TOPOGRAPHIC SURVEY	-
A-1	SITE PLAN	-
A-2	ENLARGED SITE PLAN	-
A-3	EQUIPMENT PLAN & DETAILS	-
A-4	ANTENNA PLAN & DETAILS	-
A-5	ELEVATION	-
A-6	ELEVATION	-

**Streamline Engineering**  
and Design, Inc.

8445 Sierra College Blvd, Suite E Granite Bay, CA 95661  
Contact: Larry Houghtry Phone: 916-275-4190  
E-Mail: larry@streamlineeng.com Fax: 916-660-1941

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PRELIMINARY:  
NOT FOR  
CONSTRUCTION

KEVIN R. SORENSEN  
S4469

**ISSUE STATUS**

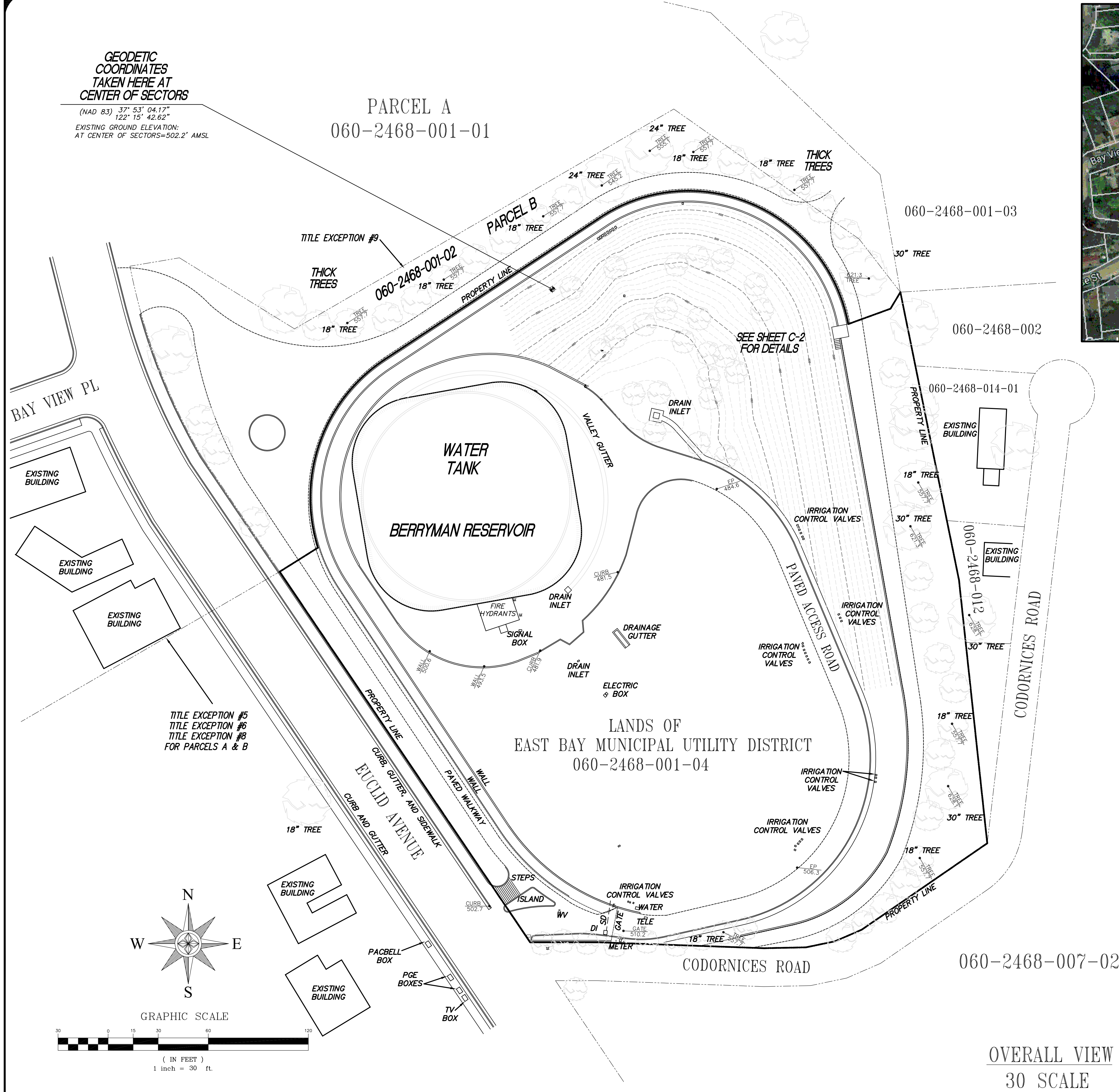
Δ	DATE	DESCRIPTION	REV.
	10/27/17	ZD 90%	D.G.
	12/11/17	CSR RED LINES	C.C.
	02/06/18	ZD 100%	D.L.
	03/13/18	CLIENT REV	D.G.

DRAWN BY: D. GARCIA  
CHECKED BY: J. GRAY  
APPROVED BY: -  
DATE: 03/13/18

**SHEET TITLE:**  
TITLE  
**SHEET NUMBER:**  
T-1

**GEODETTIC COORDINATES TAKEN HERE AT CENTER OF SECTORS**  
(NAD 83) 37° 53' 04.17"  
122° 15' 42.62"  
EXISTING GROUND ELEVATION:  
AT CENTER OF SECTORS=502.2' AMSL

**PARCEL A**  
060-2468-001-01



**VICINITY MAP**  
NTS

**PROPERTY INFORMATION**

OWNER: EAST BAY MUNICIPAL UTILITY DISTRICT  
ADDRESS: 375 11TH STREET  
OAKLAND, CA 94607  
SITE: BERKELEY HILLS  
ERMUD BERRYMAN RESERVOIR  
BERKELEY, CA 94708  
ASSESSOR'S PARCEL NUMBER: 060-2468-001-04  
EXISTING GROUND ELEVATION: AT CENTER OF SECTORS=502.2' AMSL

**UTILITY NOTES**

ALL EASEMENTS CONTAINED IN SAID TITLE REPORT AFFECTING THE IMMEDIATE AREA SURROUNDING THE LEASE HAVE BEEN PLOTTED. SURVEYOR HAS NOT PERFORMED A SEARCH OF PUBLIC RECORDS TO DETERMINE ANY DEFECT IN TITLE ISSUED.  
THE BOUNDARY SHOWN HEREON IS PLOTTED FROM RECORD INFORMATION AND DOES NOT CONSTITUTE A BOUNDARY SURVEY OF THE PROPERTY.

**TITLE REPORT**

TITLE REPORT WAS PROVIDED BY FIRST AMERICAN TITLE INSURANCE COMPANY, DOC. NO: 5026900-5517887, DATED: AUGUST 15, 2017.  
THE ABOVE TITLE REPORT COVER ALL OF THE ORIGINAL PARCELS FROM THE 1920'S, NOT JUST THE APN:060-2468-001-04.

**SURVEYOR'S NOTES**

SURVEYOR DOES NOT GUARANTEE THAT ALL UTILITIES ARE SHOWN OR THEIR LOCATIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND DEVELOPER TO CONTACT U.S.A. AND ANY OTHER INVOLVED AGENCIES TO LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION. REMOVAL, RELOCATION AND/OR REPLACEMENT IS THE RESPONSIBILITY OF THE CONTRACTOR.

**BASIS OF BEARING**

BEARINGS SHOWN HEREON ARE BASED UPON U.S. STATE PLANE NAD83 COORDINATE SYSTEM STATE PLANE COORDINATE ZONE 3, DETERMINED BY GPS OBSERVATIONS.

**BENCHMARK**

ELEVATION ESTABLISHED FROM GPS DERIVED ORTHOMETRIC HEIGHTS, APPLYING GEOD 99 SEPARATIONS, CONSTRAINING TO NGS CONTROL STATION 'LUTZ' ELEVATION=450.0' (NAVD88)

**LESSOR'S LEGAL DESCRIPTION**

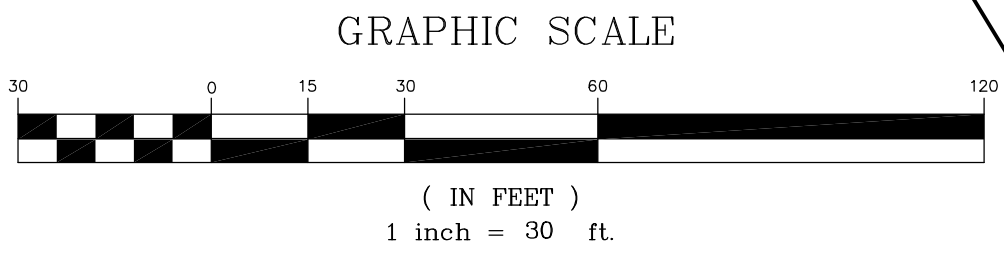
THE LAND IS SITUATED IN THE COUNTY OF ALAMEDA, STATE OF CALIFORNIA RECORDED MARCH 1, 1969 IN DOCUMENT NO. 079963.

**SURVEY DATE**

10/8/17

**LEGEND**

- P.O.B. POINT OF BEGINNING
- TFC TOP FACE CURB
- R/W RIGHT OF WAY
- GS GROUND SHOT
- DW ACCESS DRIVEWAY
- TOP TOP OF SLOPE
- SW SIDEWALK
- JP JOINT POLE
- FP FIRE HYDRANT
- LN LOT NUMBER
- GC GEODETTIC COORDINATES
- SE SPOT ELEVATION
- DA DISH ANTENNA
- WCV WATER CONTROL VALVE
- FH FIRE HYDRANT
- GC GUY CONDUCTOR
- FN FOUND AS NOTED
- PP POWER POLE
- LP LIGHT POLE
- ET ELECTRICAL TRANSFORMER
- ACU AIR CONDITIONING UNIT
- TP TELEPHONE PEDESTAL
- TV TELEPHONE VAULT
- TM TELEPHONE MANHOLE
- GV GAS VALVE
- GM GAS METER
- PL PROPERTY LINE
- CLF CHAIN LINK FENCE

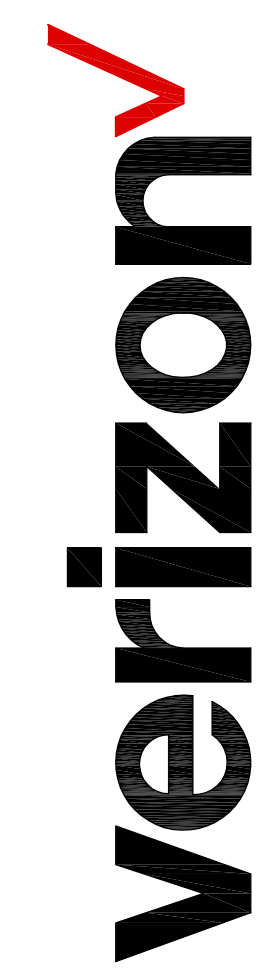


**OVERALL VIEW**  
30 SCALE

REV.	DATE	DESCRIPTION	ISSUE STATUS
1	10/15/2017	SITE PLAN	
2	1/29/2018	FINALIZE SURVEY	
3	5/7/2018	EASEMENTS PLOTTED	



**HAYES**  
Land Surveying  
And Mapping  
2830 MADRIGAN COURT  
CONCORD, CA 94518



2785 MITCHELL DRIVE  
WALNUT CREEK, CA. 94598  
OFFICE: 925-279-6000  
(925) 279-6333

**TOPOGRAPHIC SURVEY**  
**EXISTING CONDITIONS**

PSL# 273566  
BERKELEY HILLS  
ERMUD BERRYMAN RESERVOIR  
BERKELEY, CA 94708

**C-1**  
**SHEET 1 of 3**

PARCEL A  
060-2468-001-01

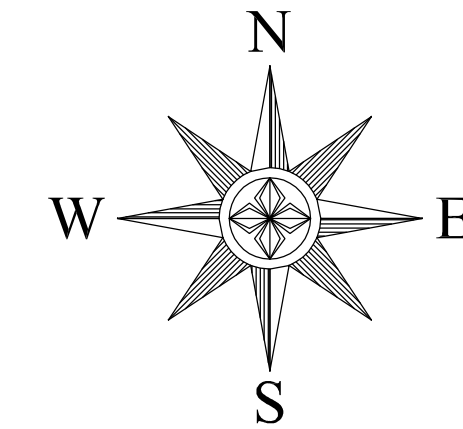
PARCEL B  
060-2468-001-02

GEODETIC  
COORDINATES  
TAKEN HERE AT  
CENTER OF SECTORS

(NAD 83) 37° 53' 04.17"  
122° 15' 42.62"

EXISTING GROUND ELEVATION:  
AT CENTER OF SECTORS=502.2' AMSL

THICK  
TREES



ISSUE STATUS

REV.	DATE	DESCRIPTION
1	10/15/2017	SITE PLAN
2	1/29/2018	FINALIZE SURVEY
3	5/20/2018	EASEMENTS PLOTTED



**HAYES**  
Land Surveying  
And Mapping  
2850 MIDCAMP COURT  
CONCORD, CA 94518



**verizon**

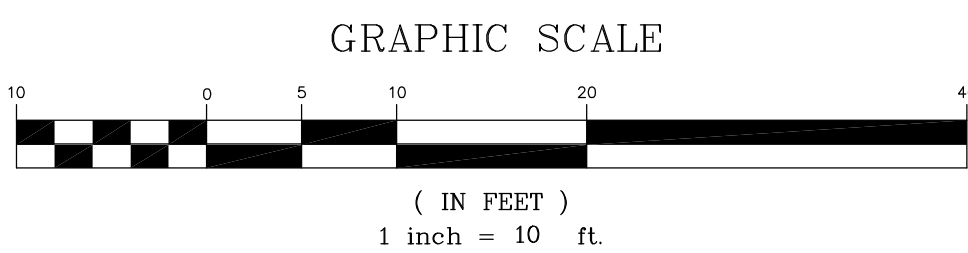
2785 MITCHELL DRIVE  
WALNUT CREEK, CA. 94598  
OFFICE: 925-279-6000  
(925) 279-6333

TOPOGRAPHIC SURVEY  
EXISTING CONDITIONS

PSI#273566  
BERKELEY HILLS  
EBMUD BERRYMAN RESERVOIR  
BERKELEY, CA 94708

C-2

SHEET 2 of 3



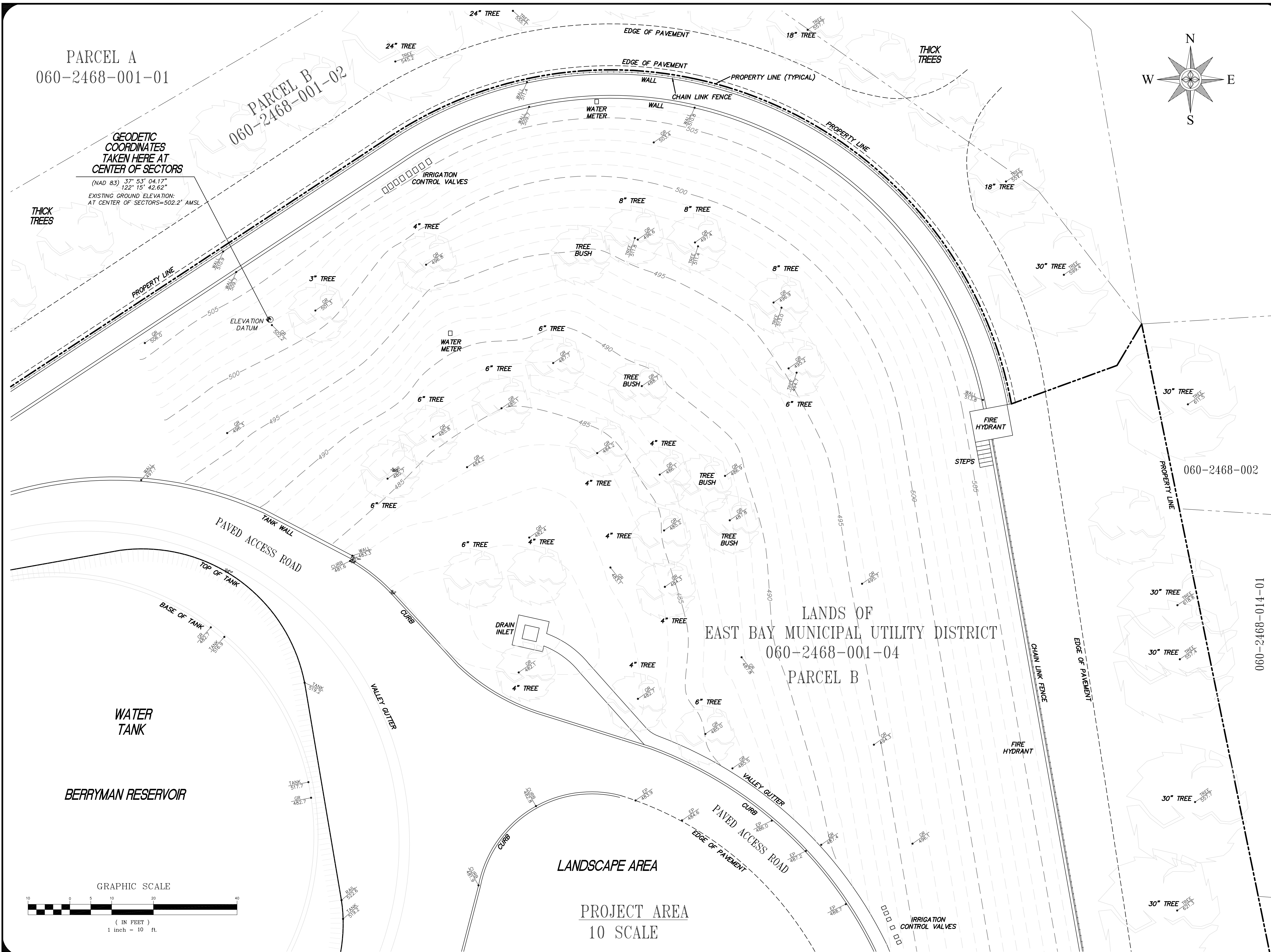
LANDSCAPE AREA

PROJECT AREA  
10 SCALE

LANDS OF  
EAST BAY MUNICIPAL UTILITY DISTRICT  
060-2468-001-04  
PARCEL B

060-2468-014-01

060-2468-002



DATE	DESCRIPTION	REV.
10/15/2017	SITE PLAN	
1/29/2018	FINALIZE SURVEY	
5/20/2018	EASEMENTS PLOTTED	

**HAYES**  
Land Surveying  
And Mapping  
2850 MADISON COURT  
CONCORD, CA 94518



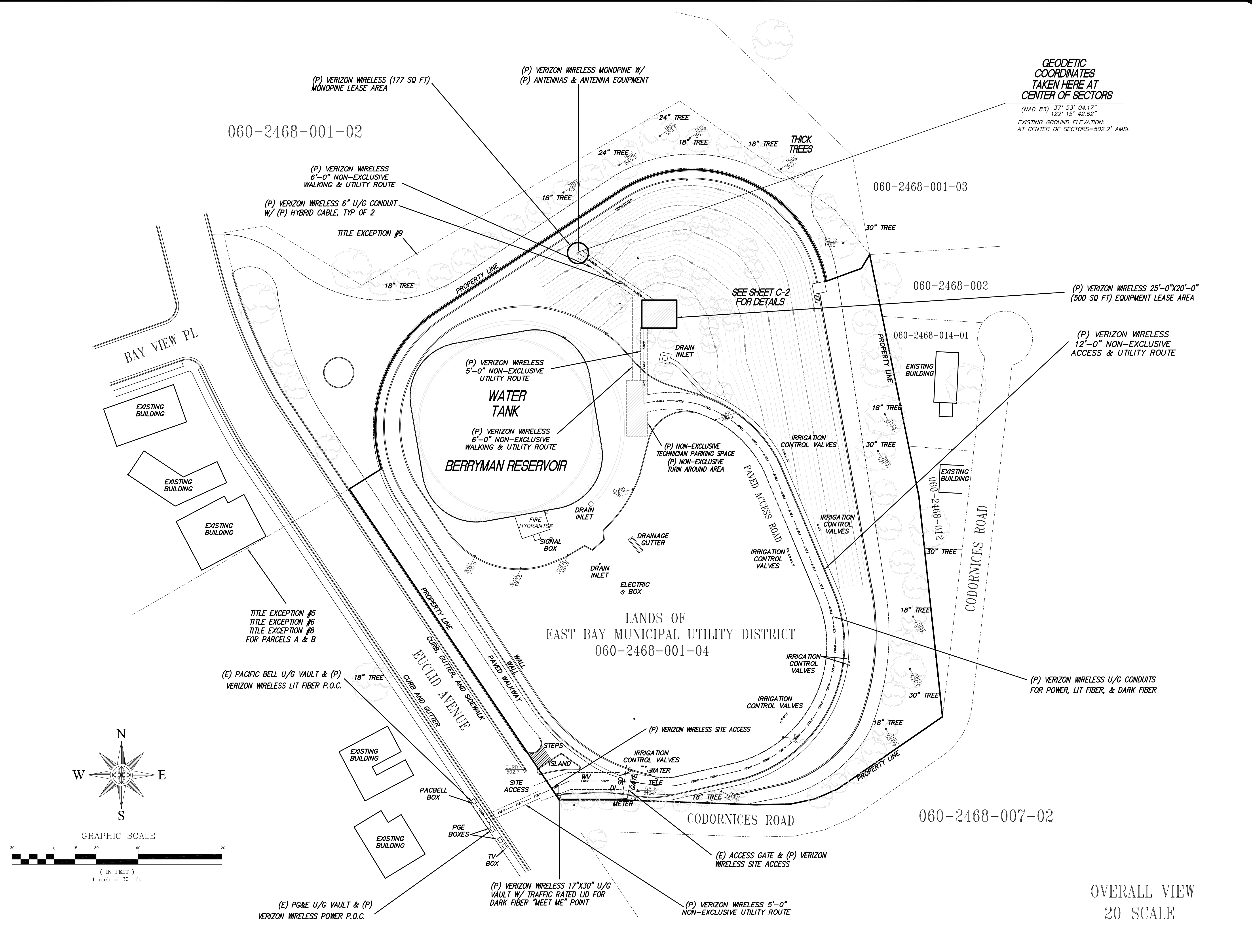
**verizon**  
2785 MITCHELL DRIVE  
WALNUT CREEK, CA. 94598  
OFFICE: 925-279-6000  
(925) 279-6333

**TOPOGRAPHIC SURVEY  
EXISTING CONDITIONS**  
PSL#273566  
BERKELEY HILLS  
EBMUD BERRYMAN RESERVOIR  
BERKELEY, CA 94708

**C-3**  
SHEET 3 of 3

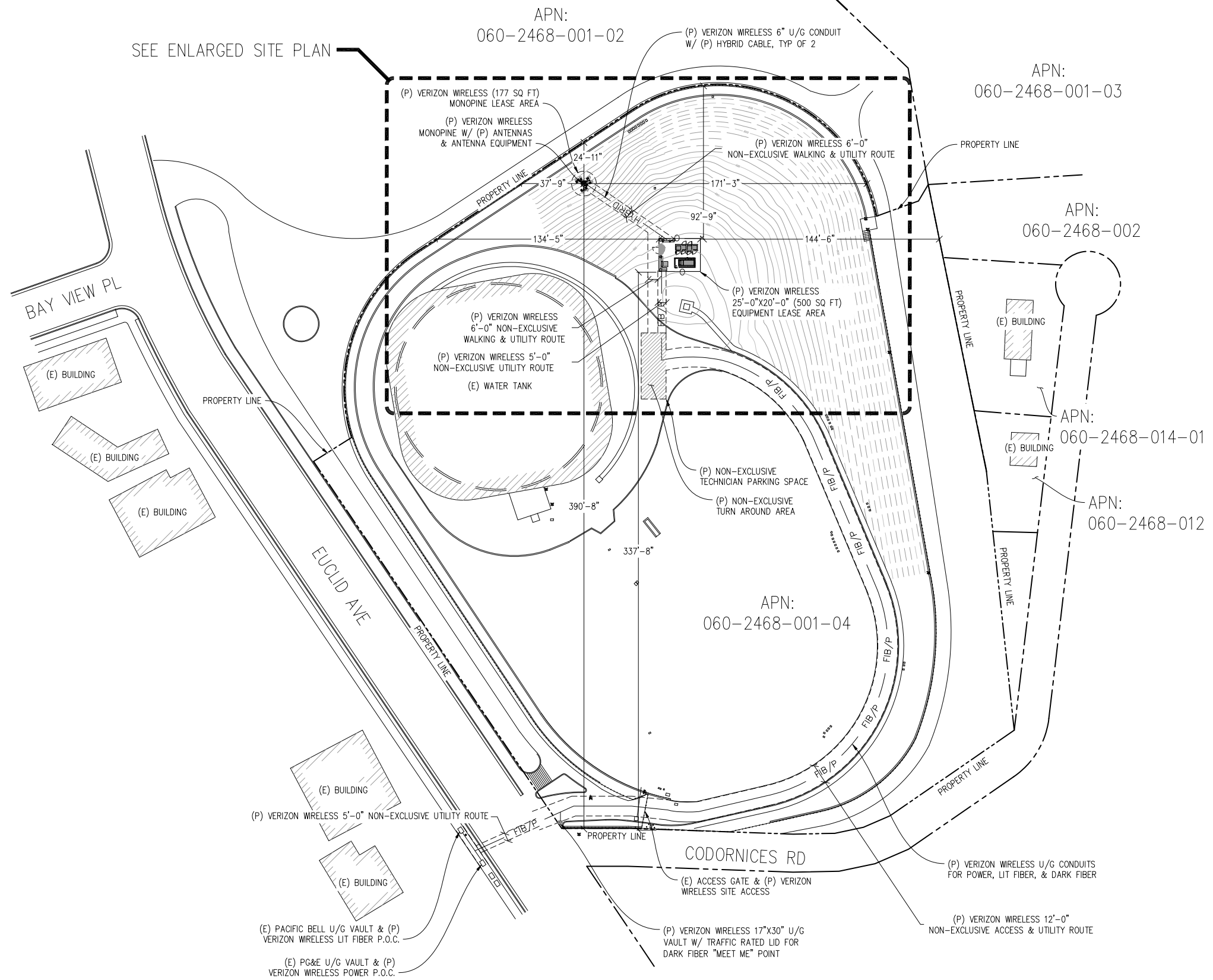
**GEODETIC  
COORDINATES  
TAKEN HERE AT  
CENTER OF SECTORS**

(NAD 83) 37° 53' 04.17"  
122° 15' 42.62"  
EXISTING GROUND ELEVATION:  
AT CENTER OF SECTORS=502.2' AMSL



OVERALL VIEW  
20 SCALE





VERIZON WIRELESS EMERGENCY  
CONTACT NUMBER TO BE POSTED AT  
SITE: VERIZON NOC#: (800) 264-6620



**SITE PLAN**

1" = 30'-0"



**CABLE LENGTHS:**

POWER = APPROX 624'  
LIT FIBER = APPROX 620'  
DARK FIBER = APPROX 558'  
HYBRID = APPROX 105'

**BERKELEY HILLS**

273566  
EBMUD BERRYMAN RESERVOIR  
BERKELEY, CA 94708



2765 MITCHELL DRIVE, BLDG 9  
WALNUT CREEK, CA 94598

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Contact: Larry Houghtby Phone: 916-276-4180  
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CONSTRUCTION

KEVIN R. SORENSEN  
S4469

**ISSUE STATUS**

Δ	DATE	DESCRIPTION	REV.
	10/27/17	ZD 90%	D.G.
	12/11/17	CSR RED LINES	C.C.
	02/06/18	ZD 100%	D.L.
	03/13/18	CLIENT REV	D.G.
	-	-	-
	-	-	-

DRAWN BY: D. GARCIA

CHECKED BY: J. GRAY

APPROVED BY: -

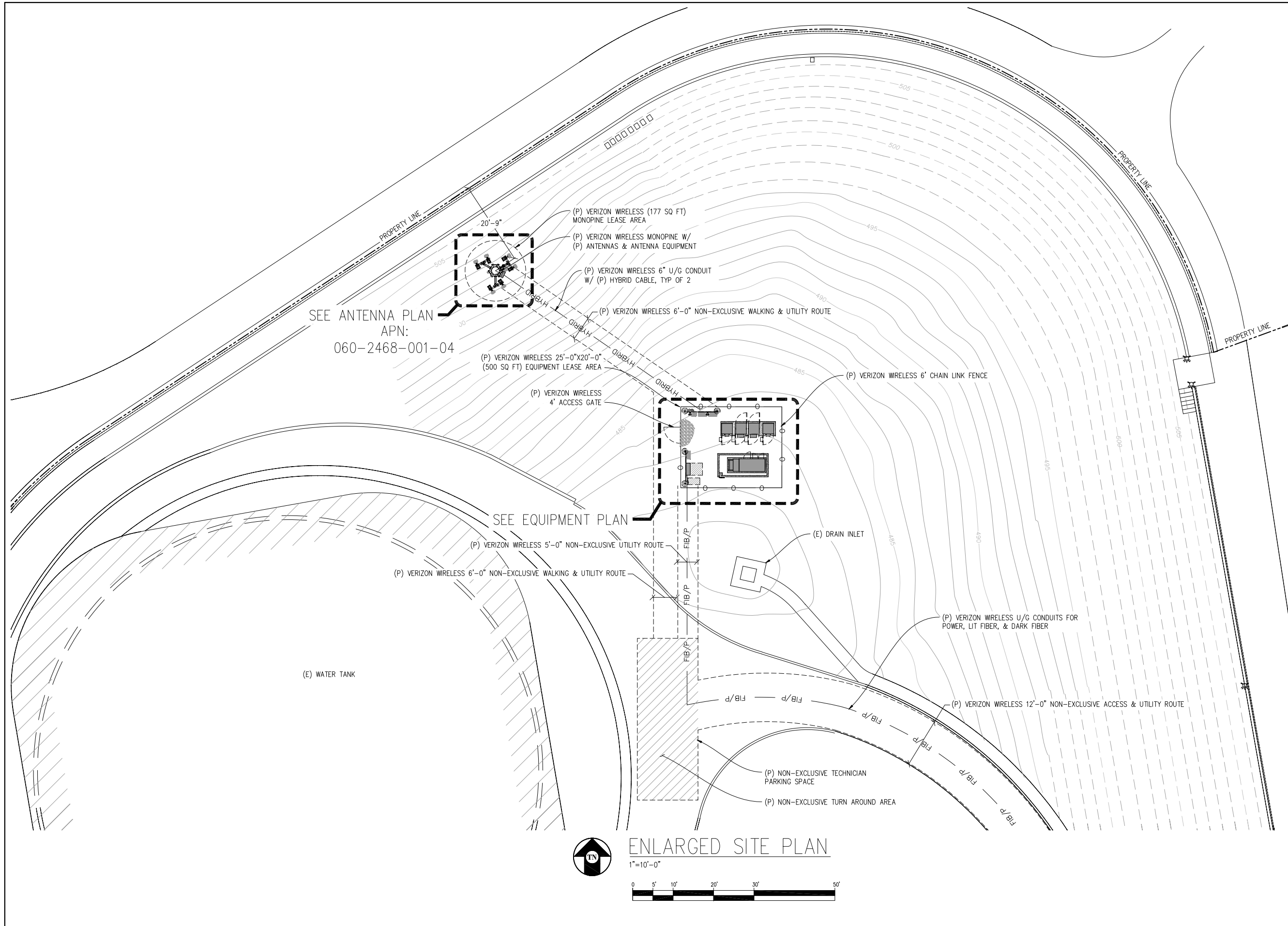
DATE: 03/13/18

**SHEET TITLE:**

SITE PLAN

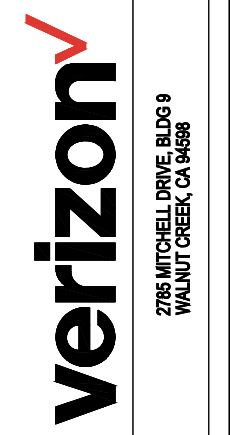
**SHEET NUMBER:**

A-1



**BERKELEY HILLS**

273566  
EBMUD BERRYMAN RESERVOIR  
BERKELEY, CA 94708



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8445 Sierra College Blvd, Suite E Granite Bay, CA 95661  
Contact: Larry Houghton Phone: 916-276-4100  
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	03/13/18	CLIENT REV	D.G.
	-	-	-
	-	-	-

DRAWN BY: D. GARCIA  
CHECKED BY: J. GRAY  
APPROVED BY: -  
DATE: 03/13/18

SHEET TITLE:  
ENLARGED SITE PLAN  
SHEET NUMBER:  
**A-2**

**BERKELEY HILLS**

273566  
EBMUD BERRYMAN RESERVOIR  
BERKELEY, CA 94708

**verizon**

2785 MITCHELL DRIVE, BLDG 9  
WALNUT CREEK, CA 94598

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and Design, Inc.

8445 Sierra College Blvd, Suite E Granite Bay, CA 95661  
Contact: Larry Houghton Phone: 916-276-4190  
E-Mail: larry@streamlineeng.com Fax: 916-990-1941

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	-	-	-
	-	-	-

DRAWN BY: D. GARCIA

CHECKED BY: J. GRAY

APPROVED BY: -

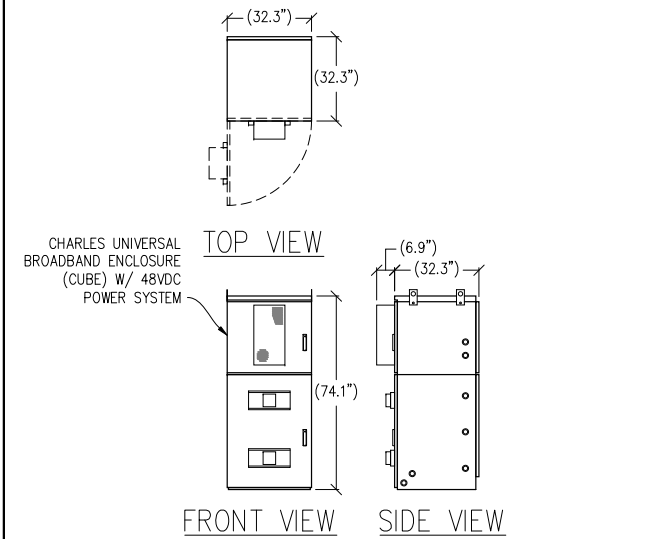
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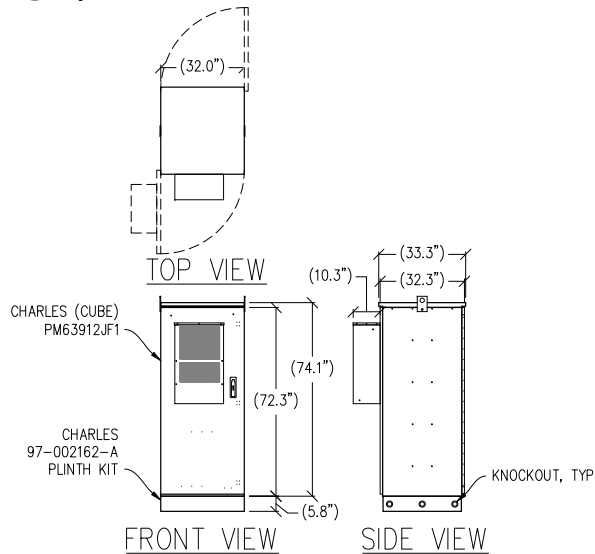
EQUIPMENT PLAN  
& DETAILS

SHEET NUMBER:

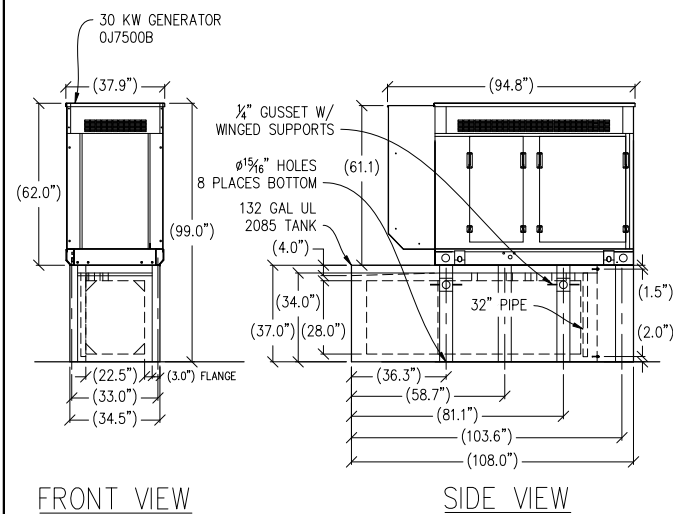
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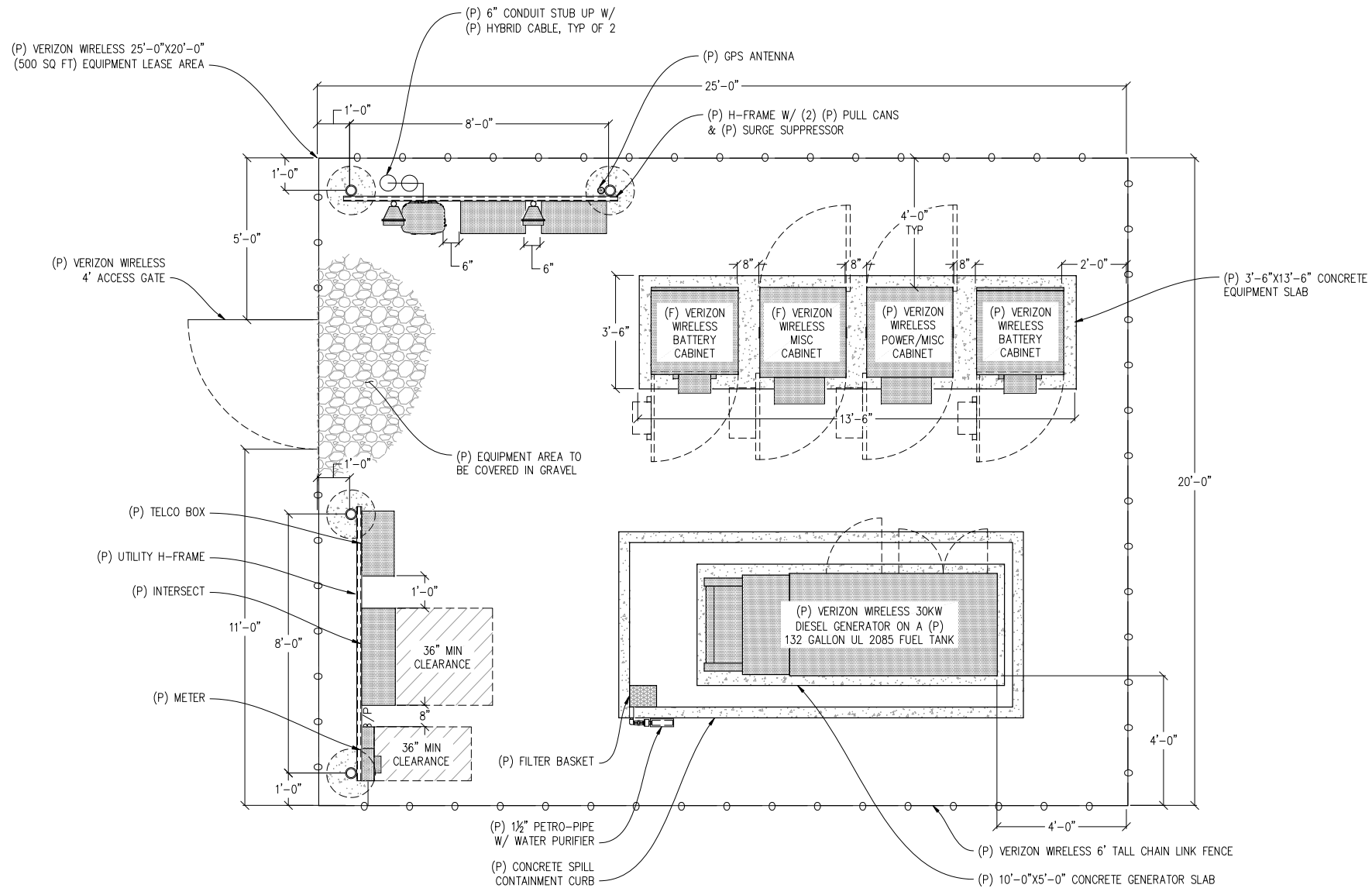
1 POWER CABINET DETAIL  
3/8"=1'-0" WEIGHT: 2,260 LBS



2 MISC CABINET DETAIL  
3/8"=1'-0" WEIGHT: 500 LBS

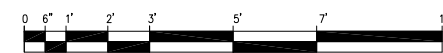


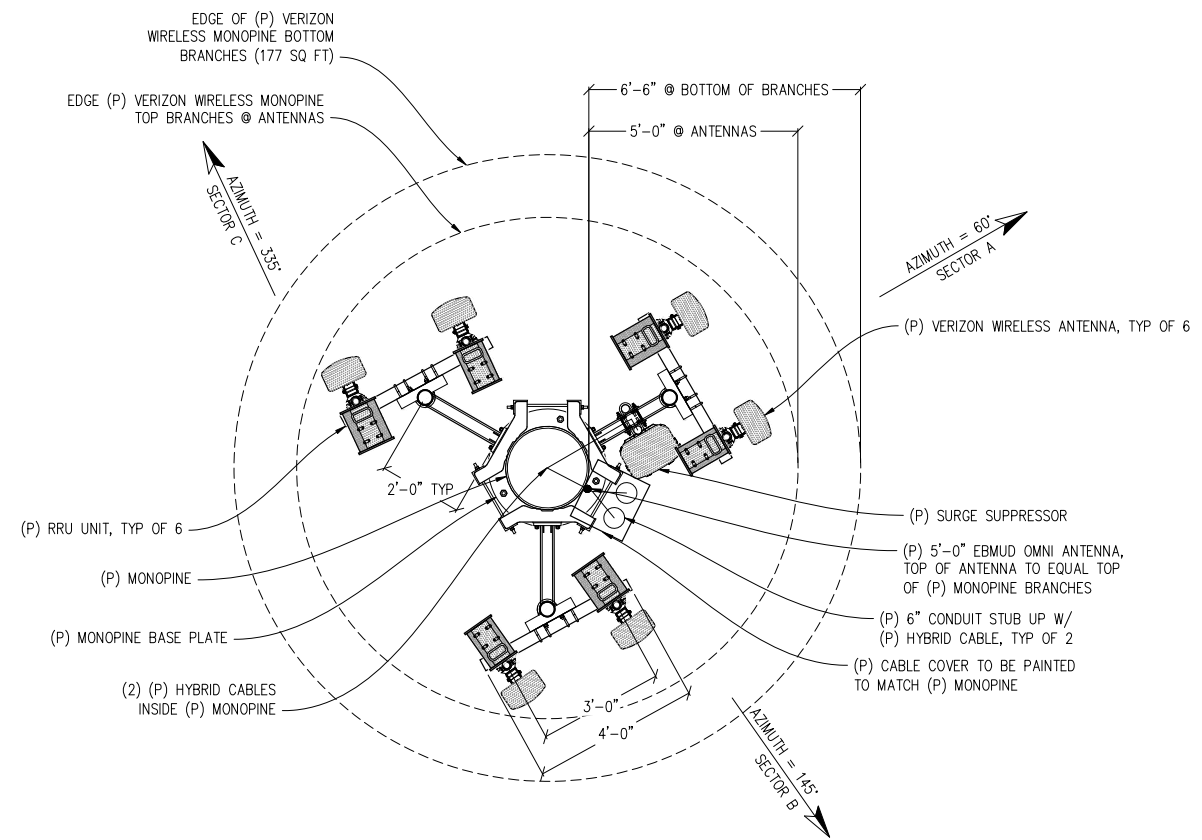
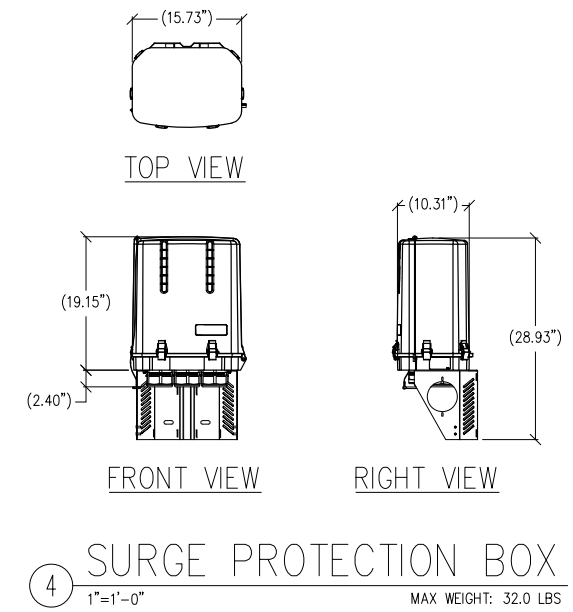
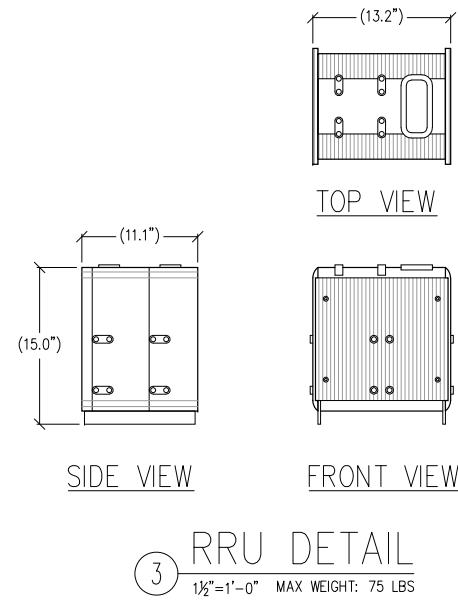
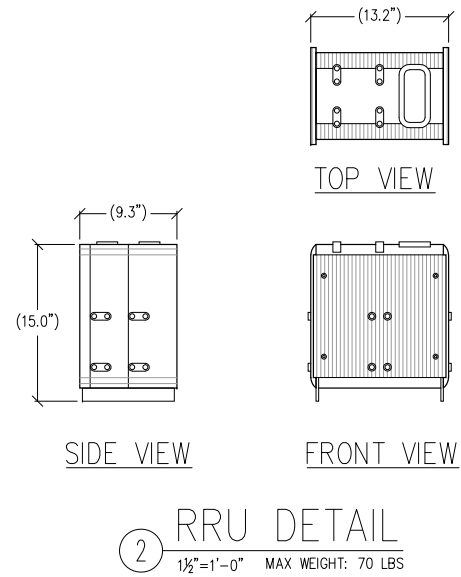
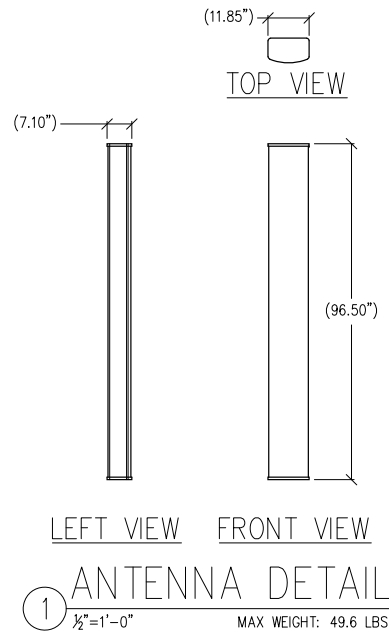
3 30KW GENERATOR DETAIL  
3/8"=1'-0" MAX WEIGHT: 3,230 LBS



EQUIPMENT PLAN

1/2"=1'-0"





ANTENNA PLAN  
1/2"=1'-0"

- NOTES:  
1. ALL (P) VERIZON WIRELESS ANTENNAS, ANTENNA MOUNTS, ANTENNA EQUIPMENT, EXPOSED CABLES, & (P) EBMUD OMNI ANTENNA TO BE PAINTED TO MATCH (P) MONOPINE & TO BE FULLY WITHIN (P) MONOPINE BRANCH RADIUS.  
2. ALL (P) VERIZON WIRELESS ANTENNAS TO BE COVERED IN MONOPINE SOCKS  
3. MONOPINE BRANCHES NOT SHOWN FOR CLARITY

**BERKELEY HILLS**  
273566  
EBMUD BERRYMAN RESERVOIR  
BERKELEY, CA 94708

**verizon**  
2765 MITCHELL DRIVE, BLDG 9  
WALNUT CREEK, CA 94598

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6445 Sierra College Blvd, Suite E Granite Bay, CA 95661  
Contact: Larry Houghby Phone: 916-275-4180  
E-Mail: larry@streamlineeng.com Fax: 916-890-1941  
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	-	-	-
	-	-	-

DRAWN BY: D. GARCIA  
CHECKED BY: J. GRAY  
APPROVED BY: -  
DATE: 03/13/18

**SHEET TITLE:**  
ANTENNA PLAN  
& DETAILS  
**SHEET NUMBER:**  
A-4

**BERKELEY HILLS**

273566  
EBMUD BERRYMAN RESERVOIR  
BERKELEY, CA 94708



2785 MITCHELL DRIVE, BLDG 9  
WALNUT CREEK, CA 94598

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	02/06/18	ZD 100%	D.L.
	03/13/18	CLIENT REV	D.G.
	-	-	-
	-	-	-

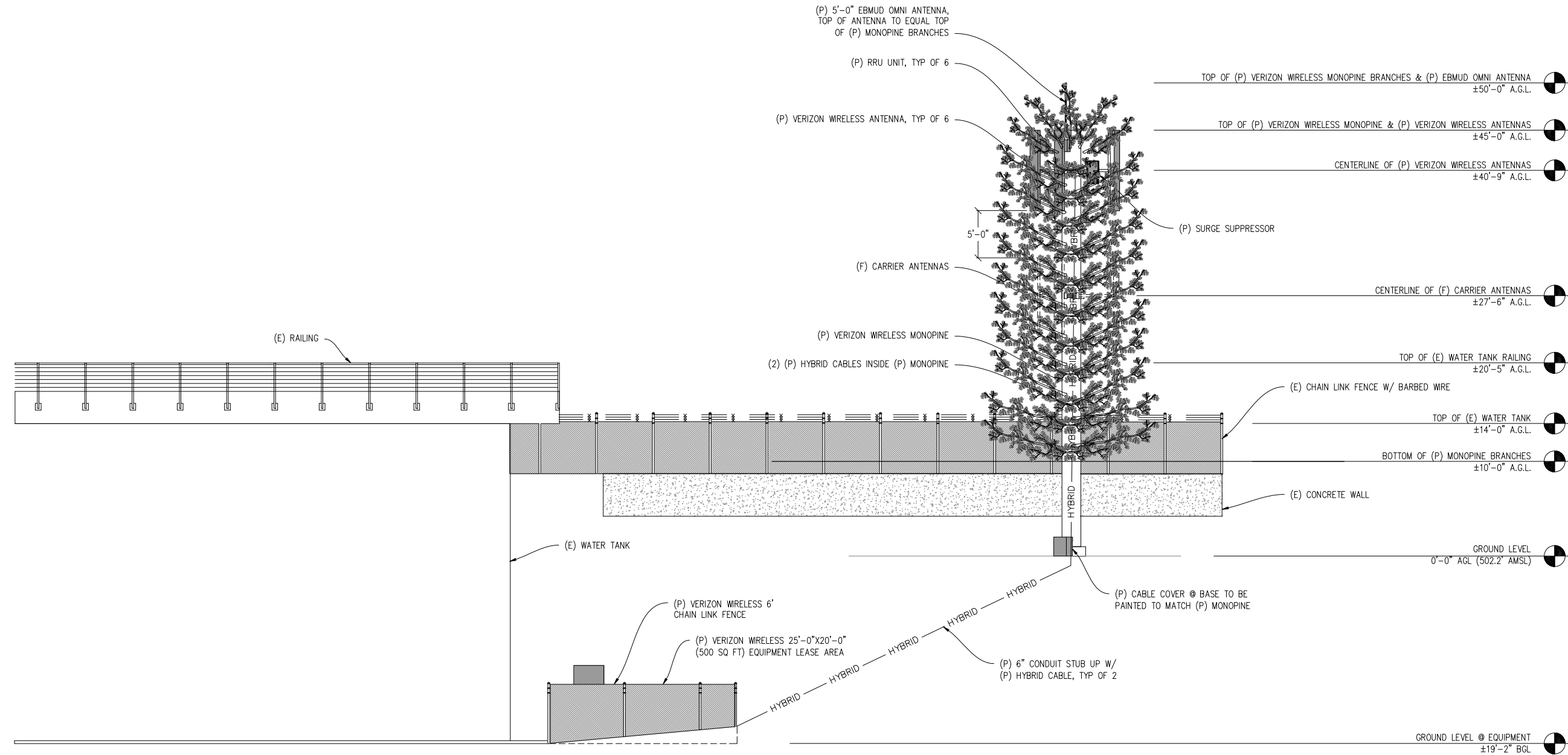
DRAWN BY: D. GARCIA  
CHECKED BY: J. GRAY  
APPROVED BY: -  
DATE: 03/13/18

SHEET TITLE:

ELEVATION

SHEET NUMBER:

**A-5**



**EAST ELEVATION**  
3/8"=1'-0"

NOTES:  
1. ALL (P) VERIZON WIRELESS ANTENNAS, ANTENNA MOUNTS, ANTENNA EQUIPMENT, EXPOSED CABLES, & (P) EBMUD OMNI ANTENNA TO BE PAINTED TO MATCH (P) MONOPINE & TO BE FULLY WITHIN (P) MONOPINE BRANCH RADIUS.  
2. ALL (P) VERIZON WIRELESS ANTENNAS TO BE COVERED IN MONOPINE SOCKS

**BERKELEY HILLS**

273566  
EBMUD BERRYMAN RESERVOIR  
BERKELEY, CA 94708



2785 MITCHELL DRIVE, BLDG 9  
WALNUT CREEK, CA 94598

**Streamline Engineering**  
and Design, Inc.

8445 Sierra College Blvd, Suite E Granite Bay, CA 95661  
Contact: Larry Houghby Phone: 916-276-4180  
E-Mail: larry@streamlineeng.com Fax: 916-960-1941

THIS PLAN AND SPECIFICATIONS, AS INSTRUMENTS OF SERVICE, ARE AND SHALL REMAIN THE PROPERTY OF STREAMLINE ENGINEERING AND DESIGN, INC. AND SHALL BE LOANED TO THE CLIENT FOR THE PROJECT ONLY. ANY REPRODUCTION, DISTRIBUTION, OR DISSEMINATION OF THIS PLAN OR SPECIFICATIONS SHALL BE THE LIABILITY OF THE USER. ANY PERSON OR ENTITY WHO VIOLATES THIS AGREEMENT SHALL BE HELD LIABLE FOR ALL DAMAGES AND COSTS INCURRED BY STREAMLINE ENGINEERING AND DESIGN, INC. ALL RIGHTS RESERVED.

PRELIMINARY:  
NOT FOR  
CONSTRUCTION

KEVIN R. SORENSEN  
S4469

ISSUE STATUS

Δ	DATE	DESCRIPTION	REV.
	10/27/17	ZD 90%	D.G.
	12/11/17	CSR RED LINES	C.C.
	02/06/18	ZD 100%	D.L.
	03/13/18	CLIENT REV	D.G.
	-	-	-
	-	-	-

DRAWN BY: D. GARCIA

CHECKED BY: J. GRAY

APPROVED BY: -

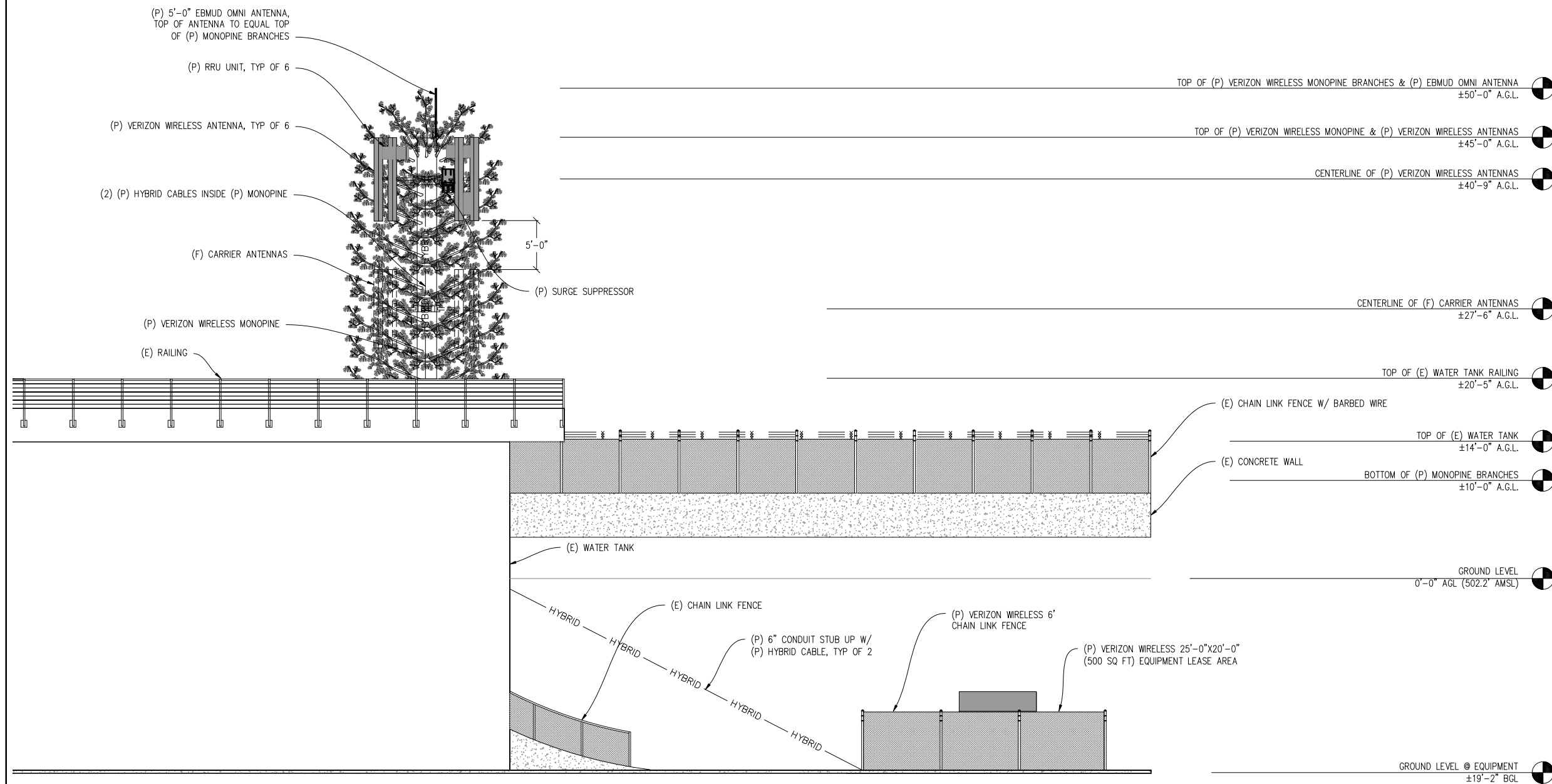
DATE: 03/13/18

SHEET TITLE:

ELEVATION

SHEET NUMBER:

A-6



**SOUTH ELEVATION**  
3/16" = 1'-0"

NOTES:  
1. ALL (P) VERIZON WIRELESS ANTENNAS, ANTENNA MOUNTS, ANTENNA EQUIPMENT, EXPOSED CABLES, & (P) EBMUD OMNI ANTENNA TO BE PAINTED TO MATCH (P) MONOPINE & TO BE FULLY WITHIN (P) MONOPINE BRANCH RADIUS.  
2. ALL (P) VERIZON WIRELESS ANTENNAS TO BE COVERED IN MONOPINE SOCKS



Planning & Development Department  
Land Use Planning Division

December 21, 2018

David Haddock  
Verizon Wireless by Ridge Communications, Inc.  
12919 Alcosta Street, #1  
San Ramon, CA 94563

Sent via email:  
[david.haddock@ridgecommunicate.com](mailto:david.haddock@ridgecommunicate.com)

RE: "0" Euclid Avenue, Application #ZP2018-0236

Use Permit for: New 50' high Monopine wireless facility with related equipment.

Dear applicant:

On behalf of the City of Berkeley, I would like to introduce myself as the project planner for the above referenced application. Staff from various City departments will be reviewing your application, including the Building and Safety, Land Use Planning and Transportation divisions, as well as other interested parties, to ensure that the project application is complete. If any questions arise, City staff will either contact you in writing or by phone at the number supplied on your application. Unless you inform us otherwise, you will be the primary contact during the application process

You can expect site visits by various staff members in the next couple of weeks. These visits will be from the public right-of-way, unless staff makes an appointment with you in advance. I will be contacting you within 30 days of your application date to follow-up with the status of the project and to request any additional information needed for your application to be deemed complete. Answers to frequently asked questions related to Use Permits, including "what is the process" and "how long does it take" can be found on the City's website at: <http://www.ci.berkeley.ca.us/contentdisplay.aspx?id=820>

Please note that due to staffing reductions and the level of permit activity, applicants should be prepared to expect longer processing times than in the past. The City has consultants available to expedite applications for an additional fee.

Please feel free to contact me if you are interested in using this service to expedite your application or if you have other questions or comments about your application. I can be reached by email at [lnawfal@cityofberkeley.info](mailto:lnawfal@cityofberkeley.info) or by phone at (510) 981-7424.

Please know that this application is subject to the Permits Streamlining Act, Government Code Section 65921, which (1) sets forth various time limits within which state and local government agencies must either approve or disapprove permits and (2) providing that these time limits may be extended once (and only once) by agreement between the parties.

I look forward to working with you.

Sincerely,

A handwritten signature in black ink, appearing to read "Loyal Nawfal".

Loyal Nawfal  
Associate Planner

**Verizon Wireless • Proposed Base Station (Site No. 273566 “Berkeley Hills”)  
EBMUD Berryman Reservoir • Berkeley, California**

**Statement of Hammett & Edison, Inc., Consulting Engineers**

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of Verizon Wireless, a personal telecommunications carrier, to evaluate the base station (Site No. 273566 “Berkeley Hills”) proposed to be located at EBMUD Berryman Reservoir in Berkeley, California, for compliance with appropriate guidelines limiting sound levels from the installation.

**Executive Summary**

Verizon proposes to install a new base station, consisting of equipment cabinets, an emergency generator, and antennas on a tall pole, at EBMUD Berryman Reservoir in Berkeley, California. Noise levels from the equipment operations are calculated to comply with the City’s limits.

**Prevailing Standards**

The City of Berkeley sets forth limits on sound levels in Section 13.40.050 (Exterior Noise Standards) of its Municipal Code, including the follow limits for noise lasting more than 30 minutes in any hour in the indicated zone:

<u>Zone</u>	<u>Time Period</u>	<u>Noise Limit</u>
R-1	“Day” 7 a.m. to 10 p.m.	55 dBA
	“Night” 10 p.m. to 7 a.m.	45 dBA
Commercial	“Day” 7 a.m. to 10 p.m.	65 dBA
	“Night” 10 p.m. to 7 a.m.	60 dBA

The more restrictive noise limits apply whenever adjacent parcels have different zoning. Section 13.40.500A.3. raises the acceptable noise limits to equal the existing, ambient levels, when those levels exceed the allowable levels from the table above. Section 13.40.050A.2. allows for higher sound levels of short duration, including +5 dBA for 15 minutes or less in any hour.

Section 13.40.080 exempts from the above standards the performance of emergency work, defined by §13.40.020 to include “work by private or public utilities to restore utility service,” such as the operation of the back-up power generator when commercial power is unavailable. Figure 1 attached describes the calculation methodology used to determine applicable noise levels for evaluation against the prevailing standard.

**General Facility Requirements**

Wireless telecommunications facilities (“cell sites”) typically consist of two distinct parts: the electronic base transceiver stations (“BTS” or “cabinets”) that are connected to traditional wired telephone lines, and the antennas that send wireless signals created by the BTS out to be received by individual subscriber units. The BTS are often located outdoors at ground level and are connected to



**Verizon Wireless • Proposed Base Station (Site No. 273566 “Berkeley Hills”)  
EBMUD Berryman Reservoir • Berkeley, California**

the antennas by coaxial cables. The BTS typically require environmental units to cool the electronics inside. Such cooling is often integrated into the BTS, although external air conditioning may be installed, especially when the BTS are housed within a larger enclosure.

Most cell sites have back-up battery power available, to run the base station for some number of hours in the event of a power outage. Many sites have back-up power generators installed, to run the station during an extended power outage.

**Site & Facility Description**

Based upon information provided by Verizon, including zoning drawings by Streamline Engineering and Design, Inc., dated March 13, 2018, that carrier proposes to place several equipment cabinets in a fenced compound to be constructed to the northeast of the municipal water tank located at the EBMUD Berryman Reservoir facility in Berkeley. For the purpose of this study, the four equipment cabinets within the compound with active cooling fans are assumed to be Charles Models: two CUBE-SS4C215XC1 and two CUBE-PM639.

A Generac Model SD030 back-up diesel generator, configured with the manufacturer’s Level 2A sound attenuated enclosure, is to be installed for emergency use in the event of an extended commercial power outage. The generator is typically operated with no load for a single 15-minute period once a week during daytime hours on a weekday, to maintain its readiness for emergency operation.

Several directional panel antennas are proposed to be installed on a tall pole to be sited about 55 feet northwest of the compound; this portion of the base station is passive, generating no noise. The subject and surrounding parcels are zoned “Residential,” although only parcels to the east, south, and west are of residential land use; the parcels to the north contain a public walkway and park. The nearest parcel with residential land use is about 140 feet to the east of the compound; parcels to the south and west are farther away.

**Ambient Noise Measurement**

The site was visited by Ms. Amelia Ngai, a qualified engineer employed by Hammett & Edison, Inc., around noon on December 6, 2018, a non-holiday weekday, to set in place a Larson Davis SoundTrack LXT Sound Level Meter (Serial No. 0005461), under current calibration by the manufacturer. The monitoring equipment was placed on the site’s property line fence near the nearest residential property line, as shown in Figure 2, and it was retrieved the following afternoon, to provide a full 24-hour period for analysis. The maximum measured hourly median ambient noise levels at that location during daytime and nighttime hours were 45.4 dBA during the day and 40.5 dBA at night.

**Verizon Wireless • Proposed Base Station (Site No. 273566 “Berkeley Hills”)  
EBMUD Berryman Reservoir • Berkeley, California**

**Study Results**

Information provided by the manufacturers gives the following maximum noise levels from the proposed equipment:

<u>Equipment Cabinets</u>	<u>Maximum Noise Level</u>	<u>Reference Distance</u>
(2) CUBE-SSA4C215XC1	67.3 dBA	1.5 meters
(2) CUBE-PM639	65 dBA	1.5 meters
Generac SD030 (no-load)	62 dBA	23 feet

The maximum calculated noise level at the nearest parcel containing a residence, for the combined operation of all fans in all four cabinets, is 42.9 dBA. Added to the measured ambient noise levels, the resulting noise levels at that location are 47.3 dBA during the day and 44.8 dBA at night, meeting the City’s residential 55 dBA daytime and 45 dBA nighttime limits. On the day the generator is tested, the daytime noise level rises to 48.1 dBA, well below the City’s residential daytime noise limit.

**Conclusion**

Based on the information and analysis above, it is the undersigned’s professional opinion that the operation of the Verizon Wireless base station proposed to be located at Berryman Reservoir in Berkeley, California, will comply with the City’s requirements for limiting acoustic noise emission levels.

**Authorship**

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration Nos. E-13026 and M-20676, which expire on June 30, 2019. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.

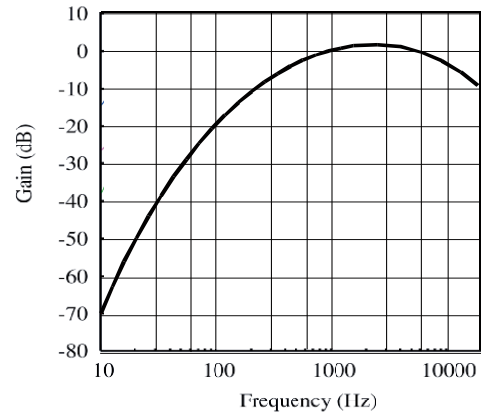
December 17, 2018



*William F. Hammett*  
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William F. Hammett, P.E.  
707/996-5200

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Most municipalities and other agencies specify noise limits in units of dBA, which is intended to mimic the reduced receptivity of the human ear to Sound Pressure (“L<sub>P</sub>”) at particularly low or high frequencies. This frequency-sensitive filter shape, shown in the graph to the right as defined in the International Electrotechnical Commission Standard No. 179, the American National Standards Institute Standard No. 5.1, and various other standards, is also incorporated into most calibrated field test equipment for measuring noise levels.



30 dBA	library
40 dBA	rural background
50 dBA	office space
60 dBA	conversation
70 dBA	car radio
80 dBA	traffic corner
90 dBA	lawnmower

The dBA units of measure are referenced to a pressure of 20 μPa (micropascals), which is the threshold of normal hearing. Although noise levels vary greatly by location and noise source, representative levels are shown in the box to the left.

Manufacturers of many types of equipment, such as air conditioners, generators, and telecommunications devices, often test their products in various configurations to determine the acoustical emissions at certain distances. This data, normally expressed in dBA at a known reference distance, can be used to determine the corresponding sound pressure level at any particular distance, such as at a nearby building or property line. The sound pressure drops as the square of the increase in distance, according to the formula:

$$L_P = L_K + 20 \log(D_K/D_P),$$

where L<sub>P</sub> is the sound pressure level at distance D<sub>p</sub> and L<sub>K</sub> is the known sound pressure level at distance D<sub>K</sub>.

Individual sound pressure levels at a particular point from several different noise sources cannot be combined directly in units of dBA. Rather, the units need to be converted to scalar sound intensity units in order to be added together, then converted back to decibel units, according to the formula:

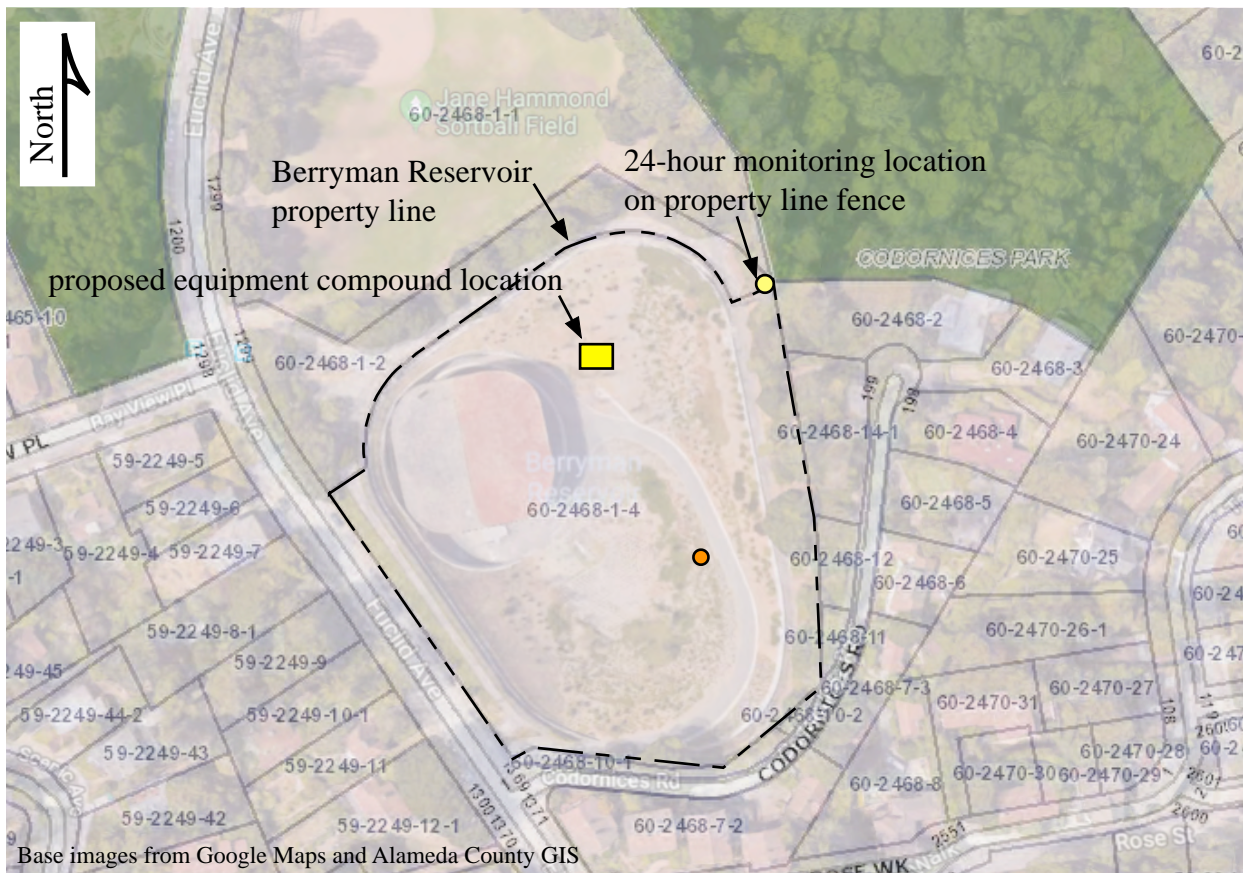
where L<sub>T</sub> is the total sound pressure level and L<sub>1</sub>, L<sub>2</sub>, etc are individual sound pressure levels.

$$L_T = 10 \log (10^{L_1/10} + 10^{L_2/10} + \dots),$$

Certain equipment installations may include the placement of barriers and/or absorptive materials to reduce transmission of noise beyond the site. Noise Reduction Coefficients (“NRC”) are published for many different materials, expressed as unitless power factors, with 0 being perfect reflection and 1 being perfect absorption. Unpainted concrete block, for instance, can have an NRC as high as 0.35. However, a barrier’s effectiveness depends on its specific configuration, as well as the materials used and their surface treatment.

**Verizon Wireless • Proposed Base Station (Site No. 273566 “Berkeley Hills”)  
EBMUD Berryman Reservoir • Berkeley, California**

**24-Hour Monitoring Location**



**PLAN VIEW**



**VIEW LOOKING EAST**

**Verizon Wireless • Proposed Base Station (Site No. 273566 “Berkeley Hills”)  
Euclid Avenue • Berkeley, California**

**Statement of Hammett & Edison, Inc., Consulting Engineers**

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of Verizon Wireless, a personal wireless telecommunications carrier, to evaluate the base station (Site No. 273566 “Berkeley Hills”) proposed to be located at Euclid Avenue in Berkeley, California, for compliance with appropriate guidelines limiting human exposure to radio frequency (“RF”) electromagnetic fields.

**Executive Summary**

Verizon proposes to install directional panel antennas on a tall pole to be sited at the EBMUD Berryman Reservoir facility, located on Euclid Avenue in Berkeley. The proposed operation will comply with the FCC guidelines limiting public exposure to RF energy.

**Prevailing Exposure Standards**

The U.S. Congress requires that the Federal Communications Commission (“FCC”) evaluate its actions for possible significant impact on the environment. A summary of the FCC’s exposure limits is shown in Figure 1. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. The most restrictive FCC limit for exposures of unlimited duration to radio frequency energy for several personal wireless services are as follows:

Wireless Service	Frequency Band	Occupational Limit	Public Limit
Microwave (Point-to-Point)	5–80 GHz	5.00 mW/cm <sup>2</sup>	1.00 mW/cm <sup>2</sup>
WiFi (and unlicensed uses)	2–6	5.00	1.00
BRS (Broadband Radio)	2,600 MHz	5.00	1.00
WCS (Wireless Communication)	2,300	5.00	1.00
AWS (Advanced Wireless)	2,100	5.00	1.00
PCS (Personal Communication)	1,950	5.00	1.00
Cellular	870	2.90	0.58
SMR (Specialized Mobile Radio)	855	2.85	0.57
700 MHz	700	2.40	0.48
[most restrictive frequency range]	30–300	1.00	0.20

**General Facility Requirements**

Base stations typically consist of two distinct parts: the electronic transceivers (also called “radios” or “channels”) that are connected to the traditional wired telephone lines, and the passive antennas that send the wireless signals created by the radios out to be received by individual subscriber units. The transceivers are often located at ground level and are connected to the antennas by coaxial cables. A small antenna for reception of GPS signals is also required, mounted with a clear view of the sky. Because of the short wavelength of the frequencies assigned by the FCC for wireless services, the antennas require line-of-sight paths for their signals to propagate well and so are installed at some height

**Verizon Wireless • Proposed Base Station (Site No. 273566 “Berkeley Hills”)  
Euclid Avenue • Berkeley, California**

above ground. The antennas are designed to concentrate their energy toward the horizon, with very little energy wasted toward the sky or the ground. This means that it is generally not possible for exposure conditions to approach the maximum permissible exposure limits without being physically very near the antennas.

**Computer Modeling Method**

The FCC provides direction for determining compliance in its Office of Engineering and Technology Bulletin No. 65, “Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radio Frequency Radiation,” dated August 1997. Figure 2 describes the calculation methodologies, reflecting the facts that a directional antenna’s radiation pattern is not fully formed at locations very close by (the “near-field” effect) and that at greater distances the power level from an energy source decreases with the square of the distance from it (the “inverse square law”). The conservative nature of this method for evaluating exposure conditions has been verified by numerous field tests.

**Site and Facility Description**

Based upon information provided by Verizon, including zoning drawings by Streamline Engineering and Design, Inc., dated March 13, 2018, it is proposed to install six JMA Wireless Model MX06FRO840-02 directional panel antennas on a new 45-foot steel pole, configured to resemble a pine tree,<sup>\*</sup> to be sited about 70 feet north of the water tank at the EBMUD Berryman Reservoir facility, located on Euclid Avenue in Berkeley. The antennas would employ up to 16° downtilt, would be mounted at an effective height of about 40½ feet above ground, and would be oriented in pairs toward 60°T, 145°T, and 335°T. The maximum effective radiated power in any direction would be 51,870 watts, representing simultaneous operation at 20,900 watts for AWS, 10,000 watts<sup>†</sup> for PCS, 10,970 watts for cellular, and 10,000 watts for 700 MHz service. There are reported no other wireless telecommunications base stations at the site or nearby.

**Study Results**

For a person anywhere at ground, the maximum RF exposure level due to the proposed Verizon operation is calculated to be 0.32 mW/cm<sup>2</sup>, which is 60% of the applicable public exposure limit. The maximum calculated level at the second-floor elevation of any nearby residence<sup>‡</sup> is 12% of the public exposure limit. The maximum calculated level for a worker on the water tank is 84% of the public exposure limit. It should be noted that these results include several “worst-case” assumptions and therefore are expected to overstate actual power density levels from the proposed operation.

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\* Foliage atop the pole puts the overall height at 50 feet.

† Verizon indicates it will operate at reduced power in this band so as not to exceed the emission limit in §24.232 of the FCC Rules.

‡ Located at least 290 feet away, based on photographs from Google Maps.

**Verizon Wireless • Proposed Base Station (Site No. 273566 “Berkeley Hills”)  
Euclid Avenue • Berkeley, California**

**No Recommended Mitigation Measures**

Due to their mounting locations and height, the Verizon antennas would not be accessible to unauthorized persons, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. It is presumed that Verizon will, as an FCC licensee, take adequate steps to ensure that its employees or contractors receive appropriate training and comply with FCC occupational exposure guidelines whenever work is required near the antennas themselves.

**Conclusion**

Based on the information and analysis above, it is the undersigned’s professional opinion that operation of the base station proposed by Verizon Wireless at Euclid Avenue in Berkeley, California, will comply with the prevailing standards for limiting public exposure to radio frequency energy and, therefore, will not for this reason cause a significant impact on the environment. The highest calculated level in publicly accessible areas is much less than the prevailing standards allow for exposures of unlimited duration. This finding is consistent with measurements of actual exposure conditions taken at other operating base stations.

**Authorship**

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration Nos. E-13026 and M-20676, which expire on June 30, 2019. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.



*William F. Hammett*  
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William F. Hammett, P.E.  
707/996-5200

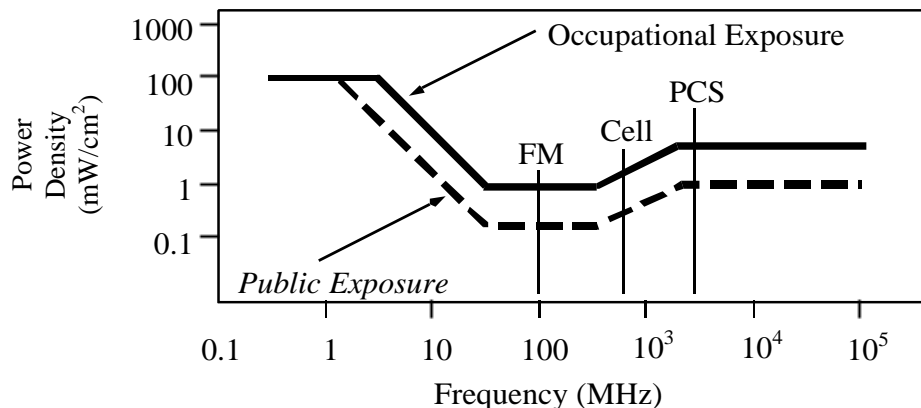
October 17, 2018

### FCC Radio Frequency Protection Guide

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission (“FCC”) to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The FCC adopted the limits from Report No. 86, “Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields,” published in 1986 by the Congressionally chartered National Council on Radiation Protection and Measurements (“NCRP”). Separate limits apply for occupational and public exposure conditions, with the latter limits generally five times more restrictive. The more recent standard, developed by the Institute of Electrical and Electronics Engineers and approved as American National Standard ANSI/IEEE C95.1-2006, “Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz,” includes similar limits. These limits apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

As shown in the table and chart below, separate limits apply for occupational and public exposure conditions, with the latter limits (in *italics* and/or dashed) up to five times more restrictive:

Frequency Applicable Range (MHz)	Electromagnetic Fields (f is frequency of emission in MHz)					
	Electric Field Strength (V/m)		Magnetic Field Strength (A/m)		Equivalent Far-Field Power Density (mW/cm <sup>2</sup> )	
0.3 – 1.34	614	<i>614</i>	1.63	<i>1.63</i>	100	<i>100</i>
1.34 – 3.0	614	<i>823.8/f</i>	1.63	<i>2.19/f</i>	100	<i>180/f<sup>2</sup></i>
3.0 – 30	1842/f	<i>823.8/f</i>	4.89/f	<i>2.19/f</i>	900/f <sup>2</sup>	<i>180/f<sup>2</sup></i>
30 – 300	61.4	<i>27.5</i>	0.163	<i>0.0729</i>	1.0	<i>0.2</i>
300 – 1,500	3.54√f	<i>1.59√f</i>	√f/106	<i>√f/238</i>	f/300	<i>f/1500</i>
1,500 – 100,000	137	<i>61.4</i>	0.364	<i>0.163</i>	5.0	<i>1.0</i>



Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits, and higher levels also are allowed for exposures to small areas, such that the spatially averaged levels do not exceed the limits. However, neither of these allowances is incorporated in the conservative calculation formulas in the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) for projecting field levels. Hammett & Edison has built those formulas into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radio sources. The program allows for the description of buildings and uneven terrain, if required to obtain more accurate projections.



## RFR.CALC™ Calculation Methodology

### Assessment by Calculation of Compliance with FCC Exposure Guidelines

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission (“FCC”) to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The maximum permissible exposure limits adopted by the FCC (see Figure 1) apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits.

#### Near Field.

Prediction methods have been developed for the near field zone of panel (directional) and whip (omnidirectional) antennas, typical at wireless telecommunications base stations, as well as dish (aperture) antennas, typically used for microwave links. The antenna patterns are not fully formed in the near field at these antennas, and the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) gives suitable formulas for calculating power density within such zones.

For a panel or whip antenna, power density  $S = \frac{180}{\theta_{BW}} \times \frac{0.1 \times P_{net}}{\pi \times D \times h}$ , in mW/cm<sup>2</sup>,

and for an aperture antenna, maximum power density  $S_{max} = \frac{0.1 \times 16 \times \eta \times P_{net}}{\pi \times h^2}$ , in mW/cm<sup>2</sup>,

where  $\theta_{BW}$  = half-power beamwidth of the antenna, in degrees, and

$P_{net}$  = net power input to the antenna, in watts,

$D$  = distance from antenna, in meters,

$h$  = aperture height of the antenna, in meters, and

$\eta$  = aperture efficiency (unitless, typically 0.5-0.8).

The factor of 0.1 in the numerators converts to the desired units of power density.

#### Far Field.

OET-65 gives this formula for calculating power density in the far field of an individual RF source:

power density  $S = \frac{2.56 \times 1.64 \times 100 \times RFF^2 \times ERP}{4 \times \pi \times D^2}$ , in mW/cm<sup>2</sup>,

where ERP = total ERP (all polarizations), in kilowatts,

RFF = relative field factor at the direction to the actual point of calculation, and

$D$  = distance from the center of radiation to the point of calculation, in meters.

The factor of 2.56 accounts for the increase in power density due to ground reflection, assuming a reflection coefficient of 1.6 (1.6 x 1.6 = 2.56). The factor of 1.64 is the gain of a half-wave dipole relative to an isotropic radiator. The factor of 100 in the numerator converts to the desired units of power density. This formula has been built into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radiation sources. The program also allows for the description of uneven terrain in the vicinity, to obtain more accurate projections.

**Verizon Wireless • Proposed Base Station (Site No. 273566 “Berkeley Hills”)  
Euclid Avenue • Berkeley, California**

**Supplemental Information for  
Review by URS Corporation**

Underlying RF Exposure Report: dated October 17, 2018

Attached are antenna manufacturers’ specification documents, showing antenna patterns and highlighted to show half-power beam width, front-to-back ratio, and aperture height for the following antennas proposed for use at this base station:

JMA Wireless MX06FRO840-02

The applicable  $P_{net}$  values are as follows  
(referencing the panel antenna near-field calculation formula in Figure 2 of Report):

<u><math>P_{net}</math></u>	<u>Frequency Band</u>
285 watts	AWS
150 watts	PCS
285 watts	cellular
285 watts	700 MHz

October 17, 2018

Product Specifications

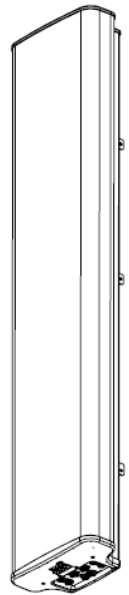
# MX06FRO840-02

NWAV™ X-Pol Antenna | Hex-Port | 8 ft | 40°



## X-Pol, Hex-Port 8 ft 40° Fast Roll Off with Smart Bias T (2) 698–894 MHz & (4) 1695–2180 MHz

- Fast Roll Off (FRO™) Azimuth beam pattern improves Intra- and Inter-cell SINR
- Excellent Passive Intermodulation (PIM) performance reduces harmful interference
- Fully integrated (iRETs) with *independent* RET control for low and high bands for ease of network optimization
- SON-Ready array spacing supports beamforming capabilities
- Suitable for LTE/CDMA/PCS/UMTS/GSM Air interface technologies
- Integrated Smart BIAS-Ts reduces leasing costs



Electrical Specification (Minimum/ Maximum)	Ports 1,2		Ports 3,4,5,6		
	698–798	824–894	1695–1880	1850–1990	1920–2180
Frequency bands, MHz	698–798	824–894	1695–1880	1850–1990	1920–2180
Polarization	± 45°		± 45°		
Average gain over all tilts, dBi	17.6	18.0	19.9	20.4	20.8
Horizontal beamwidth (HBW), degrees <sup>1</sup>	42°	37°	39°	36°	34°
Front-to-back ratio, co-polar power @180° ± 30°, dB	>22.0	>22.0	>25.0	>25.0	>25.0
X-Pol discrimination (CPR) at boresight, dB	>18.0	>15.0	>18	>18	>15
Sector power ratio, percent	<4.5	<3.5	<3.7	<3.8	<3.6
Vertical beamwidth, (VBW), degrees <sup>1</sup>	9.0°	8.3°	6.0°	5.7°	5.3°
Electrical downtilt (EDT) range, degrees	2-12	2-12	0-9		
First upper side lobe (USLS) suppression, dB <sup>1</sup>	≤ -15.0	≤ -15.0	≤ -16.0	≤ -16.0	≤ -16.0
Minimum cross polar isolation, port-to-port, dB	25	25	25	25	25
Maximum VSWR/ return loss, dB	1.5/ -14.0	1.5/ -14.0	1.5/ -14.0	1.5/ -14.0	1.5/ -14.0
Maximum passive Intermodulation (PIM), 2x 20W carrier, dBc	-153	-153	-153		
Maximum input power per any port, watts	300		250		
Total composite power all ports, watts			1500		

<sup>1</sup> Typical value over frequency and tilt

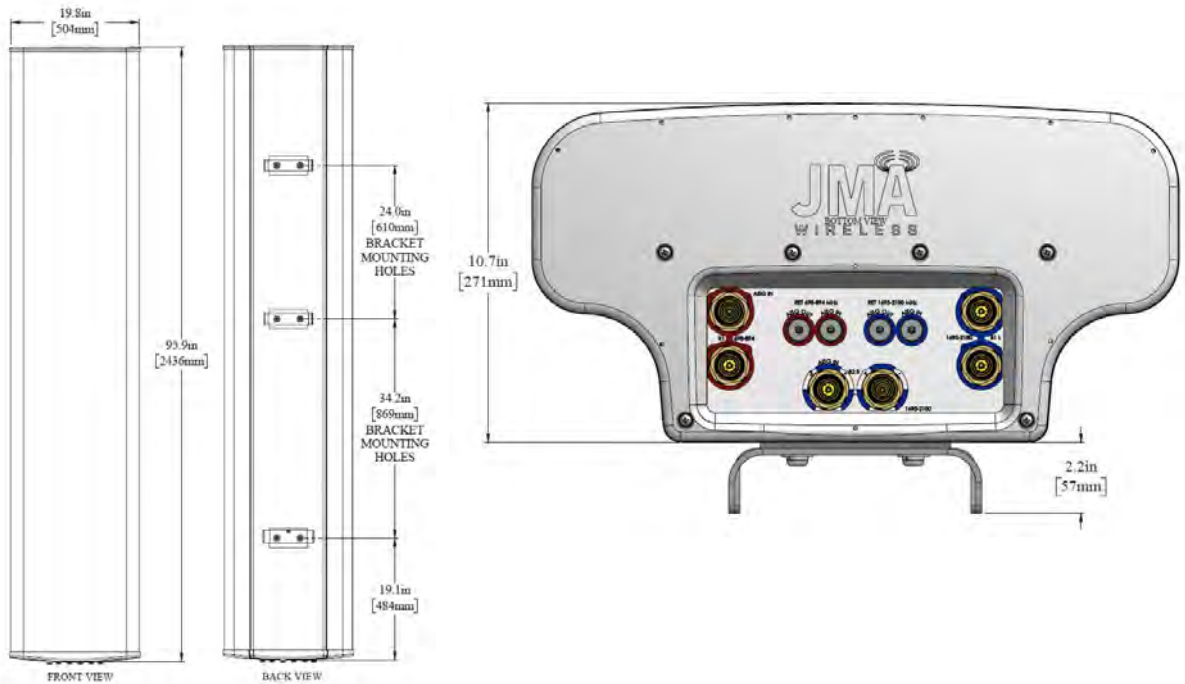
Product Specifications

# MX06FRO840-02

NWAV™ X-Pol Antenna | Hex-Port | 8 ft | 40°



Mechanical Specifications	
Dimensions height/ width/ depth, inches (mm)	95.9/ 19.8/ 10.7 (2436/504/ 271)
Shipping dimensions length/ width/ height, inches (mm)	106/ 26/ 15 (2692/ 660/ 381)
No. of RF input ports, connector type & location	6 x 4.3-10 female, bottom
RF connector torque	96 lbf-in (10.85 N m or 8 lbf-ft)
Net antenna weight, lb (kg)	75 (34.0)
Shipping weight, lb (kg)	105 (47.6)
Antenna mounting and downtilt kit included with antenna	91900318, 91900319 (middle bracket)
Net weight of the mounting and downtilt kit, lb (kg)	18 (8.2)
Range of mechanical up/ down tilt	-2° to 12°
Rated wind survival speed, mph (km/h)	150 (241)
Frontal, lateral & rear wind loading @ 150 km/h, lbf (N)	355 (1581), 152 (677), 355 (1581)
Equivalent flat plate @100 mph and Cd=2, sq. ft.	8.17



Ordering Information	
<b>Antenna Model</b>	<b>Description</b>
MX06FRO840-02	8F X- Pol HEX FRO 40° 2-12°/ 0-9° RET, 4.3-10 & SBT
<b>Optional Accessories</b>	
992100-CA030-SC	Optional AISG jumper cable, M/F, 3.0 meters
PCU-1000	Primary control unit, USB

**Verizon Wireless • Proposed Base Station (Site No. 273566 “Berkeley Hills”)  
Euclid Avenue • Berkeley, California**

**Supplemental Information for  
Review by City Planner**

Underlying RF Exposure Report: dated October 17, 2018

RE EME STUDY DATA			Uncontrolled				Controlled			
			Subject Equipment		Accumulative Equipment		Subject Equipment		Accumulative Equipment	
			Power density mW/cm <sup>2</sup>	% FCC limit	Power density mW/cm <sup>2</sup>	% FCC limit	Power density mW/cm <sup>2</sup>	% FCC limit	Power density mW/cm <sup>2</sup>	% FCC limit
Subject structure	Base horizontal plane <sup>(1)</sup>	In front	0.32	60						
		Behind								
	Horizontal planes within 12 ft	Above								
		Below								
	Roof surface (main)									
Adjacent locations	Any structure within 30 ft	___ ft								

NOTES: <sup>(1)</sup> Defined as the ground

October 17, 2018



Planning and Development Department  
Land Use Planning Division

January 16, 2019

Sent via email:  
David.haddock@ridgecommunicate.com

David Haddock  
Ridge Communications, Inc.  
12919 Alcosta Blvd, Suite 1  
San Ramon, CA 94583

**Re: Use Permit #ZP2018-0236 – 0 Euclid Avenue**

Dear Applicant,

The Land Use Division has reviewed the above referenced application, and determined that the application is incomplete; please review the comments below as well as the list of items required to complete the application. Staff is unable to take further action on the projects until all the items listed below are corrected and/or submitted:

**General Comments or Corrections**

1. Please provide documentation in the form of elevations and photo simulations of alternatives to the proposed monopine such as a monopole (not stealthed) for consideration by staff.
2. Noise Assessment Reports – comments deferred: Our engineering consultants will review the Noise Reports provided with the application. Be advised that queries may result from this peer review and you may be asked to provide clarification, additional information or data, or revisions as needed to demonstrate compliance with the FCC standards applicable to this request.
3. RF EME Studies – comments deferred: Our engineering consultants will review the RF EME studies provided with the application. Be advised that queries may result from this peer review and you may be asked to provide clarification, additional information or data, or revisions as needed to demonstrate compliance with the FCC standards applicable to this request.

I look forward to working with you on these projects. Feel free to contact me via

email at [Lnawfal@cityofberkeley.info](mailto:Lnawfal@cityofberkeley.info) or by phone at 510-981-7424 if you have any questions prior to resubmittal. Please note that additional items may be required upon review of your resubmittal.

Sincerely,

A handwritten signature in black ink, appearing to read 'Layal Nawfal', written in a cursive style.

Layal Nawfal  
Associate Planner



December 17, 2018

Layal Nawfal, Associate Planner  
Planning and Development Department  
City of Berkeley  
1947 Center Street, 3<sup>rd</sup> Floor  
Berkeley, CA 94704

Re: Verizon Wireless Permit Application  
New Telecommunication Facility  
EBMUD Berryman Reservoir  
Euclid Ave & Codornices Rd  
Use Permit #ZP2018-0236

Dear Ms. Nawfal:

I write in response to your completeness review letter dated January 16, 2019. As requested, I am enclosing documentation in the form of elevations and photo simulations of design alternatives to the proposed monopine tree pole.

Included with this letter are example elevations for different tower types that Verizon has installed in other locations. These elevations have not been custom designed for this location. But the appearance of the tower, especially at the highest elevations on the tower, would be very similar to what is depicted here.

Also included are photosimulations that depict the way various tower designs would look from public areas near the site. In addition to the monopine tree pole simulations that you have already received, I am sending photosimulations for a plain monopole, with alternatives painted both green and gray, for a four legged tower with screen panels at the top (both green and gray), and for an alternative tree pole designed to resemble a eucalyptus tree.

Please let me know if you have any questions about these documents. I welcome your thoughts.

Sincerely,

A handwritten signature in blue ink, appearing to read "D. Haddock", is written over a horizontal line.

David Haddock  
Site Development Manager  
Ridge Communications, Inc. for Verizon Wireless  
12919 Alcosta Blvd. Ste. 1  
San Ramon, CA 94583







Existing



proposed monopole

Proposed









Existing



Proposed



Berkeley Hills Site # 237566

Looking Northeast from Euclid Ave.

2/22/19

EBMUD Berryman Reservoir  
Berkeley, CA

View #2

Applied Imagination 510 914-0500





Existing



Proposed





Existing



proposed antennas behind screening

Proposed



Berkeley Hills Site # 237566

Looking Northeast from Euclid Ave.

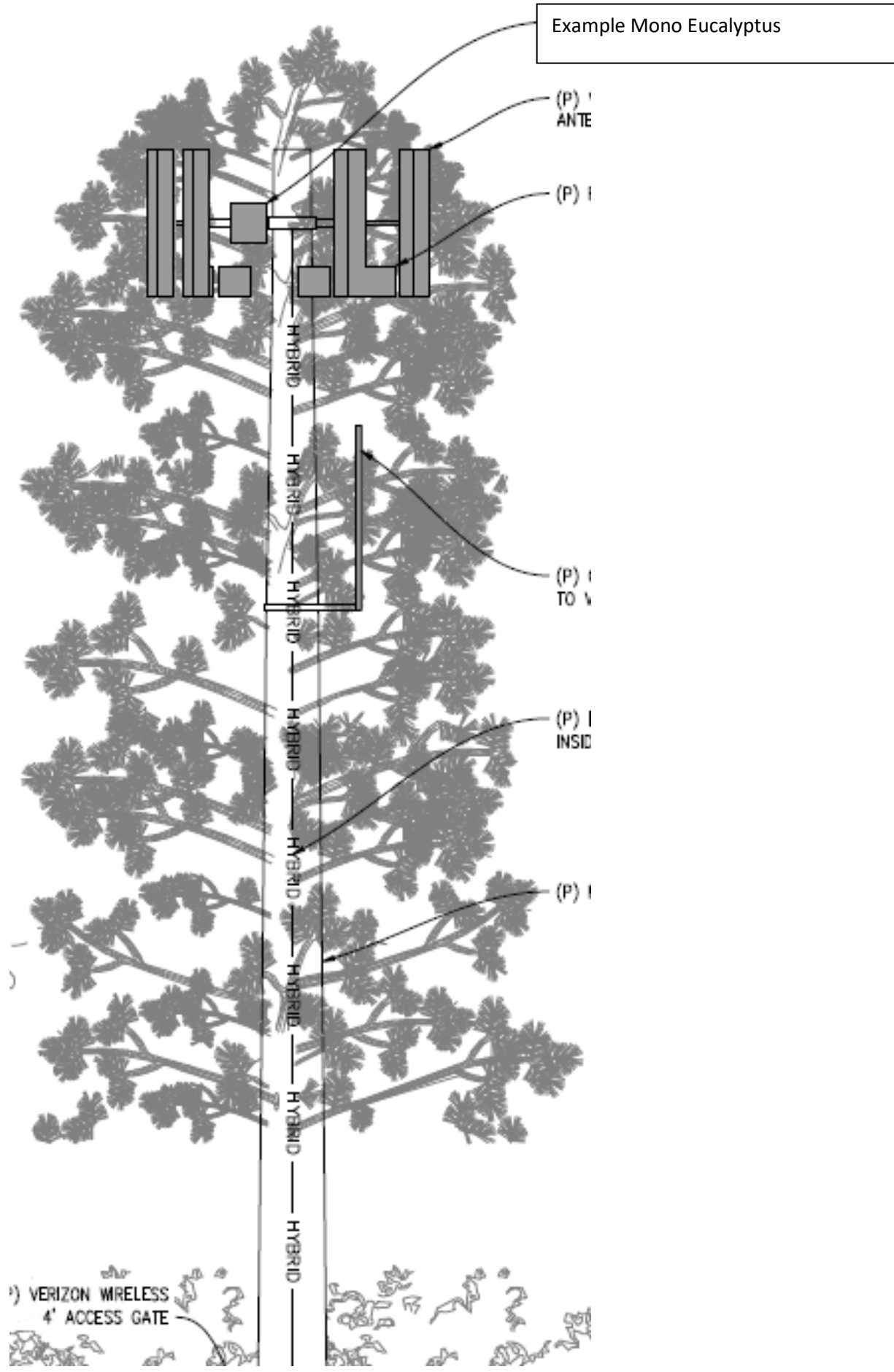
2/22/19

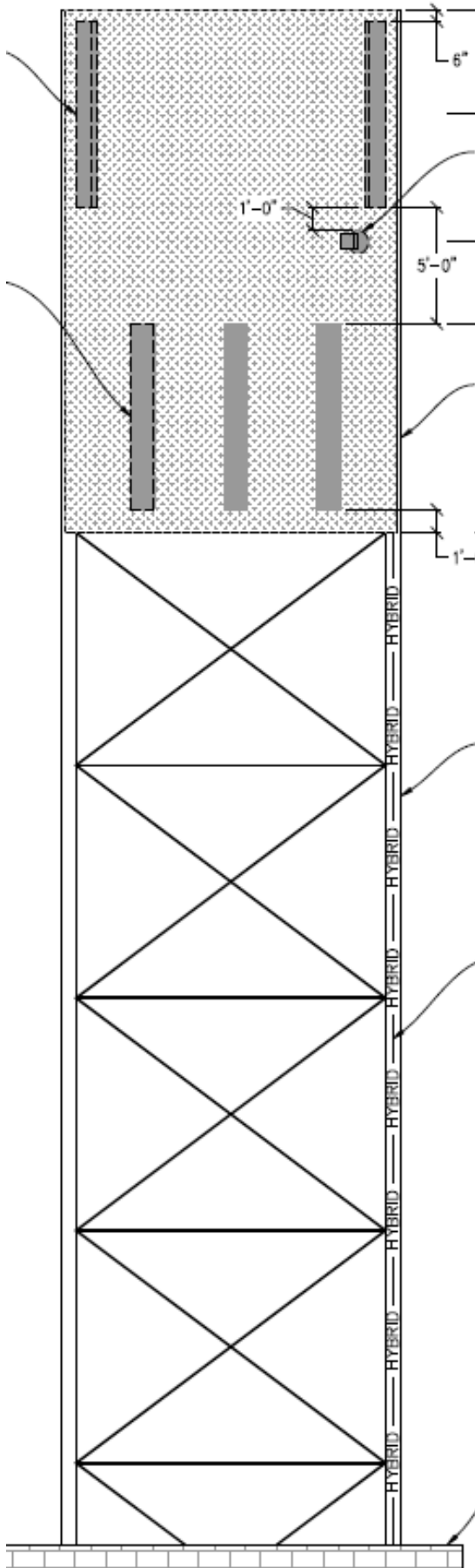
EBMUD Berryman Reservoir  
Berkeley, CA

View #2

Applied Imagination 510 914-0500

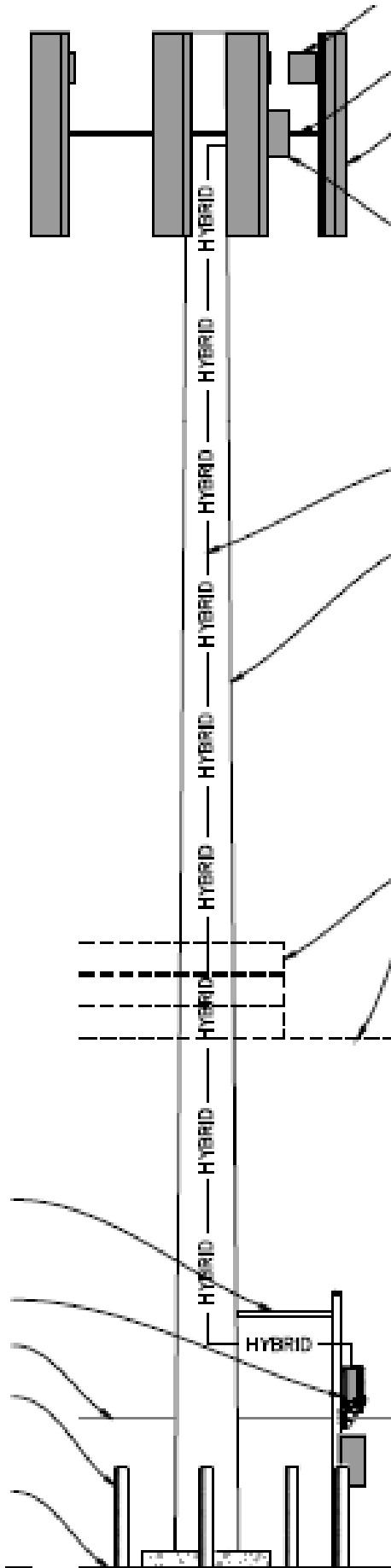






Example four legged tower with FRP screen panels at the top.

Standard Monopole



**Nawfal, Layal**

---

**Subject:** FW: Cell phone tower

-----Original Message-----

From: Martin Aston [mailto:[astonma@icloud.com](mailto:astonma@icloud.com)]

Sent: Tuesday, April 02, 2019 11:39 AM

To: Nawfal, Layal <[LNawfal@cityofberkeley.info](mailto:LNawfal@cityofberkeley.info)>

Subject: Re: Cell phone tower

Dear Layal,

Please stop the construction of the hideous artificial tree covered cell phone tower in the historic Rose Garden District of Euclid Avenue in North Berkeley! The artificial trees are extremely ugly and will mar the elegant north Euclid Avenue beauty, ambiance and serenity. Please do not approve this atrocity!

Sincerely,  
Martin Aston  
Euclid Avenue  
510 915-4339

**Nawfal, Loyal**

---

**Subject:** FW: Berkeley WIFI  
**Attachments:** 7q4HijhMSH6LD6wvqBZQtA.jpeg

**From:** shekrystal@aol.com [mailto:shekrystal@aol.com]  
**Sent:** Tuesday, April 02, 2019 11:19 AM  
**To:** Nawfal, Loyal <LNawfal@cityofberkeley.info>  
**Subject:** Fwd: Berkeley WIFI

Dear Loyal,

I am writing to vigorously object to the proposed installation of a cell phone tower camouflaged by an artificial tree in the Rose Garden section of Euclid Avenue in h North Berkeley. See attached notice. This Rose Garden neighborhood is an architectural heritage district with beautiful architect designed million dollar homes mostly from the 1920s. The rose garden is a beautiful tourist and local attraction and the homes all have perfectly manicured gardens with curb appeal. To install an ugly, artificial tree concealing a cell phone post is not in character with this neighborhood and I strongly request that it not be approved.

Respectfully yours,  
Dr. Sheila Krystal  
1509 Euclid Avenue  
Berkeley, CA 94708



# PROPOSED PROJECT



## PROJECT INFORMATION

Berryman Reservoir on  
Euclid Ave: Proposed new  
wireless facility with faux  
evergreen tree tower and  
equipment on the ground.

## APPLICANT INFORMATION

Verizon Wireless  
Ridge Communications  
12915 Alcosta Blvd, Suite 1  
San Ramon, CA 94583  
(925) 498-2340

For more information check the  
Planning Department Web Page:  
[www.ci.berkeley.ca.us/planning](http://www.ci.berkeley.ca.us/planning)  
Or call 510-981-7410

Public Notices





Rincon Consultants, Inc.

449 15th Street, Suite 303  
Oakland, California 94612

510 834 4455 OFFICE

info@rinconconsultants.com  
www.rinconconsultants.com

May 24, 2019  
Project No: 19-07869

Loyal Nawfal  
Associate Planner  
City of Berkeley, Land Use Planning Division  
2180 Milvia Street  
Berkeley, California 94704  
Via email: [Lnawfal@cityofberkeley.info](mailto:Lnawfal@cityofberkeley.info)

**Subject: Berkeley Hills Cellular Facility Project, Third-Party Review of Noise Analysis  
Berryman Reservoir, Berkeley, California 94704**

Dear Ms. Nawfal:

Rincon Consultants, Inc. has reviewed the Statement of Hammet and Edison, Inc. Consulting Engineers, regarding the Proposed Base Station (Site No. 273566 "Berkeley Hills") dated December 17, 2018. The Statement was reviewed to ascertain the degree to which the evaluation considered existing information (e.g., literature, databases, and other resources) and the accuracy of existing conditions documentation (e.g., distance to sensitive receptors and existing noise levels); and to evaluate the adequacy of modeling assumptions and results. Our comments are as follows.

1. Page 3, Table listing equipment and associated noise levels. The table list three different types of equipment. Rincon has evaluated the noise level data presented. The data for the Generac SD030 states the noise level with a Level 2 enclosure would be 62 dBA at 23 feet. This information does not match the noise level data provided by the manufacturer that is available online, which shows a noise level of 68 dBA with a Level 2 cover at 23 feet. The analysis does not offer enough detail to determine how the noise level reported in the table was derived. It appears the reduced noise level is associated with the short testing time; however, that is not clear. Please revise the analysis to show the published noise levels and list all assumptions and calculations incorporated into the analysis.
2. Page 3, Table listing equipment and associated noise levels. The table lists two different types of Charles Industries equipment, CUBE-SSA4C215XC1 and CUBE-PM639. Rincon contacted Charles industries to verify the reported noise levels; however, Rincon was unable to verify the noise level data for these units for a couple of reasons. Charles Industries indicated the CUBE-PM639 is not a proper model number. The model number is missing several designations to identify the actual unit proposed. Charles industries also indicated the noise level data is based on a 1-meter distance. Please include the specification sheets of all the proposed units with the manufacture's noise level data used in the analysis and the calculations used to determine the noise level at the nearest residence in an appendix.
3. Page 3, Paragraph following the table listing equipment and associated noise levels. The analysis of noise levels the combined noise level from the project with the ambient noise level. This is inappropriate as the City noise level limits are applicable only to the noise source and should not be evaluated by adding the source to the ambient noise level. As stated in Section 13.040.050, "No



City of Berkeley, Land Use Planning Division  
Third-Party Review of Noise Analysis – Berkeley Hills Cellular Facility Project

person shall operate or cause to be operated any source of sound at any location within the incorporated City or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person..." Thus the noise limits apply only to the source being operated. Please revise the analysis to remove the discussion of project plus ambient.

Thank you for the opportunity to provide third-party review services for this project. If you have any questions about this letter, please do not hesitate to contact us.

Sincerely, p

**Rincon Consultants, Inc.**

A handwritten signature in black ink that reads "William A. Maddux". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

William A. Maddux  
Senior Environmental Scientist



## WIRELESS RADIO FREQUENCY PLANNING MEMORANDUM

**TO:** Rincon Consultants, Inc.  
**FROM:** Telecom Law Firm, P.C.  
**DATE:** May 24, 2019  
**CLIENT:** Rincon's Client – City of Berkeley, California  
**ADDRESS:** East Bay Municipal Utility District (“EBMUD”)  
Berryman Reservoir, Berkeley, California  
**CARRIER:** Verizon

**LOCATION NO:** 273566  
**LOCATION ID:** BERKELEY HILLS  
**RINCON JOB #:** 19-07869

### 1. Summary

Telecom Law Firm, PC (“TLF”), subcontractor to Rincon Consultants, Inc. (“Rincon”), recommends that the City of Berkeley (“City”) require Verizon to follow the City’s Municipal Code pertaining to RF safety (BMC 23C.17.090).

Based on the RF emissions data for this project as shown in the Hammett and Edison (“H&E”) Radio Frequency report (“H&E RF Report”), the project does demonstrate planned compliance with the FCC’s RF emissions rules, thus the City has no basis to deny the project based solely on RF emissions concerns.

### 2. Project Description

The City, through Rincon, requested that TLF review Verizon’s proposal in regard to radio frequency emissions in connection with Verizon’s plan to construct and operate a new wireless site at the East Bay Municipal Utility District (“EBMUD”) Berryman Reservoir in Berkeley, California. This memorandum assesses whether Verizon’s proposal demonstrates planned compliance with the federal radio frequency exposure guidelines.

Verizon proposes to construct a new wireless facility north of the existing water tank on the property. The project plans are most recently dated March 13, 2018 through May 20, 2018 (the “Plans”). Verizon’s Plans show that the facility will be comprised of a 50-foot high monopine and associated equipment at the antenna, and at an associated 25’ x 20’ leased area for additional equipment associated with the antennas and standby powering.

Figure 1 is Verizon’s project description submitted on the face of the Plans.

PROJECT DESCRIPTION	
A (P) VERIZON WIRELESS UNMANNED TELECOMMUNICATION FACILITY CONSISTING OF INSTALLING:	
<ul style="list-style-type: none"><li>• (P) 50'-0" HIGH MONOPINE W/ (6) (P) VERIZON WIRELESS ANTENNAS</li><li>• (6) (P) RRU UNITS</li><li>• (2) (P) SURGE SUPPRESSORS, (1) Ⓢ EQUIPMENT &amp; (1) Ⓢ ANTENNAS</li><li>• (P) VERIZON WIRELESS 25'-0"X20'-0" (500 SQ FT) EQUIPMENT LEASE AREA</li><li>• (P) VERIZON WIRELESS (177 SQ FT) MONOPINE LEASE AREA</li><li>• (P) GPS ANTENNA</li><li>• (P) VERIZON WIRELESS 30KW DIESEL GENERATOR ON 132 GALLON UL 2085 RATED FUEL TANK</li></ul>	

Figure 1: Verizon's Project Description (Source: Plans, title page T-1).

Verizon proposes to install on the monopine six panel antennas distributed evenly with two panel antennas in three sectors (Sector A oriented towards 60° true north ("TN"), Sector B oriented towards 145°TN, and Sector C oriented towards 335°TN).

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See Figure 2 for the approximate location of the monopine and azimuths.



**Figure 2:** Approximate (i) location of monopine, and (ii) azimuth orientations for all three sectors (Source: Google Maps; Annotated by Dr. Kramer).

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See Figure 4 for the proposed antenna layout within the canopy of the proposed monopine.

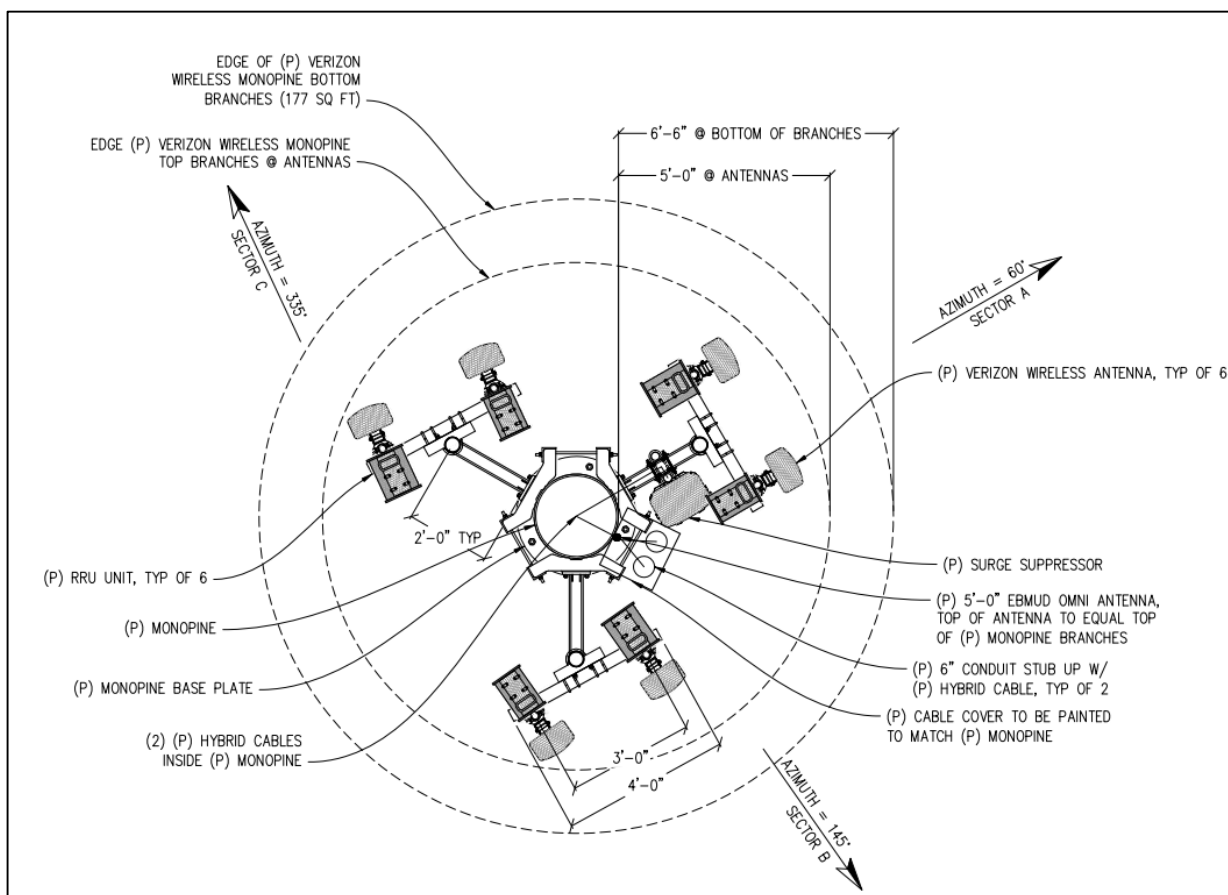


Figure 4: Antenna Plan (Source: Plans, Page A-4).

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The Plans indicate that the emission center of a 'future' carrier's antennas would be at approximately 27' 6". Figure 5 depicts the East elevation of the panel antennas.

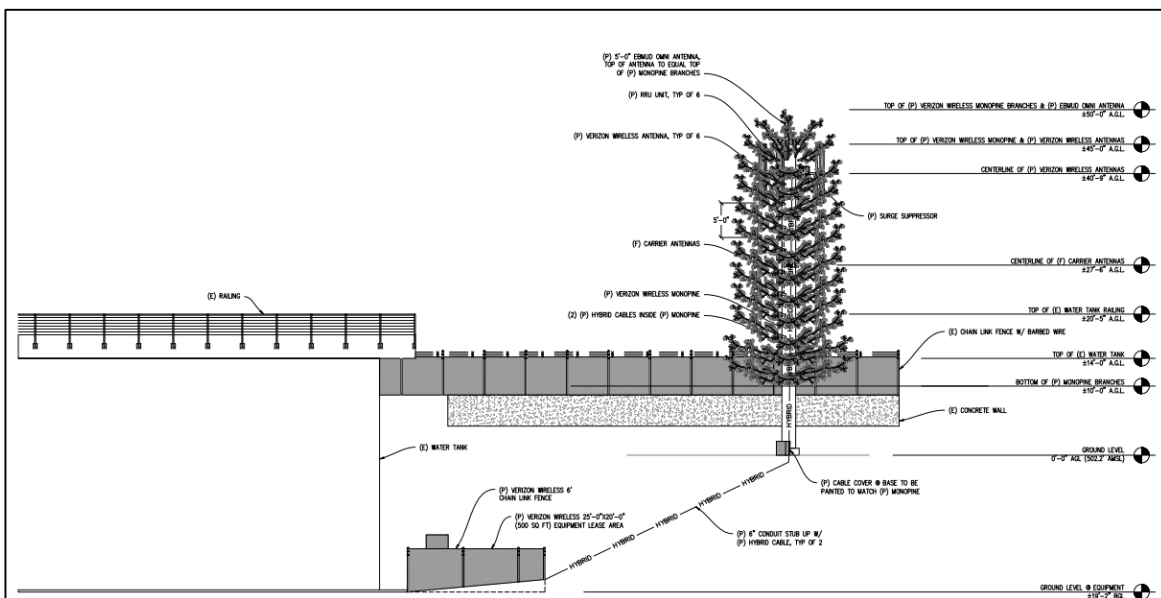


Figure 5: East elevation of panel antennas (Source: Plans, Page A-5).

Figure 6 depicts the South elevations of the panel antennas.

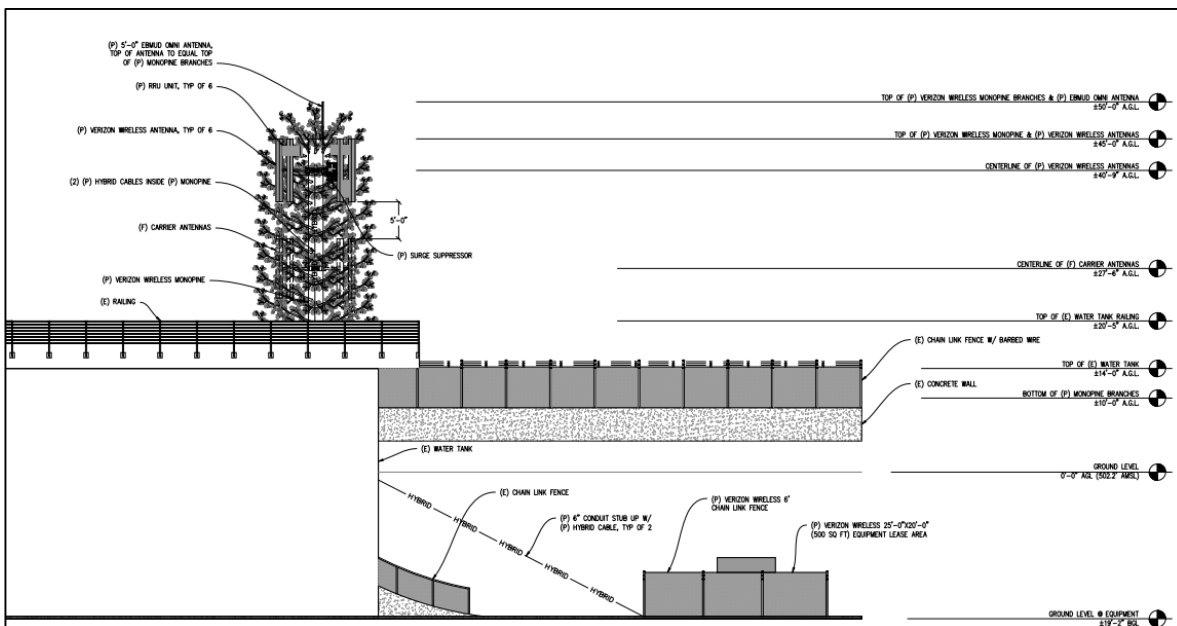


Figure 6: South elevations of panel antennas (Source: Plans, Page A-6).



### 3. Planned Compliance with RF Exposure Regulations

Under the Telecom Act, the FCC completely occupies the field with respect to RF emissions regulation. The FCC established comprehensive rules for human exposure to RF emissions (the “**FCC Guidelines**”).<sup>1</sup> State and local governments cannot regulate wireless facilities based on environmental effects from RF emissions to the extent that the emissions comply with the FCC Guidelines.<sup>2</sup>

Although localities cannot establish their own standards for RF exposure, local officials may require wireless applicants to demonstrate compliance with the FCC Guidelines.<sup>3</sup> Such demonstrations usually involve a predictive calculation because the site has not yet been built.

#### 3.1. FCC Guidelines, Categorical Exclusions and Exposure Mitigation Measures

FCC Guidelines regulate *exposure* rather than *emissions*.<sup>4</sup> Although the FCC establishes a maximum permissible exposure (“**MPE**”) limit, it does not mandate any specific limitations on power levels applicable to all antennas and requires the antenna operator to adopt exposure-mitigation measures only to the extent that certain persons might become exposed to the emissions. Thus, a relatively low-powered site in proximity to the general population might require more comprehensive mitigation measures than a relatively high-powered site in a remote location accessible only to trained personnel.

The MPE limit also differentiates between “general population” and “occupational” people. Most people fall into the general population class, which includes anyone who either does not know about potential exposure or knows about the exposure but cannot exert control over the transmitters.<sup>5</sup> The narrower occupational class includes persons exposed through their employment and able to exert control over their exposure.<sup>6</sup> The MPE limit for the general population is five times lower than the MPE limit for the occupational class.

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<sup>1</sup> See 47 U.S.C. § 332(c)(7)(B)(iv); see also 47 C.F.R. § 1.1307 *et seq.*; FCC Office of Engineering and Technology, *Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields*, OET Bulletin 65, ed. 97-01 (1997).

<sup>2</sup> See 47 U.S.C. § 332(c)(7)(B)(iv).

<sup>3</sup> See *In re Procedures for Reviewing Requests for Relief from State and Local Regulations Pursuant to Section 332(c)(7)(B)(iv) of the Communications Act of 1934*, *Report and Order*, 15 FCC Rcd. 22821, 22828–22829 (Nov. 13, 2000) (declining to adopt rules that limit local authority to require compliance demonstrations).

<sup>4</sup> See *generally* Human Exposure to Radio Frequency Fields: Guidelines for Cellular and PCS Sites, *Consumer Guide*, FCC (Oct. 22, 2014), available at <https://www.fcc.gov/guides/human-exposure-rf-fields-guidelines-cellular-and-pcs-sites> (discussing in general terms how wireless sites transmit and how the FCC regulates the emissions).

<sup>5</sup> See 47 C.F.R. § 1.1310, Note 2.

<sup>6</sup> See *id.*



Lastly, the FCC “categorically excludes” certain antennas from routine environmental review when either (1) the antennas create exposures in areas virtually inaccessible to humans or (2) the antennas operate at extreme low power. As a general rule, a wireless site qualifies for a categorical exclusion when mounted on a structure built solely or primarily to support FCC-licensed or authorized equipment (*i.e.*, a tower) and such that the lowest point on the lowest transmitter is more than 10 meters (32.8 feet) above ground.<sup>7</sup>

Categorical exclusions establish a presumption that the emissions from the antennas will not significantly impact humans or the human environment. Such antennas are exempt from routine compliance evaluations but not exempt from actual compliance. Under some circumstances, such as a heavily collocated tower or when in close proximity to general population members, even a categorically excluded site will require additional analysis.

### **3.2. Planned Compliance Evaluation and Recommendations**

The FCC Guidelines categorically exclude Verizon’s proposal from routine compliance evaluations because Verizon proposes to install its equipment on a new support structure camouflaged as a monopine that is exclusively intended to support FCC-licensed wireless equipment. In addition, the lowest point on the lowest transmitting antenna is proposed to be approximately at 37 feet AGL.

In the instant case, Verizon has submitted to the City the H&E RF Report dated October 17, 2018, sealed by Mr. William F. Hammett, P.E.

Presuming that the H&E RF Report contains the current RF emissions data, it is sufficient to allow us to conduct an independent RF analysis to determine whether the project as proposed will comply under the FCC’s Rules. See Figure 7.

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<sup>7</sup> See *id.* § 1.1307(b)(1).



### Site and Facility Description

Based upon information provided by Verizon, including zoning drawings by Streamline Engineering and Design, Inc., dated March 13, 2018, it is proposed to install six JMA Wireless Model MX06FRO840-02 directional panel antennas on a new 45-foot steel pole, configured to resemble a pine tree,\* to be sited about 70 feet north of the water tank at the EBMUD Berryman Reservoir facility, located on Euclid Avenue in Berkeley. The antennas would employ up to 16° downtilt, would be mounted at an effective height of about 40½ feet above ground, and would be oriented in pairs toward 60°T, 145°T, and 335°T. The maximum effective radiated power in any direction would be 51,870 watts, representing simultaneous operation at 20,900 watts for AWS, 10,000 watts† for PCS, 10,970 watts for cellular, and 10,000 watts for 700 MHz service. There are reported no other wireless telecommunications base stations at the site or nearby.

Figure 7: Site and Facility Description (Source: H&E RF Report Page 2).

TLF notes that the H&E RF Report contains a footnote on the bottom of page 2 stating, “[f]oliage atop the pole puts the overall height at 50 feet.” Based on the transmitted frequencies and power levels disclosed in the H&E RF Report, Verizon’s emissions will create a worst case “controlled access zone” that extends to a maximum of approximately 100 feet horizontally from the face of the antennas at approximately the same height as the antennas emissions center. Those emission centers are at approximately 40' 9" above ground level (“AGL”) for Sectors A, B and C.

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See Figure 8 for the approximate azimuths and extents of the controlled zone.



**Figure 8:** Approximate (i) location of monopine, and (ii) azimuth orientations for all three sectors (Source: Google Maps; Annotated by Dr. Kramer).

The length of the red arrows in Figure 8 is about 100', which is the limit of the controlled zone, which is at least 41 feet above ground level at the location of the monopine.

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See Figure 9 for the proposed location and centerline distance of a future carrier's antennas.

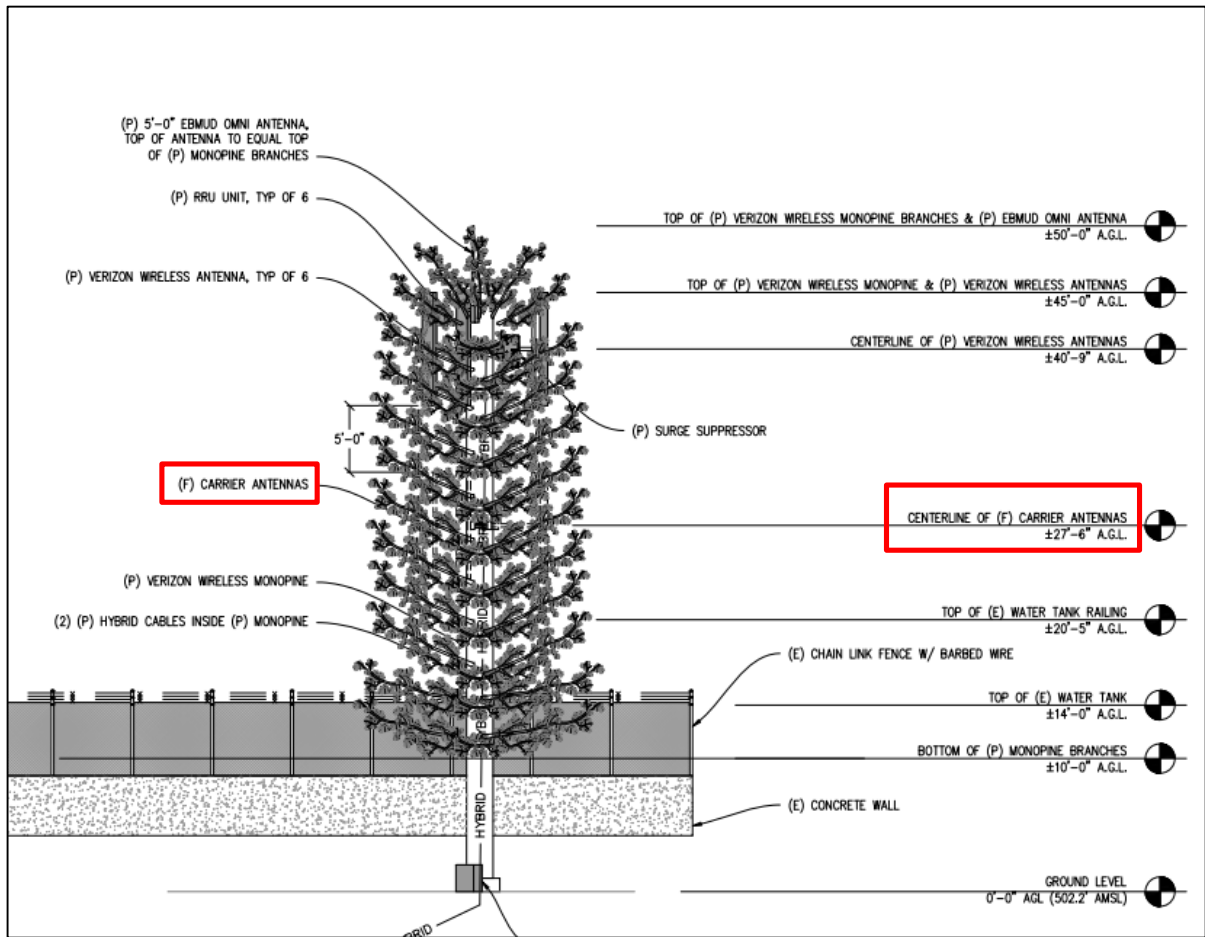


Figure 9: Future Carrier Antenna Locations (Source: Plans, Page A-5, Annotated by Dr. Kramer).

While the site as currently proposed is categorically excluded under the FCC Guidelines, TLF notes that another round of independent RF analysis will be needed to determine whether a future carrier's antennas will comply under the FCC's Rules since the future carrier's antennas will be installed lower than 10 meters AGL. For this reason, we recommend that the City direct Verizon to strike all 'future' elements from the Plans and the Application so that any future changes to this site only occur upon a subsequent planning application and then-current RF emissions analysis of the then-existing Verizon emissions and the proposed emissions of the future carrier(s).



We recommend the City consider adopting the following conditions of approval to promote compliance with the FCC Guidelines in the event that the City approves the application in its current form:

1. The permittee shall keep all access points to the site locked at all times, except when active maintenance is performed on the equipment.
2. The permittee shall install and at all times maintain in good condition an "RF Notice" sign and a network operations center sign adjacent to all access points of the site. The signs required in this condition must be placed in a location where they are clearly visible to a person approaching the access point(s) whether in the open or closed positions.
3. The permittee shall ensure that all signage complies with FCC OET Bulletin 65 and ANSI C95.2 for color, symbol, and content conventions. All such signage shall at all times provide a working local or toll-free telephone number to its network operations center, and such telephone number shall be able to reach a live person who can exert transmitter shut-down control over this site as required by the FCC.

These recommended conditions are based on the site in its proposed location and equipment configuration. To the extent that any changes are made to the proposal, a revised analysis may be necessary.

### **3.3. RF Compliance with City of Berkeley Municipal Code**

Finally, TLF recommends that the City also require that Verizon expressly agree to follow all of the City's Municipal Code pertaining to RF safety, including but not limited to:

- BMC 16.10.100 Maintenance of facilities--Continuing obligations § G
- BMC 23C.17.040 Minimum Application Requirements § D (sworn statement)
- BMC 23C.17.090 Requirement for Certification of Facilities in its entirety (post construction)

/TLF





June 6, 2019

City of Berkeley  
 Planning and Development Department  
 2120 Milvia Street, 2<sup>nd</sup> Floor  
 Berkeley, CA 94704

RE: Verizon Wireless Annual Compliance Certification – City of Berkeley, CA

This letter is to certify that Verizon sites within the City of Berkeley are operating within FCC compliance and Verizon is in compliance with section 23C.17090 A1 and 2 of the Zoning Ordinance. The Verizon Wireless Facilities within the City of Berkeley are listed below.

Site Number	Location Name	Street Address
123269	ADELIN MLK	3332 Adeline Street
288227	BANCROFT & PIEDMONT	2700 Bancroft Way
123276	BERKELEY B2B	9th Street and Heinz Avenue
156621	BERKELEY BENKINS	2721 Shattuck Avenue
123562	BERKELEY DT	2199 Addison Street
123223	BERKELEY-CLAREMONT	2942 Domingo Avenue
291090	COLLEGE & DWIGHT	2750 Dwight Way
291094	DWIGHT & SACRAMENTO	2517 Sacramento Street
262658	FOURTH ST SC1	423 Delaware Street
308578	FOURTH ST SC3	717 Virginia Street
184292	GILMAN ST	1050 Gilman Street
286640	HWY 80 GILMAN	1285 Eastshore Highway
123232	HWY 80/UNIVERSITY	611 Hearst Street
123316	KENSINGTON CIRCLE	1760 Solano Avenue
157070	LOWER UNIVERSITY	2002 Acton Street
123338	SHATTUCK NORTH	1540 Shattuck Avenue
123335	SHATTUCK SOUTH	2855 Telegraph Avenue
291893	SOUTHWEST BERKELEY SC1	2502 10th Street
291894	SOUTHWEST BERKELEY SC2	Parker & 9th Street
291895	SOUTHWEST BERKELEY SC3	2501 8th Street
291896	SOUTHWEST BERKELEY SC4	910 Parker Street

291897	SOUTHWEST BERKELEY SC5	2657 9th Street
291898	SOUTHWEST BERKELEY SC6	Parker & 10th Street
123322	UC BERKELEY EAST	Barrows Hall Rooftop
166863	UC BERKELEY SOUTH SIDE	2500 Durant Avenue

Thank you,

*Scott Stewart 6/6/19*

Scott Stewart  
Director of Real Estate Northern California/Northern Nevada  
**Verizon Wireless**





**HAMMETT & EDISON, INC.**  
CONSULTING ENGINEERS  
BROADCAST & WIRELESS

WILLIAM F. HAMMETT, P.E.  
RAJAT MATHUR, P.E.  
ROBERT P. SMITH, JR.  
ANDREA L. BRIGHT, P.E.  
NEIL J. OLIJ, P.E.  
BRIAN F. PALMER  
MANAS REDDY  
M. DANIEL RO

ROBERT L. HAMMETT, P.E.  
1920-2002  
EDWARD EDISON, P.E.  
1920-2009

DANE E. ERICKSEN, P.E.  
CONSULTANT

**BY EMAIL CHELSEA.RODDAN@RIDGECOMMUNICATE.COM**

June 11, 2019

Ms. Chelsea Roddan  
Site Acquisition Project Coordinator  
Ridge Communications, Inc.  
12919 Alcosta Boulevard, Suite 1  
San Ramon, California 94583

Re: Supplemental Information for Peer Review

Dear Chelsea:

Thanks for sending along a request from the City of Berkeley regarding the review by Rincon Consultants, Inc., of our acoustic analysis of the proposed Verizon Wireless base station (Site No. 273566 "Berkeley Hills"), dated May 24, 2019. We appreciate the opportunity to provide this response. The substance of Rincon's analysis was three comments, addressed in turn below.

*"Page 3, Table listing equipment and associated noise levels. The table list three different types of equipment. Rincon has evaluated the noise level data presented. The data for the Generac SD030 states the noise level with a Level 2 enclosure would be 62 dBA at 23 feet. This information does not match the noise level data provided by the manufacturer that is available online, which shows a noise level of 68 dBA with a Level 2 cover at 23 feet. The analysis does not offer enough detail to determine how the noise level reported in the table was derived. It appears the reduced noise level is associated with the short testing time; however, that is not clear. Please revise the analysis to show the published noise levels and list all assumptions and calculations incorporated into the analysis."*

Rincon assumes the Generac generator will be installed with a Level 2 sound enclosure, while we had specified in the report that a "Level 2A" enclosure would be used. This is an enclosure model specific to Verizon's use of Generac equipment. Our source for the acoustic level for this unit is attached to this letter as Exhibit 1, which shows maximum noise during no-load testing equal to 62 dBA at 23 feet (7 meters), as we had reported.

Ms. Chelsea Roddan, page 2  
June 11, 2019

*“Page 3, Table listing equipment and associated noise levels. The table lists two different types of Charles Industries equipment, CUBE-SSA4C215XC1 and CUBE-PM639. Rincon contacted Charles industries to verify the reported noise levels; however, Rincon was unable to verify the noise level data for these units for a couple of reasons. Charles Industries indicated the CUBE-PM639 is not a proper model number. The model number is missing several designations to identify the actual unit proposed. Charles industries also indicated the noise level data is based on a 1-meter distance. Please include the specification sheets of all the proposed units with the manufacture’s noise level data used in the analysis and the calculations used to determine the noise level at the nearest residence in an appendix.”*

Our acoustic data for the Charles Industries CUBE cabinets is based on our firm’s correspondence with Charles Industries representatives and its suppliers over several years. Rincon is correct that the CUBE PM-639 is not a single model of cabinet, but rather a family of similar cabinets (so called “CUBE-PM639 Series”). The documents attached as Exhibit 2A list the several possible HVAC units that could be installed within this series of cabinets; the worst-case noise from any of the DC variants of this series, which Verizon has indicated it uses, is 65 dBA at a reference distance of 1.5 meters, which we used in our report.

The Model CUBE-SSA4C215XC1’s noise level was calculated using information provided by Charles Industries and summing the individual noise-generating components within a single CUBE-SSA4C215XC1 unit. Our data from the manufacturer (Exhibit 2B) notes that a single unit would contain one Dantherm 750-watt 48 VDC heat exchanger (65 dBA at 1.5 meters, Exhibit 2B.1) and two Delta 200-watt thermoelectric coolers (64 dBA at 1 meter, Exhibit 2B.2). The cumulative acoustic level from the three units is 67.3 dBA at 1.5 meters, which is the value we used in our report.

*“Page 3, Paragraph following the table listing equipment and associated noise levels. The analysis of noise levels the combined noise level from the project with the ambient noise level. This is inappropriate as the City noise level limits are applicable only to the noise source and should not be evaluated by adding the source to the ambient noise level. As stated in Section 13.040.050, “No person shall operate or cause to be operated any source of sound at any location within the incorporated City or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person...” Thus the noise limits apply only to the source being operated. Please revise the analysis to remove the discussion of project plus ambient.”*

While we appreciate Rincon’s alternate interpretation of the City’s noise limits, it should be noted that Rincon’s methodology would result in an overall lower noise level. Using our conservative method, which included 24-hour monitoring of ambient noise levels, we found that the additive noise level would comply with the pertinent limits, and Rincon does not dispute that result. By definition, the proposal would also comply using Rincon’s methodology.

Ms. Chelsea Roddan, page 3  
June 11, 2019

We appreciate the opportunity to provide this supplemental information. We hope that Rincon finds it satisfactory and concludes that the proposed operation will indeed comply with the City's noise limits. Please let us know if any further questions arise.

Sincerely yours,

A handwritten signature in blue ink that reads "Bill Hammett". The signature is written in a cursive style with a long horizontal stroke extending to the right.

William F. Hammett, P.E.

scn

Enclosure

# EXHIBIT 1

## GENERAC®

**SD030**  
**2.4 Liter Level 2A**

### Octave Band Sound Data SD030 2.4 Liter Diesel

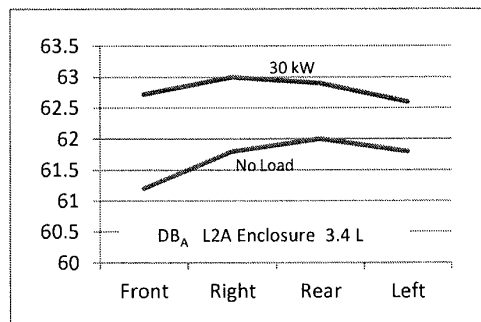
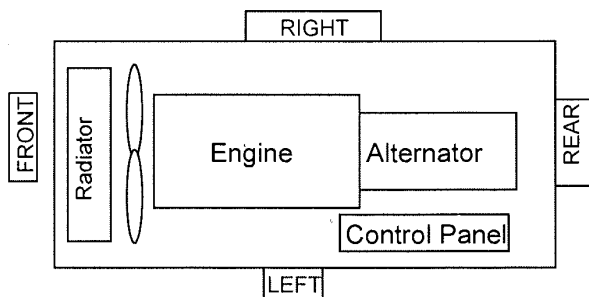
<b>Test Date</b>	3/14/2013	<b>Engine Firing Frequency</b>	60
<b>Test Request #</b>	A-2-3738A- T12	<b>Alt Fan Frequency</b>	480
<b>Generator Model</b>	SD030 2.4 Liter	<b>Cooling Fan Frequency</b>	416
<b>Enclosure</b>	Level 2 A Verizon	<b>Test Conditions</b>	Sunny
<b>Unit Dimensions</b>		<b>Temp ° F</b>	58
<b>Engine</b>	2.4 Liter Generac Diesel	<b>Barometric Pres</b>	30.65
<b>Alternator</b>	30 kW 390 mm 240V 1 Ø	<b>Wind Speed mph</b>	2-4
<b>Engine Speed</b>	1800	<b>Muffler</b>	Standard
<b>Test Location</b>	Waukesha	<b>Fuel</b>	#2 Diesel
<b>Instrument</b>	TES1358		

**Test Load: 0 kW      240 Volt      Distance 7 Meters**

MICROPHONE LOCATION	OCTAVE BAND CENTER FREQUENCY									
	31.5	63	125	250	500	1000	2000	4000	8000	dB <sub>A</sub>
FRONT	24.9	50.0	55.5	49.6	55.1	47.5	45.7	41.5	33.9	61.2
RIGHT	25.0	52.0	55.5	50.5	56.5	48.2	50.4	42.3	38.4	61.8
REAR	26.8	47.4	52.5	52.1	56.5	51.5	48.3	44.8	35.8	62
LEFT	24.0	43.4	54.6	48.0	57.2	46.6	46.7	43.6	36.9	61.8
<b>Average</b>	<b>25.2</b>	<b>48.2</b>	<b>54.5</b>	<b>50.0</b>	<b>56.3</b>	<b>48.4</b>	<b>47.8</b>	<b>43.0</b>	<b>36.3</b>	<b>61.7</b>

**Test Load: 30 kW      240 Volt      Distance 7 Meters**

MICROPHONE LOCATION	OCTAVE BAND CENTER FREQUENCY									
	31.5	63	125	250	500	1000	2000	4000	8000	dB <sub>A</sub>
FRONT	21.7	59.7	54.3	49.1	56.1	47.5	46.5	42.1	34.5	62.7
RIGHT	21.3	58.5	56.4	52.5	55.4	50.7	53.0	44.2	38.8	63.0
REAR	24.1	55.9	51.9	53.1	56.7	52.0	48.8	45.0	34.8	62.9
LEFT	26.6	47.7	53.5	48.8	57.5	47.2	48.1	43.4	37.4	62.6
<b>Average</b>	<b>23.4</b>	<b>55.5</b>	<b>54.0</b>	<b>50.9</b>	<b>56.4</b>	<b>49.4</b>	<b>49.1</b>	<b>43.7</b>	<b>36.4</b>	<b>62.8</b>



1. All positions at 23 feet (7 meters) from side faces of generator set.
2. Test conducted on a 100 foot diameter asphalt surface.
3. Data subject to change without notice

10,000BTU HVAC AC

# Exhibit 2A

## TECHNICAL DATA 10,000 BTU/HR. AIR CONDITIONER

<b>General</b>		
Model number		AC 10000B
Mounting method		Outdoor
Unit dimensions (height×width×depth)	Inch [mm]	47.3×19.3×12.2 [1201×490×309]
Weight	lbs [kg]	115 [52]
<b>Performance</b>		
Max. Cooling at 131°F internal/ 131°F ambient (55°C/55°C)	BTU/h [W]	10700 [3133]
Max. Cooling at 95°F internal/ 95°F ambient (35°C/35°C)	BTU/h [W]	10170 [2977]
Internal airflow by air conditioning - maximum	CFM [m³/h]	450 [765]
External airflow by air conditioning - maximum	CFM [m³/h]	710 [1205]
Refrigerant type		R134a
Operational temperature range	°F [°C]	-40 to 131 [-40 to 55]
Noise, 1.5m distance	dB(A)	65
Heater	Watts	2000
<b>Electrical Data</b>		
Input voltage	Volts	208/230 VAC
Frequency	Hz	50/60 Hz
Max. power consumption (Cooling) @ 55°C/55°C	Amps	11.0
<b>Approvals</b>		
RoHS, UL and cUL compliant	✓	SA10718
<b>Construction</b>		
Material		Galvanized Steel, Stainless Steel Optional
Finish		Textured Powder Coat Standard, Color options available by request

10,000BTU HVAC DC

## TECHNICAL DATA 10,000 BTU/HR. AIR CONDITIONER

<b>General</b>		
Model number		Air Conditioner 10000Z
Mounting method		Outdoor
Unit dimensions (height×width×depth)	Inch [mm]	47.3×19.3×12.2 [1201×490×309]
Weight	lbs [kg]	115 [52]
<b>Performance</b>		
Max. Cooling at 131°F internal/ 131°F ambient (55°C/55°C), -54vdc	BTU/h [W]	10700 [3133]
Max. Cooling at 95°F internal/ 95°F ambient (35°C/35°C), -54vdc	BTU/h [W]	10170 [2977]
Internal airflow by air conditioning - maximum	CFM [m³/h]	450 [765]
External airflow by air conditioning - maximum	CFM [m³/h]	710 [1205]
Refrigerant type		R134a
Operational temperature range	°F [°C]	-40 to 131 [-40 to 55]
Noise, 1.5m distance	dB(A)	65
Heater	Watts	500
<b>Electrical Data</b>		
Input voltage	Volts	48 VDC, +20%/-15%
Max. power consumption (Cooling) @ 55/55, -54vdc	Amps	29.0
Max. power consumption (Cooling) @ 35/35, -54vdc	Amps	21.0

4,000BTU HVAC DC

This table shows the technical data for 4000 & 6000 BTU models.

Specification	Unit	DC Air Conditioner 4000Z	DC Air- Conditioner 6000Z
Mounting Method		Outdoor	
Unit dimensions (height×width×depth)	Inch [mm]	29.0x17.3x11.3 [737x439x286]	
Weight	lbs [kg]	90 [40]	
<b>Performance 48VDC (40-60 VDC)</b>			
Cooling capacity at 131°F internal/ 131°F ambient (55°C/55°C)	BTU/h [W]	4200 [1230]	5900 [1730]
Cooling capacity at 95°F internal/ 95°F ambient (35°C/35°C)	BTU/h [W]	3900[1140]	5300 [1550]
Internal airflow by air conditioning	CFM [m <sup>3</sup> /h]	250[425]	300[509]
External airflow by air conditioning	CFM [m <sup>3</sup> /h]	250[425]	300[509]
Refrigerant type		R134a	
Operational temperature range	°F [°C]	-40→131 [-40 to 55]	
Noise, 1.5m distance	dB(A)	<62	<65
Heater	Watts	500	700



# Exhibit 2B



LT-SS4C215XC1  
Equipment Issue 1  
4th Printing, March 2014

## Charles Universal Broadband Enclosure (CUBE) SS4C215XC1 Description

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3. CUBE WIRING AND EQUIPMENT .....	1
4. TECHNICAL ASSISTANCE & REPAIR SERVICE .	4
5. WARRANTY & CUSTOMER SERVICE .....	4
6. SPECIFICATIONS .....	4

### 1. DOCUMENT PURPOSE

This document provides additional information for the Charles Industries' Universal Broadband Enclosure CUBE-SS4C215XC1 that is not covered in the site support family document LT-SS24SS48. A front view of the CUBE is shown in Figure 1.

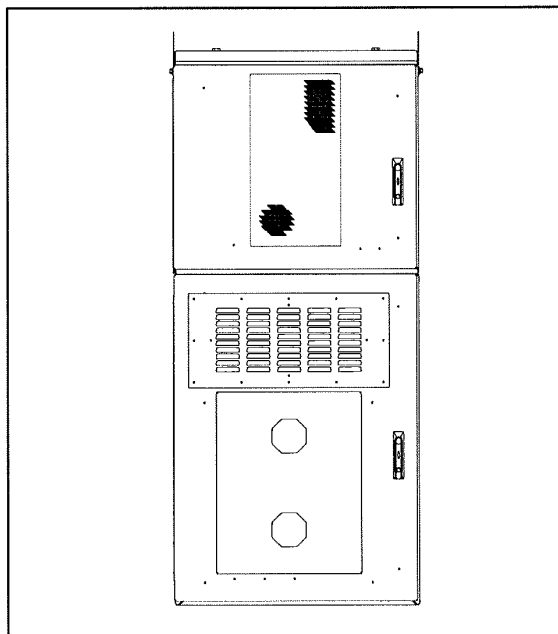


Figure 1 Closed view of the CUBE

### 2. PRODUCT DESCRIPTION

This section contains information for the CUBE's physical design and interior components. The CUBE is 74" high and has an equipment compartment and a battery compartment that has three battery trays. Additional equipment in this CUBE is the 48VDC power system. Figure 2 shows the main components of the CUBE.

### 3. CUBE WIRING AND EQUIPMENT

After the CUBE is properly mounted in the desired location, install power, ground and battery connections. Refer to Figure 3 for a block diagram of the internal wiring.

**- WARNING -**  
**Perform all bonding and grounding connections prior to any electrical and communications connections.**

#### 3.1 Making Ground Connections

There is one 2x8 position ground bar in the equipment compartment. This should be used for all grounding of internal equipment. There are two external double lugs on the bottom rear of the cabinet for connecting site ground wires

#### 3.2 AC Voltage Connections

The installer connects the utility's incoming single phase 220VAC 60Hz (100A max) to the enclosure.

#### 3.3 GE Infinity S Power System

The GE Infinity S power system ships with (4) 48VDC 50A rectifiers. The DC distribution shelf supports both 24V and 48V. The DC converters are not provided for the 24VDC output. 48VDC distribution includes (14) 30A load breakers, a 20A breaker for the thermal electric coolers (TEC) in the battery compartment, a 5A for the heat exchanger and a 6 position GMT fuse panel.

The 2AWG battery cables are connected to the bulk output on the rear of the power system.

Refer to the GE power supply documentation located inside the CUBE for information regarding the power supply operation and configuration.

#### 3.4 Heat exchanger

The 750W heat exchanger in the equipment compartment has a speed controller and is connected to a 5A circuit breaker on the 48V power system. The heat exchanger is a light weight, low power, long life maintenance free cabinet cooler that is mounted on the

LT-SS4C215XC1



door. The closed loop unit transfers the heated internal air to the outside while pulling the cool ambient air to the inside. For more information, refer to the heat exchanger documentation found inside the CUBE.

### 3.5 Thermal Electric Cooler (TEC) Connections

The two 200W TEC devices are covered by a shroud with their wiring tied in parallel and routed thru a relay that is controlled by a thermostat. The thermostat is set to 25°C with an adjustable range of 0 to 60°C. The wiring is then connected to the 20A circuit breaker on the 48V DC power system in the equipment compartment.

### 3.6 Converting to Ni-Cd batteries

This CUBE is configured for VRLA batteries. The CUBE can be converted to use Ni-Cd batteries by doing the following steps.

1. Remove the side and rear retaining battery brackets by removing the six hex head screws.
2. The battery temperature probes are no longer needed and can be removed and disabled from the power supply configuration.
3. Replace battery cables with battery cable #03-200728-0.
4. The Ni-Cd batteries are temperature hardened and therefore the TEC thermostat can be changed to 50°C to conserve power.

### 3.7 Verifying the installation

Verify that earth ground and all grounding and bonding is complete and functional. After verifying that all installer connections are secure and complete, apply AC power and verify that equipment turns up correctly.

## 4. TECHNICAL ASSISTANCE & REPAIR SERVICE

For questions on product repair or if technical assistance is required, contact Charles Technical Support at:

847-806-8500  
800-607-8500  
847-806-8556 (FAX)  
techserv@charlesindustries.com (email)  
[http://www.charlesindustries.com/main/tech\\_support.htm](http://www.charlesindustries.com/main/tech_support.htm)

## 5. WARRANTY & CUSTOMER SERVICE

Charles Industries, Ltd. offers a 1 year warranty on the CUBE product. The Charles warranty is limited to the operation of the CUBE hardware as described in this documentation and does not cover equipment which may be integrated by a third party. The terms and conditions applicable to any specific sale of product shall be defined in the resulting sales contract. For questions on warranty or other customer service assistance, contact your Charles Customer Service Representative at:

847-806-6300  
847-806-6653 (FAX)  
mktserv@charlesindustries.com (email)  
[http://www.charlesindustries.com/main/telecom\\_sales\\_support.htm](http://www.charlesindustries.com/main/telecom_sales_support.htm)

## 6. SPECIFICATIONS

The physical specifications are shown in Table I.

Color	Off-White
Size and Weight	74x32x32" 740lbs empty, 1990lbs fully loaded
Battery Tray Size	12.75"H x 21"W x 27"D
Materials: Cabinet Battery Trays	.125 welded Aluminum 10GA Steel
Equipment Rack Space	15RU 23" EIA Hole Spacing
Equipment Heat Exchanger	Dantherm 750W 48VDC
48VDC Power System	GE Infinity S #NES4824-23-AC5-PS8-DC 2E
Thermal Electric Cooler	(2) 200W 48VDC
Bonding and Grounding	One 2x8 Position Ground Bar in equipment compartment
Covered Bus Bars	2 hole on .625" spacing with 1/4"-20 threaded holes and screws
Battery Type	48V VRLA
Filter	#39-000187-0
Replacement Gasket	#39-000352-0
Operating Temp. Range, Inside Enclosure	-40° to +149°F, -40° to 65°C
Operating Temp. Range, Outside Enclosure	-40° to +115°F, -40° to 46°C
Humidity	0 to 95% (non-condensing)
Altitude	Up to 2,000 meters (6560')

Table 1 CUBE Physical Specifications





LT-SS4C215XC1

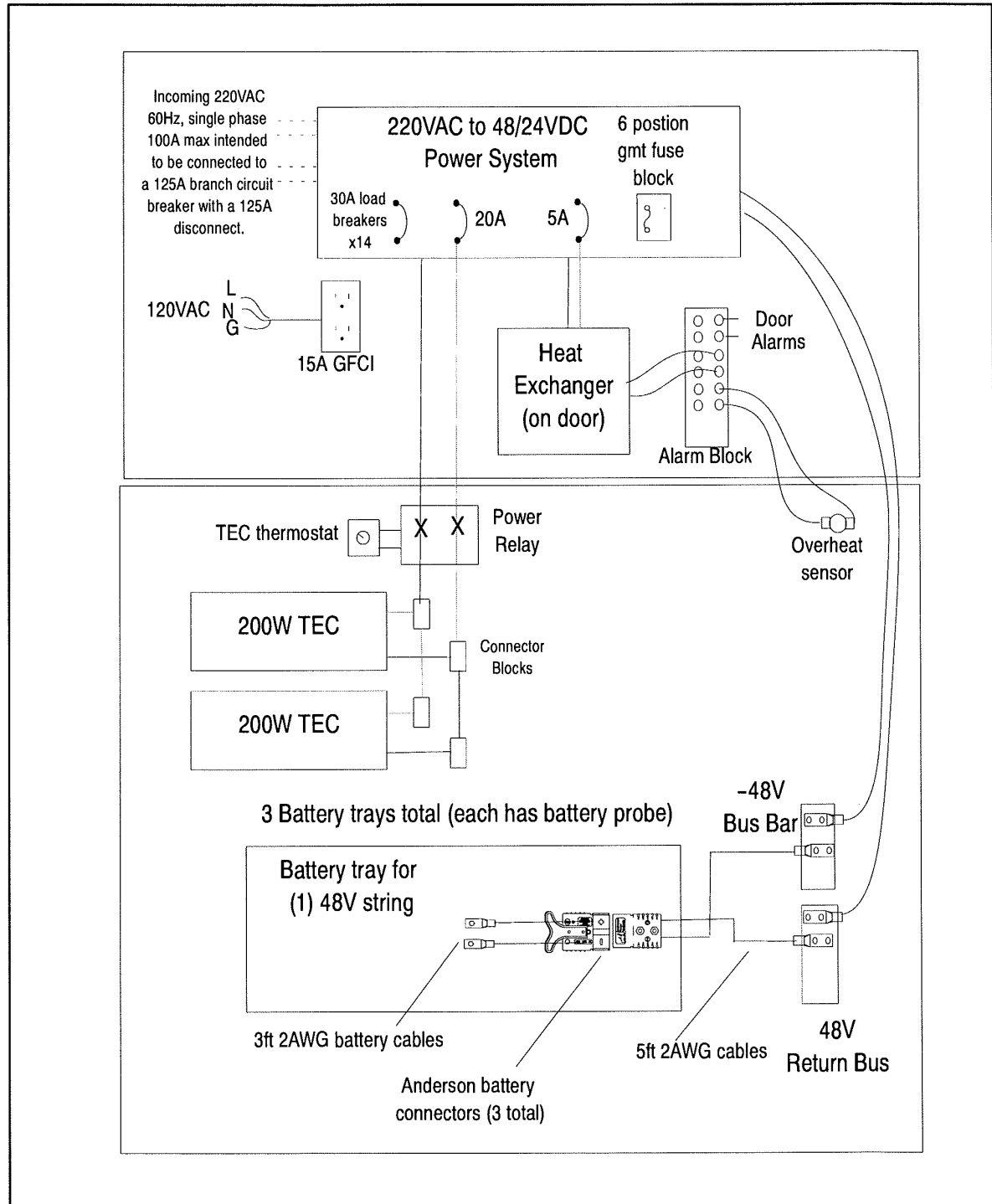


Figure 3 Block Diagram for the SS4C215XC1

LT-SS4C215XC1

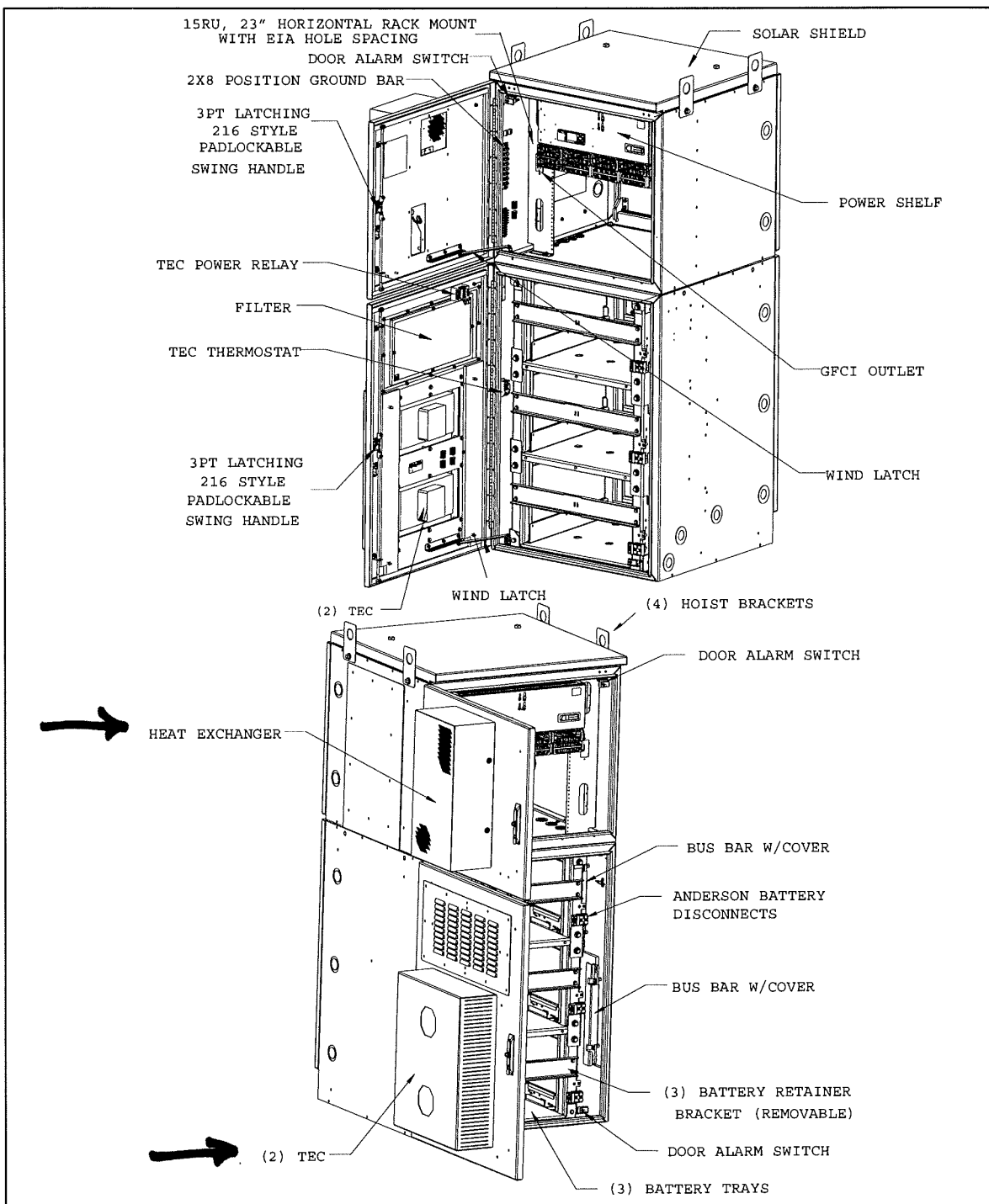
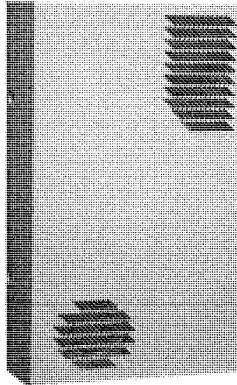


Figure 2 CUBE Components

# Exhibit 2B.1

**Dantherm®**  
CONTROL YOUR CLIMATE



## HEAT EXCHANGER 22 PS023022

DANTHERM's Heat Exchangers are specifically designed for the removal of heat from cabinets containing temperature-sensitive electrical, electronic, or telecommunications equipment. Closed-loop cooling maintains a clean, sealed internal environment to ensure optimum performance and maximum life of the enclosed electronics, while protecting against the intrusion of airborne contaminants and humidity.

### FEATURES AND BENEFITS

#### Standard Features

- Closed-loop cooling to prevent ingress of environmental contaminants
- Filterless design requires little to no service
- Compact, lightweight unit for easy installation
- Environmentally-friendly design, CFC and refrigerant-free
- High-quality, high-performance, high-pressure drop BCI fans
- Efficient-coated aluminum cross-flow core
- Engineered for extreme and/or corrosive environments
- Designed in accordance with GR-487 specifications

#### Optional Features

- Fan speed controller with alarm test sequence
- Stainless steel material and custom paint finishes
- Extended warranty & maintenance packages

#### Closed-Loop Cooling

The closed-loop internal circuit protects the enclosed equipment from heat and airborne contaminants in all types of hostile environments. The creation of a controlled environment allows the enclosed equipment to operate under the best possible temperature and environmental conditions.

#### Applications

- Radio base stations
- Telecom shelters
- Indoor & outdoor cabinets and enclosures
- Power supply cabinets, Battery cabinets and Rectifier cabinets
- Network switching rooms, Computer rooms
- Automation control cabinets, Process control centers
- Machine cooling & CNC machines
- Drive cabinets, Turbine control cabinets
- Digital advertisement boards, Kiosk display systems

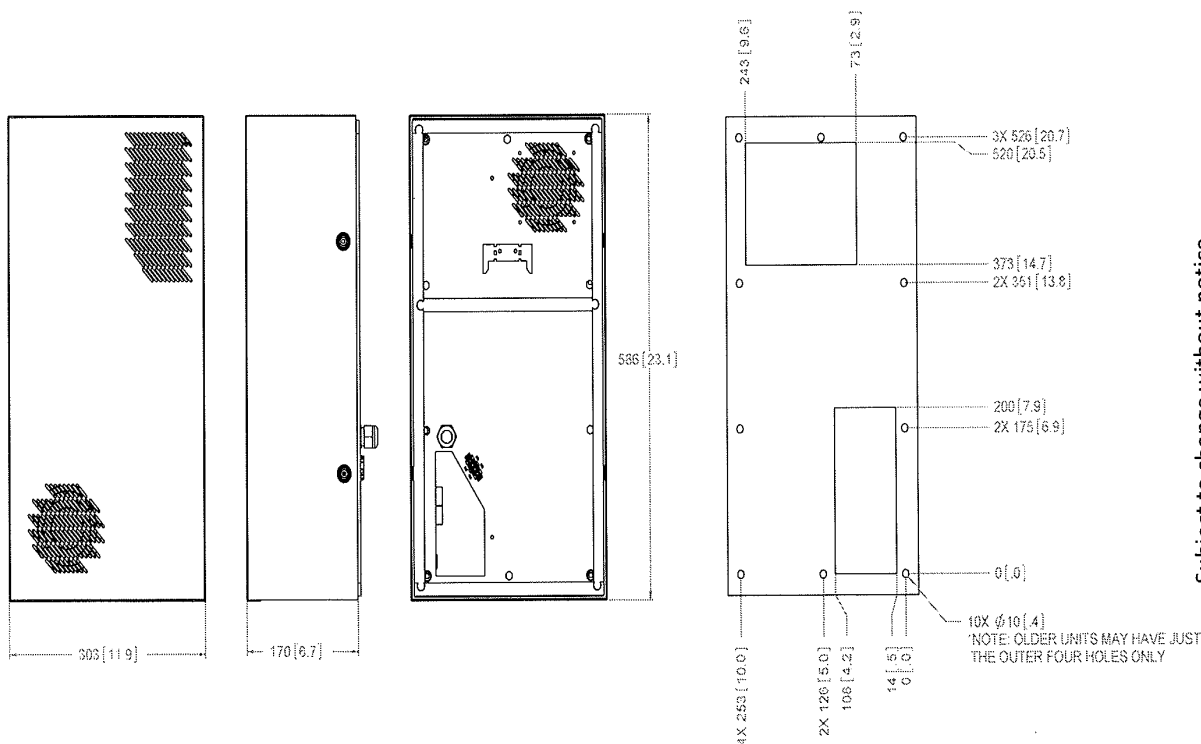


**TECHNICAL DATA**  
**HEAT EXCHANGER 22**

<b>General</b>					
Model number		PS023022A	PS023022B	PS023022Z	PS023022Y
Mounting method		Outdoor			
Unit dimensions (height×width×depth)	Inch [mm]	23x12x7 [584.2x304.8x177.8]			
Weight	lbs [kg]	23 [10.5]			
<b>Performance</b>					
Cooling Capacity	W/°F [W/°C]	22 (40)			
Operational temperature range	°F [°C]	-40 to 149 [-40 to 65]			
Noise (1.5m distance)	dB(A)	65			
<b>Electrical Data</b>					
Input voltage	Volts	120 VAC	240 VAC	48 VDC	24 VDC
Current	Amps	0.5	0.3	1.75	2.3
<b>Approvals</b>					
RoHS, UL and cUL compliant	✓	UL file SA12349			
<b>Construction</b>					
Material		Aluzink Standard, Stainless Steel Optional			
Finish		Textured Powder Coat Standard, Color options available by request			



**DIMENSIONAL DIAGRAM-MOUNTING INTERFACE**



Subject to change without notice  
08\_2014

Exhibit 2B.2

99-004478-0  
HET200PB-002  
W/NORM CLOSED ALARM



**Specification For Approval**

Customer : \_\_\_\_\_  
Description : Thermal Electric Cooling 200W  
Customer part no : \_\_\_\_\_ Rev. : \_\_\_\_\_  
Delta model no : HET200PB Rev. : 03  
Sample issue no : \_\_\_\_\_  
Sample issue date : JUN .21.2013

Modify history

Rev.	Description	Drawn	Approved	Issue Date
00	ISSUE SPEC	Nick Wang	Diamond Chen	2012/1/18
01	Adding 2-4 & 6	Ted.Tu	Diamond Chen	2012/12/12
02	Modify the noise.	Nick Wang	Diamond Chen	2013/4/16
03	Add the safety trademark	Nick Wang	Diamond Chen	2013/06/21

Please send one copy of this specification back after you signed approval for production pre-arrangement

Approved by : \_\_\_\_\_

Date : \_\_\_\_\_

DELTA ELECTRONICS, INC.  
252, SHANG YING ROAD, KUEI SAN  
TAOYUAN HSIEN 333, TAIWAN, R. O. C.

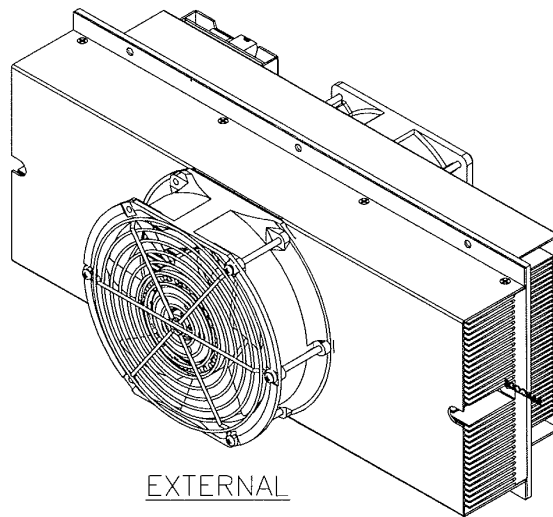
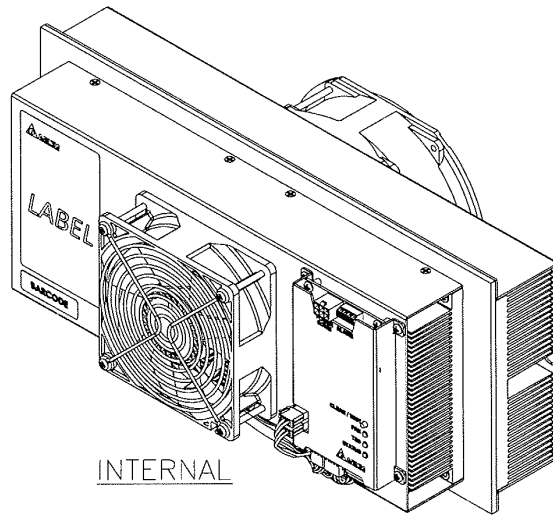
TEL : 886-(0)3-3591968  
FAX : 886-(0)3-3591991

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Specification for approval

Customer :  
Description : Thermal Electric Cooling 200W  
Customer P/N : Rev :  
Delta model no. : HET200PB Rev. : 03  
Sample revision : Issue no. :  
Sample issue date : Quantity : sets



Part no. :

Delta model no. : HET200PB

**1. Description**

**1-1. General description :**

The Thermal Electric Cooling (TEC) is designed for direct air to air heat removal in the cabinet. It is easy to be installed in the cabinet (recommended on the door of the cabinet) with the nuts.

The internal and external air circulation loops of the TEC Module are separated to prevent the entry of dust, humidity and dirt. The unit conforms to IP55 protection rating on the external air circuit.

**1-2. Main feature (Operating 48VDC at 25 ° c)**

Main feature	Unit	Model Number
		HET200PB
Outline dimension	mm	400 H x 180 W x 208 D
Weight	Kg	9.0 ± 0.5
Cooling capacity ( $\Delta T = 0 \text{ }^\circ\text{C}$ )	W	200
Heating capacity @-40 ° C	W	225
Rated voltage	VDC	48 (TYP.)
Operating voltage range	VDC	40~56
Rated Current	A	6.7 (TYP.)
Rated Consumption	W	321.6
Operating temperature	°C	-40~55
Internal airflow rate	cfm	100 (TYP.)
External airflow rate		120 (TYP.)
Acoustic noise at 1M : (Sound pressure)	dB-A	61.0 dB-A(Typ.)
		64.0(Max.)



Cooling and heating capacity is for internal side.





Planning and Development Department  
Land Use Planning Division  
1947 Center Street, 2<sup>nd</sup> Floor  
Berkeley, CA 94704

## ZONING ADJUSTMENTS BOARD NOTICE OF PUBLIC HEARING

**SUBJECT: 0 Euclid Avenue – Berryman Reservoir  
Use Permit #ZP2018-0236**

**WHEN: Thursday, June 27, 2019.  
Meeting starts at 7:00 pm.**

**WHERE: Berkeley Unified School District Board Room  
1231 Addison Street  
*Wheelchair accessible.***

«NAME1»

«NAME2»

«ADDRESS1», «ADDRESS2»



**SUBJECT: 0 Euclid Avenue – Berryman Reservoir**

Use Permit #ZP2018-0236 to establish a new 50' high "monopole" 4G LTE wireless facility operated by Verizon Wireless at the East Bay Municipal Utility District site consisting of six antennas, six remote radio units, and associated ground equipment.

**CEQA STATUS:** Categorically exempt pursuant to Sections 15301 and 15303 of the CEQA Guidelines ("Existing Facilities and New Construction or Conversion of Small Structures")

**NOTICE CONCERNING YOUR LEGAL RIGHTS:**

If you challenge the decision of the City in court, you may be limited to raising only those issues you or someone else raised at the public hearing or in written correspondence delivered to the Board at, or prior to, the public hearing.

All persons are welcome to attend the hearing and will be given an opportunity to address the Board. Comments may be made verbally at the public hearing and/or in writing before the hearing. The Board may limit the time granted to each speaker.

Send written comments to: Zoning Adjustments Board, 1947 Center Street, 2nd Floor, Berkeley, CA 94704, or e-mail to: [ZAB@CityofBerkeley.info](mailto:ZAB@CityofBerkeley.info). To ensure inclusion in the packet, submit correspondence seven (7) days before the hearing. For any correspondence submitted less than seven days before the meeting, submit 15 copies for staff to deliver to the Board at its meeting. For more information, call the Land Use Planning division (510) 981-7410.

This meeting is being held in a wheelchair accessible location. To request a disability-related accommodation(s) to participate in the meeting, including auxiliary aids or services, please contact the Disability Services specialist at 981-6418(V) or 981-6347(TDD) at least three business days before the meeting date. Please refrain from wearing scented products to this meeting.

**Post and Mail Date:**  
**June 12, 2019**

PLEASE NOTE: If your contact information is included in any communication to the Board, it will become part of the public record, and will be accessible on the City Website.

The Zoning Application for this project is available at the Permit Service Center, 1947 Center Street, Berkeley, and at our website:

<http://www.cityofberkeley.info/zoningapplications>

The agenda and staff report for this meeting will be available 3 to 5 days prior to this meeting at the Permit Service Center, 1947 Center Street, Berkeley, and at our website:

<http://www.cityofberkeley.info/zoningadjustmentsboard>

0 Euclid Ave

125 notices

mailed out 06-12-19

NAME1	NAME2	ADDRESS1	ADDRESS2
Berkeley Hills Progressive Neighbors	861 REGAL RD	BERKELEY CA	94708
North East Berkeley Association	P.O. BOX 7477	BERKELEY CA	94707
Scenic Avenue (1400 Block) Neighborhood	1418 SPRING WAY	BERKELEY CA	94708
University of California, Facilities Services	A&E Building, Room 300 University of California Berkeley	BERKELEY CA	94720-1382
Bananas Inc.	5232 CLAREMONT AVE	OAKLAND CA	94618
Berkeley Central Library	2090 KITTREDGE STREET	BERKELEY CA	94704
Adams Broadwell Joseph & Cardoza	601 GATEWAY BLVD. Su 1000	SO SAN FRANCISCO CA	94080
Public Notice Journal	PO Box 330356	SAN FRANCISCO CA	94133
FADLEY CHARLES S & SUSAN N TRS	1 TAMALPAIS RD	BERKELEY CA	94708
CORCOS ANN B	100 BAY PL, #2117	OAKLAND CA	94610
MARSH DOROTHY TR & MARSH JULIE ETAL	100 CODORNICES RD	BERKELEY CA	94708
HURLBUT DOUGLAS F TR & HURLBUT CATHERINE J	117 STONEHENGE RD	CAMILLUS NY	13031
PASZTY NICK & PELLETIER GAY TRS	1304 BAY VIEW PL	BERKELEY CA	94708
HUNT SANDRA S & JEFFREY L TRS	1305 BAY VIEW PL	BERKELEY CA	94708
STOCK WENDY E	1306 BAY VIEW PL	BERKELEY CA	94708
REINOLD LUCINDA K TR	1306 EUCLID AVE	BERKELEY CA	94708
BALDWIN KENT B	1314 EUCLID AVE	BERKELEY CA	94708
MARING PRESTON J. & PEACOCK PHYLLIS A. TRS	1345 BAY VIEW PL	BERKELEY CA	94708
LEIMAN OREN	1348 EUCLID AVE	BERKELEY CA	94708
KESTELL DAVID J & BUDWORTH HELEN L	1351 SCENIC AVE	BERKELEY CA	94708
GILBERG ALEXANDER & DALIT TRS	1355 SCENIC AVE	BERKELEY CA	94708
TRACY STEPHEN R	1370 EUCLID AVE	BERKELEY CA	94708
SEPHTON BRIAN T & KLINGENBERG ANITA	1373 WINDY RIDGE CT	LONGWOOD FL	32750
DILLON ROBERT L & ANNIE O TRS	1382 EUCLID AVE	BERKELEY CA	94708
BAER ALAN B & SOLOMON LYNNE H TRS	1386 EUCLID AVE	BERKELEY CA	94708
DRISCOLL JOANN M	1400 EUCLID AVE	BERKELEY CA	94708
CLEWANS HARRY M & MEADE KELLEY	1400 HAWTHORNE TER	BERKELEY CA	94708
CHEN ALBERT & RICHARD CHRISTELLE TRS	1402 HAWTHORNE TER	BERKELEY CA	94708
KOSTICK NEIL S & MARGARET B TRS	1404 HAWTHORNE TER	BERKELEY CA	94708
BERGER MARK N & WENGRAF SUSAN E TRS	1404 LE ROY AVE	BERKELEY CA	94708
FOURTEEN O SIX EUCLID HOMEOWNERS ASSOC	1406 EUCLID AVE	BERKELEY CA	94708
WALKER JAYNE L & REID DAVID G	1406 EUCLID AVE, 1	BERKELEY CA	94708
NIXON CORNELIA TR	1406 EUCLID AVE, 3	BERKELEY CA	94708
DODORICO PAOLO TR	1406 EUCLID AVE, 6	BERKELEY CA	94708
ATWOOD BRYAN H III & CINDY C TRS	1406 HAWTHORNE TER	BERKELEY CA	94708
WAGNER DAVID & NASS SIMONA	1406A HAWTHORNE TERRACE	BERKELEY CA	94708
ANGELL ALEXANDER S & MANESSIOTIS EVA A TRS	1407 EUCLID AVE	BERKELEY CA	94708
HARRIS JOHN TR	1408 HAWTHORNE TER	BERKELEY CA	94708
SOTO BENJAMIN T & PEREZ CATALINA K ETAL	1421 EUCLID AVE	BERKELEY CA	94708
HUSBAND REBECCA & MEYER THOMAS I TRS	1429 EUCLID AVE	BERKELEY CA	94708
SALVESON MICHAEL J & DELVAUX GEORGETTE TRS	1430 LE ROY AVE	BERKELEY CA	94708
KINLOCH BOHUN B JR TR	1440 LE ROY AVE	BERKELEY CA	94708
MYERS ALLEN R & REGINA G	1610 FAIRVIEW ST	BERKELEY CA	94703
CAMPESINO MICHAELANGEL E TR	1819 POLK ST, #155	SAN FRANCISCO CA	94109
BUCHANAN BOB B & MELINDA S TRS	19 TAMALPAIS RD	BERKELEY CA	94708
GRAY KENNETH D & CHARLOTTE S TRS	195 FAIRLAWN DR	BERKELEY CA	94708
HODGETTS KENT L & KEELER LATANE T TRS	200 E CARRILLO ST, #202	SANTA BARBARA CA	93101
MCDONALD SHERRILL R & PAMELA A TRS	2025 ROSE ST	BERKELEY CA	94709
LOWENTHAL DAVID & MARY A TRS	2025 ROSE ST, #100	BERKELEY CA	94709
MACFARLANE JOHN G & BOYLE COLLEEN M	2500 ROSE WALK	BERKELEY CA	94708
LEWIS MICHAEL M & TABITHA L TRS	2555 ROSE ST	BERKELEY CA	94708
CARR RICHARD J & SUDEN ELIZABETH J	2565 ROSE ST	BERKELEY CA	94708
MADISON JOSEPH S & SKODA SOPHIA D TRS	2567 ROSE ST	BERKELEY CA	94708
CLARK CAROL S & INNIS DAVID F	2577 ROSE ST	BERKELEY CA	94708
FARB LAWRENCE & KATZ LAURA J TRS	27 TAMALPAIS RD	BERKELEY CA	94708
HANLEY FRANK L JR & MARILYN L	31 TAMALPAIS RD	BERKELEY CA	94708
EAST BAY MUNICIPAL UTILITY DISTRICT	375 11TH ST	OAKLAND CA	94607
MASTER SYNDI B TR	4 GREENWOOD CMN	BERKELEY CA	94708
GILBERT BRUCE & BECHER SUSAN	401 W END AVE	NEW YORK NY	10024
GILBERT BRUCE & BECHER SUSAN	401 WEST END AVE	NEW YORK NY	10024
ROTH ROBERT A & SUSAN M	80 CODORNICES RD	BERKELEY CA	94708
TONG STEPHEN M & CAMPBELL ANNE E TRS	947 PEPPERWOOD DR	DANVILLE CA	94506
HOWARD RICHARD L	98 CODORNICES RD	BERKELEY CA	94708
GALLO CHRISTOPHER N & PISARELLO ANNA C	99 CODORNICES RD	BERKELEY CA	94708
NOVAKOV ANNA TR	HC 81 BOX 672	QUESTA NM	87556
MERZ JAMES TR	P O BOX 365	BIG SUR CA	93920
DALLMEYER R F TR & DALLMEYER SUZANNE B TR	P.O BOX 50	WINNETKA IL	60093
ROSE WALK LLC	PO BOX 964	TIBURON CA	94920
OCCUPANT	1200 EUCLID AVE	BERKELEY CA	94709
OCCUPANT	1201 EUCLID AVE	BERKELEY CA	94709
OCCUPANT	1307 BAY VIEW PL	BERKELEY CA	94708

0 Euclid Ave

125 notices

mailed out 06-12-19

OCCUPANT	1311 BAY VIEW PL	BERKELEY CA	94708
OCCUPANT	1322 EUCLID AVE	BERKELEY CA	94708
OCCUPANT	1322 EUCLID AVE 1	BERKELEY CA	94708
OCCUPANT	1322 EUCLID AVE 2	BERKELEY CA	94708
OCCUPANT	1324 EUCLID AVE	BERKELEY CA	94708
OCCUPANT	1350 EUCLID AVE	BERKELEY CA	94708
OCCUPANT	1360 EUCLID AVE	BERKELEY CA	94708
OCCUPANT	1364 EUCLID AVE	BERKELEY CA	94708
OCCUPANT	1368 EUCLID AVE	BERKELEY CA	94708
OCCUPANT	1387 SCENIC AVE	BERKELEY CA	94708
OCCUPANT	1395 SCENIC AVE	BERKELEY CA	94708
OCCUPANT	1400 HAWTHORNE TER A	BERKELEY CA	94708
OCCUPANT	1400 LE ROY AVE	BERKELEY CA	94708
OCCUPANT	1401 LE ROY AVE	BERKELEY CA	94708
OCCUPANT	1401 LE ROY AVE B	BERKELEY CA	94708
OCCUPANT	1401 SCENIC AVE	BERKELEY CA	94708
OCCUPANT	1406 EUCLID AVE 1	BERKELEY CA	94708
OCCUPANT	1406 EUCLID AVE 2	BERKELEY CA	94708
OCCUPANT	1406 EUCLID AVE 3	BERKELEY CA	94708
OCCUPANT	1406 EUCLID AVE 4	BERKELEY CA	94708
OCCUPANT	1406 EUCLID AVE 5	BERKELEY CA	94708
OCCUPANT	1406 EUCLID AVE 6	BERKELEY CA	94708
OCCUPANT	1406 EUCLID AVE COM	BERKELEY CA	94708
OCCUPANT	1406 HAWTHORNE TER A	BERKELEY CA	94708
OCCUPANT	1429 LE ROY AVE	BERKELEY CA	94708
OCCUPANT	1429 LE ROY AVE A	BERKELEY CA	94708
OCCUPANT	1430 LE ROY AVE 1	BERKELEY CA	94708
OCCUPANT	15 TAMALPAIS RD	BERKELEY CA	94708
OCCUPANT	2501 ROSE WALK	BERKELEY CA	94708
OCCUPANT	2505 ROSE WALK	BERKELEY CA	94708
OCCUPANT	2507 ROSE WALK	BERKELEY CA	94708
OCCUPANT	2511 ROSE WALK	BERKELEY CA	94708
OCCUPANT	2515 ROSE WALK	BERKELEY CA	94708
OCCUPANT	2518 ROSE WALK	BERKELEY CA	94708
OCCUPANT	2519 ROSE WALK	BERKELEY CA	94708
OCCUPANT	2523 ROSE WALK	BERKELEY CA	94708
OCCUPANT	2525 ROSE WALK	BERKELEY CA	94708
OCCUPANT	2527 ROSE WALK	BERKELEY CA	94708
OCCUPANT	2537 ROSE WALK	BERKELEY CA	94708
OCCUPANT	2553 ROSE ST	BERKELEY CA	94708
OCCUPANT	2553 ROSE WALK	BERKELEY CA	94708
OCCUPANT	2555 ROSE WALK	BERKELEY CA	94708
OCCUPANT	2565 ROSE WALK	BERKELEY CA	94708
OCCUPANT	2567 ROSE WALK	BERKELEY CA	94708
OCCUPANT	2577 ROSE WALK	BERKELEY CA	94708
OCCUPANT	4 GREENWOOD COMMON	BERKELEY CA	94708
OCCUPANT	40 CODORNICES RD	BERKELEY CA	94708
OCCUPANT	50 CODORNICES RD	BERKELEY CA	94708
OCCUPANT	60 CODORNICES RD	BERKELEY CA	94708
OCCUPANT	76 CODORNICES RD	BERKELEY CA	94708
OCCUPANT	88 CODORNICES RD	BERKELEY CA	94708
OCCUPANT	9 TAMALPAIS RD	BERKELEY CA	94708
Ridge Communications Inc. for Verizon Wireless	12919 Alcosta Blvd. Ste. 1	San Ramon CA	94583
EAST BAY MUNICIPAL UTILITY DISTRICT	PO Box 24055	OAKLAND CA	94623



Z O N I N G  
A D J U S T M E N T S  
B O A R D

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NOTICE OF PUBLIC HEARING

## 0 Euclid Avenue – Berryman Reservoir

Use Permit #ZP2018-0236 to establish a new 50' high “monopole” 4G LTE wireless facility operated by Verizon Wireless at the East Bay Municipal Utility District site consisting of six antennas, six remote radio units, and associated ground equipment.

The Zoning Adjustments Board of the City of Berkeley will hold a public hearing on the above matter, pursuant to Zoning Ordinance Section 23B.32.020, on **Thursday, June 27, 2019** at the **Berkeley Unified School District meeting room, 1231 Addison Street**, (wheelchair accessible). The meeting starts at 7:00 p.m.

### PERMITS REQUIRED:

- Use Permit to establish a Wireless Telecommunications Facility,
- Administrative Use Permit to establish Wireless Telecommunications Facility, other than those located within the public right-of-way built higher than 35' in height in the R-1H Single Family Residential District, Hillside Overlay

**APPLICANT:** David Haddock, Ridge Communications Inc for Verizon Wireless, 12919 Alcosta Blvd, Suite 1, San Ramon, CA 94583

**ZONING DISTRICT:** R-1H, Single Family Residential District – Hillside Overlay

**ENVIRONMENTAL REVIEW STATUS:** Categorically exempt pursuant to Sections 15301 and 15303 of the CEQA Guidelines (“Existing Facilities and New Construction or Conversion of Small Structures”).

**The Zoning Application and application materials for this project is available online at:**  
<http://www.cityofberkeley.info/zoningapplications>

**The agenda and staff report for this meeting will be available online 3 to 5 days prior to this meeting at:** <http://www.cityofberkeley.info/zoningadjustmentsboard>

### Communication Disclaimer

- Communications to Berkeley boards, commissions or committees are public record and will become part of the City’s electronic records, which are accessible through the City’s website. **Please note: e-mail addresses, names, addresses, and other contact information are not required, but if included in any communication to a City board,**

**commission or committee, will become part of the public record.** If you do not want your e-mail address or any other contact information to be made public, you may deliver communications via U.S. Postal Service or in person to the secretary of the relevant board, commission or committee. If you do not want your contact information included in the public record, please do not include that information in your communication. Please contact the secretary to the relevant board, commission or committee for further information.

### **Communications and Reports**

Items received by the deadlines for submission will be compiled and distributed as follows. If no items are received by the deadline, no supplemental packet will be compiled for said deadline. All materials will be made available via the Zoning Adjustments Board Agenda page: <https://www.cityofberkeley.info/zoningadjustmentboard/>

- **To distribute correspondence to Board members as an attachment to the Staff Report** -- submit comments **by 12:00 noon, seven (7) days before the meeting.** Please provide 15 copies of any correspondence with more than ten (10) pages or if in color or photographic format.
- **Supplemental Communications and Reports 1** - All Materials submitted between noon the Thursday the week before the meeting and noon Tuesday the week of the meeting, will be made available by 5:00 p.m. on Tuesday the week of the meeting.
- **Supplemental Communications and Reports 2** - All Materials submitted after noon on Tuesday the week of the meeting and before noon on Wednesday, the day before the meeting, will be made available at 5:00 that Wednesday. Any correspondence received after this deadline will be given to the Zoning Adjustment Board just prior to the meeting.
- Members of the public may submit written comments themselves at the meeting. To distribute correspondence at the meeting, please provide 15 copies and submit to the Zoning Adjustments Board Clerk. Correspondence received later, and after the meeting, will be posted to the web site following the meeting.
- **Please Note: You are strongly advised to submit written comments prior to noon Wednesday, the day before the meeting, as Board members do not have an opportunity to read written materials handed out at the meeting.**
- Written comments should be directed to the ZAB Secretary at: Land Use Planning Division (Attn: ZAB Secretary), 1947 Center Street, Berkeley, CA 94704 OR at [zab@cityofberkeley.info](mailto:zab@cityofberkeley.info)

### **Notice of Decision Requests**

Written comments or a request for a Notice of Decision should be directed to the Zoning Adjustments Board Secretary at [zab@cityofberkeley.info](mailto:zab@cityofberkeley.info)



### **Accessibility Information / ADA Disclaimer**

This meeting is being held in a wheelchair accessible location. To request a disability-related accommodation(s) to participate in the meeting, including auxiliary aids or services, please contact the Disability Services specialist at 981-6342 (V) or 981-6345 (TDD) at least three business days before the meeting date. Please refrain from wearing scented products to this meeting.

### **SB 343 Disclaimer**

Any writings or documents provided to a majority of the Commission regarding any item on this agenda will be made available for public inspection at the Permit Service Center, Planning and Development Department located at 1947 Center Street, Third Floor, Berkeley, during regular business hours.

### **Notice Concerning Your Legal Rights**

If you object to a decision by the Zoning Adjustments Board regarding a land use permit project, the following requirements and restrictions apply:

1. If you challenge the decision of the City in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the Zoning Adjustments Board at, or prior to, the public hearing.
2. You must appeal to the City Council within fourteen (14) days after the Notice of Decision of the action of the Zoning Adjustments Board is mailed. It is your obligation to notify the Land Use Planning Division in writing of your desire to receive a Notice of Decision when it is completed.
3. Pursuant to Code of Civil Procedure Section 1094.6(b) and Government Code Section 65009(c)(1), no lawsuit challenging a City Council decision, as defined by Code of Civil Procedure Section 1094.6(e), regarding a use permit, variance or other permit may be filed more than ninety (90) days after the date the decision becomes final, as defined in Code of Civil Procedure Section 1094.6(b). Any lawsuit not filed within that ninety (90) day period will be barred.
4. Pursuant to Government Code Section 66020(d)(1), notice is hereby given to the applicant that the 90-day protest period for any fees, dedications, reservations, or other exactions included in any permit approval begins upon final action by the City, and that any challenge must be filed within this 90-day period.
5. If you believe that this decision or any condition attached to it denies you any reasonable economic use of the subject property, was not sufficiently related to a legitimate public purpose, was not sufficiently proportional to any impact of the project, or for any other reason constitutes a “taking” of property for public use without just compensation under the California or United States Constitutions, the following requirements apply:
  - A. That this belief is a basis of your appeal.
  - B. Why you believe that the decision or condition constitutes a “taking” of property as set forth above.
  - C. All evidence and argument in support of your belief that the decision or condition constitutes a “taking” as set forth above.

If you do not do so, you will waive any legal right to claim that your property has been taken, both before the City Council and in court.

### **Further Information**

Questions about the project should be directed to the project planner, Loyal Nawfal, at (510) 981-7424 or Lnawfal@cityofberkeley.info. All project application materials, including full-size plans, may be viewed at the Permit Service Center (Zoning Counter), 1947 Center Street, Third Floor, during normal office hours.

**Jacob, Melinda**

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**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: Request for Notice of Decision re Permit #ZP-2018-0236

-----Original Message-----

From: Christian Raisner [mailto:clraisner@outlook.com]  
Sent: Thursday, June 27, 2019 3:57 PM  
To: Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
Subject: Request for Notice of Decision re Permit #ZP-2018-0236

Please send the Notice of Decision for the above référence Permit as soon as it is issued. Send to Christian Raisner at clraisner@outlook.com.

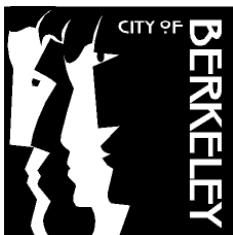
Thank you.



**From:** Zoning Adjustments Board (ZAB)  
**Subject:** FW: I support the Cell towers

**From:** Maxwell Graham [mailto:maxwellanthonygraham@yahoo.com]  
**Sent:** Thursday, June 27, 2019 5:10 PM  
**To:** Zoning Adjustments Board (ZAB) <Planningzab@cityofberkeley.info>  
**Subject:** I support the Cell towers

I understand there is a group that is opposing these towers. They are full of folly and not looking at the science. I support the Cell Towers as does most folks whom have bothered researching the possible issues.



Planning and Development Department  
Land Use Planning Division

**PROOF OF SERVICE**

DATE: October 1, 2019  
TO: Whom It May Concern  
FROM: Melinda Jacob, OSII  
SUBJECT: **USE PERMIT #ZP2018-0236 – 0 EUCLID AVENUE**

I, the undersigned, certify that I am employed in the City of Berkeley, County of Alameda, California; that I am over eighteen years of age; that I am not a party to the within action; and that my business address is 2120 Milvia Street, Berkeley, California 94704. On this date, I served the following documents:

**DECISION OF ZONING ADJUSTMENTS BOARD FOR  
USE PERMIT #ZP2018-0236 – 0 EUCLID AVENUE**

On the parties stated below by placing true copies thereof in sealed envelope(s) addressed as shown below by the following means of service:

David Haddock, Ridge Communications Inc. for Verizon Wireless 1219 Alacosta Blvd, Suite 1 San Ramon, CA 94583	Rob Korn East Bay Municipal Utility District P.O. Box 24055 Oakland, CA 94623
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- By First Class Mail - I am readily familiar with the City's practice for collecting and processing of correspondence for mailing. Under the practice, the correspondence is deposited with the U.S. Postal Service on the same day as collected, with First Class postage thereon fully prepaid, in Berkeley, California, for mailing to the addressee following ordinary business practices.
- By Personal Service - I caused each such envelope to be given to the City of Berkeley mail service person to personally deliver to the office of the addressee.

I declare under penalty of perjury that the foregoing is true and correct. Executed on October 1, 2019 at Berkeley, California.

*Melinda A. Jacob*

Melinda Jacob, OSII



Z O N I N G  
A D J U S T M E N T S  
B O A R D  

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N O T I C E O F D E C I S I O N

**DATE OF BOARD DECISION: June 27, 2019**  
**DATE NOTICE MAILED: July 2, 2019**  
**APPEAL PERIOD EXPIRATION: July 17, 2019<sup>1</sup>**  
**EFFECTIVE DATE OF PERMIT (Barring Appeal or Certification)<sup>2</sup>: July 18, 2019**

## 0 Euclid Avenue – Berryman Reservoir

**Use Permit #ZP2018-0236 to establish a new 50' high “monopole” 4G LTE wireless facility operated by Verizon Wireless at the East Bay Municipal Utility District site consisting of six antennas, six remote radio units, and associated ground equipment.**

The Zoning Adjustments Board of the City of Berkeley, after conducting a public hearing, **DENIED** the following permits:

- Use Permit to establish a Wireless Telecommunications Facility, under BMC Section 23C.17.100.A.2;
- Use Permit to establish a Wireless Telecommunications Facility in the R-1 Single Family Residential District, Hillside Overlay, under BMC Section 23D.16.030; and
- Administrative Use Permit to establish Wireless Telecommunications Facility, other than those located within the public right-of-way built higher than 35' in height in the R-1H Single Family Residential District, Hillside Overlay under BMC Sections 23E.96.070 and 23D.04.020.

**APPLICANT:** David Haddock, Ridge Communications Inc for Verizon Wireless, 12919 Alcosta

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<sup>1</sup> Pursuant to BMC Section 23A.08.030, the appeal period begins on the first business day following the date the Notice of Decision is mailed. Pursuant to BMC Section 1.04.080, any deadline that falls on a non-business day is extended until the next business day.

<sup>2</sup> Pursuant to BMC Section 23B.32.090, the City Council may certify any ZAB decision for review during the 14-day appeal period after the notice of the ZAB's decision is issued. Certification has the same effect as an appeal. However, BMC Section 1.04.070 suspends or “tolls” the Council's deadline to certify when the Council is on recess. Thus, in cases where the 14-day appeal period is scheduled to *end* during a Council recess, the certification deadline is extended past the end of the recess for the remainder of the appeal period. In cases where the appeal period *begins* during a Council recess, the certification deadline is extended until 14 days after the first Council meeting after the recess. *Extension of the certification deadline has no effect on the appeal deadline.*

ZONING ADJUSTMENTS BOARD  
NOTICE OF DECISION  
Use Permit #ZP2018-0236  
0 Euclid Avenue  
July 2, 2019  
Page 2 of 5

Blvd, Suite 1, San Ramon, CA 94583

**ZONING DISTRICT:** R-1H, Single Family Residential District – Hillside Overlay

**ENVIRONMENTAL REVIEW STATUS:** Categorically exempt pursuant to Sections 15301 and 15303 of the CEQA Guidelines (“Existing Facilities” and “New Construction or Conversion of Small Structures”).

**The Zoning Application and application materials for this project is available online at:**  
<http://www.cityofberkeley.info/zoningapplications>

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**FINDINGS, CONDITIONS AND APPROVED PLANS ARE ATTACHED TO THIS NOTICE**

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**BOARD VOTE: 0-9-0-0**

**YES:** CLARKE, HABIBI, KAHN, KIM, LEE-OWENS, OLSON, SELAWSKY, SHEAHAN, TREGUB

**NO:**

**ABSTAIN:**

**ABSENT:**

**TO APPEAL THIS DECISION (see Section 23B.32.050 of the Berkeley Municipal Code):**

To appeal a decision of the Zoning Adjustments Board to the City Council you must:

1. Submit a letter clearly and concisely setting forth the grounds for the appeal to the City Clerk, located at 2180 Milvia Street, 1<sup>st</sup> Floor, Berkeley; or by facsimile to (510) 981-6901. The City Clerk’s telephone number is (510) 981-6900.
2. Submit the required appeal fee (checks and money orders payable to “City of Berkeley”):
  - a. The fee for persons other than the applicant is \$500. This fee may be reduced to \$100 if the appeal is signed by persons who lease or own at least 50 percent of the parcels or dwelling units within 300 feet of the project site, or at least 25 such persons (not including dependent children), whichever is less.
  - b. The fee for all appeals by Applicants is \$2500.
3. The appeal must be received prior to 5:00 p.m. on the "APPEAL PERIOD EXPIRATION"

ZONING ADJUSTMENTS BOARD  
NOTICE OF DECISION  
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0 Euclid Avenue  
July 2, 2019  
Page 3 of 5

date shown above (if the close of the appeal period falls on a weekend or holiday, then the appeal period expires the following business day).

If no appeal is received, the permit will be issued on the first business day following expiration of the appeal period, and the project may proceed at that time.

**NOTICE CONCERNING YOUR LEGAL RIGHTS:**

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If you object to this decision, the following requirements and restrictions apply:

1. If you challenge this decision in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the Zoning Adjustments Board at, or prior to, the public hearing.
2. You must appeal to the City Council within fourteen (14) days after the Notice of Decision of the action of the Zoning Adjustments Board is mailed. It is your obligation to notify the Land Use Planning Division in writing of your desire to receive a Notice of Decision when it is completed.
3. Pursuant to Code of Civil Procedure Section 1094.6(b) and Government Code Section 65009(c)(1), no lawsuit challenging a City Council decision, as defined by Code of Civil Procedure Section 1094.6(e), regarding a use permit, variance or other permit may be filed more than ninety (90) days after the date the decision becomes final, as defined in Code of Civil Procedure Section 1094.6(b). Any lawsuit not filed within that ninety (90) day period will be barred.
4. Pursuant to Government Code Section 66020(d)(1), notice is hereby given to the applicant that the 90-day protest period for any fees, dedications, reservations, or other exactions included in any permit approval begins upon final action by the City, and that any challenge must be filed within this 90-day period.
5. If you believe that this decision or any condition attached to it denies you any reasonable economic use of the subject property, was not sufficiently related to a legitimate public purpose, was not sufficiently proportional to any impact of the project, or for any other reason constitutes a "taking" of property for public use without just compensation under the California or United States Constitutions, your appeal of this decision must including the following information:
  - A. That this belief is a basis of your appeal.
  - B. Why you believe that the decision or condition constitutes a "taking" of property as set forth above.
  - C. All evidence and argument in support of your belief that the decision or condition constitutes a "taking" as set forth above.

If you do not do so, you will waive any legal right to claim that your property has been

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taken, both before the City Council and in court.

**PUBLIC COMMENT:**

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Communications to Berkeley boards, commissions or committees are public record and will become part of the City's electronic records, which are accessible through the City's website. **Please note: e-mail addresses, names, addresses, and other contact information are not required, but if included in any communication to a City board, commission or committee, will become part of the public record.** If you do not want your e-mail address or any other contact information to be made public, you may deliver communications via U.S. Postal Service or in person to the secretary of the relevant board, commission or committee. If you do not want your contact information included in the public record, please do not include that information in your communication. Please contact the secretary to the relevant board, commission or committee for further information.

**FURTHER INFORMATION:**

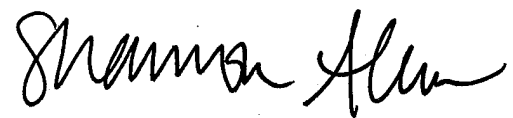
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Questions about the project should be directed to the project planner, Loyal Nawfal, at (510) 981-7410 or [lnawfal@cityofberkeley.info](mailto:lnawfal@cityofberkeley.info). All project application materials, including full-size plans, may be viewed at the Land Use Planning Division, 1947 Center Street, 2<sup>nd</sup> floor, Monday through Friday from 8:30 a.m. to 4 p.m. (except on holidays and reduced service days; check City's website for details).

**ATTACHMENTS:**

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1. Findings for Denial



**ATTEST:**

Shannon Allen, Secretary  
Zoning Adjustments Board

cc: City Clerk  
Building and Safety Division  
Central Library - Reference Desk  
Public Works Engineering Division  
ZAB Members

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First Source  
Amy Davidson, Housing Department

Applicant:

David Haddock, Ridge Communications Inc.  
for Verizon Wireless  
12919 Alcosta Blvd., Suite 1  
San Ramon CA 94583

Property Owner:

East Bay Municipal Utility District  
Attn: Rob Korn  
P.O. Box 24055  
Oakland, CA 94623

Interest Party:

Christian Raisner  
Email: [clraisner@outlook.com](mailto:clraisner@outlook.com)

# ATTACHMENT 1

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## FINDINGS OF DENIAL

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JUNE 27, 2019

### 0 Euclid Avenue – Berryman Reservoir

**Use Permit #ZP2018-0236 to establish a new 50' high “monopole” 4G LTE wireless facility operated by Verizon Wireless at the East Bay Municipal Utility District site consisting of six antennas, six remote radio units, and associated ground equipment.**

#### FINDINGS OF DENIAL

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1. Pursuant to Berkeley Municipal Code Section 23B.32.040, the Zoning Adjustments Board (ZAB) finds that the proposed project, under the circumstances of the particular case existing at the time at which the application is granted, will be detrimental to the health, safety, peace, morals, comfort, or general welfare of persons residing or working in the area or neighborhood of such proposed use and will be detrimental or injurious to property and improvements of the adjacent properties, the surrounding area or neighborhood, or to the general welfare of the City, because the application did not provide adequate evidence that the proposed wireless telecommunications facility is required to support the need to prevent a gap in coverage or capacity shortfall.

Pursuant to Berkeley Municipal Code Section 23C.17.100.B.3, the ZAB does not find that the proposed facility “is necessary to prevent a significant gap in coverage or capacity shortfall in the applicant’s service area, and is the least intrusive means of doing so” because the applicant has not provided sufficient information to support a finding that the facility is necessary to support the existing Verizon facilities, particularly in order to increase the capacity of Verizon’s network.

Additionally, the ZAB finds that the applicant did not demonstrate as required by BMC Section 23C.17.040.C.2 that that the proposed facility is necessary to prevent or fill a significant gap or capacity shortfall in the applicant’s service area, or that it is the least intrusive means of doing so, or that there are not any alternative sites that will have fewer aesthetic impacts while providing comparable service.

2. Pursuant to Berkeley Municipal Code Section 23C.17.100.B.1, the ZAB finds that the project is not consistent with the requirements of this chapter and applicable specific requirements applicable because the project does not meet the provisions of the 2002 General Plan, particularly Policy LU-7 Neighborhood Quality of Life, Action A, Policy UD-16 Context, and Policy UD-24 Area Character, and does not meet the objectives of the chapter per BMC Section 23C.17.0520.B.1 (Purpose), as the proposed wireless telecommunications facility:
  - a. Is not consistent with the scale or historic character of the surrounding uses;
  - b. Does not foster an aesthetically pleasing urban environment;



FINDINGS OF DENIAL  
Page 2 of 2

0 EUCLID AVENUE  
June 27, 2019

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- c. Does not prevent visual blight, protect and preserve public safety and general welfare; and
  - d. Does not maintain the character of residential areas, consistent with the adopted General Plan and Area Plans.
3. Pursuant to Berkeley Municipal Code Sections 23C.17.100.B.2.a and 23C.17.100.B.2.b, the ZAB finds that with the limited information provided, it is not possible to determine if a monopole or monopine, away from trees, in an area of complex elevations will not be readily visible.

Similarly, the applicant did not demonstrate that the proposed project meets the requirements of BMC Section 23C.17.070.C (Design Requirements) which requires that “no readily visible antenna shall be placed at a location where it will impair a significant or sensitive view corridor”. The applicant did not demonstrate that the application meets the requirements of BMC Section 23C.17.070.C.3 that the proposed monopole was designed to be the minimum functional height and width required to support the proposed antenna installation, or that a higher than the minimum monopole height will facilitate other objectives of the Chapter.

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CITY OF BERKELEY  
CITY CLERK DEPT

**MACKENZIE & ALBRITTON LLP**  
155 SANSOME STREET, SUITE 800  
SAN FRANCISCO, CALIFORNIA 94104

2019 JUL 16 AM 11:39

TELEPHONE 415 / 288-4000  
FACSIMILE 415 / 288-4010

July 16, 2019

**VIA HAND DELIVERY**

City Council  
c/o City Clerk  
City of Berkeley  
2180 Milvia Street  
Berkeley, California 94704

Re: Appeal of Denial of Application #2018-0236  
Telecommunications Facility, 0 Euclid Avenue (Berryman Reservoir)

Dear Councilmembers:

We write on behalf of Verizon Wireless to appeal the June 27, 2019, denial by the Zoning Adjustments Board (the "ZAB") of a proposed wireless communications facility at 0 Euclid Avenue (the "Proposed Facility"). Verizon Wireless appeals the ZAB's decision because it violates federal law and in particular the Telecommunications Act of 1996. Specifically, the decision mailed on July 2, 2019, is not supported by substantial evidence, in violation of 47 USC § 332(c)(7)(B)(iii), and it prohibits, or has the effect of prohibiting, Verizon Wireless from providing personal wireless services in violation of 47 USC § 332(c)(7)(B)(i)(II). Further, the ZAB's denial is not supported by the Berkeley Municipal Code (the "Code").

In general, the ZAB's decision ignores practical considerations of wireless facility siting that are acknowledged in the Code. Verizon Wireless must provide service to low-density residential neighborhoods as well as other developed areas of Berkeley, but in low-density areas, there are very few properties not in residential use. Verizon Wireless chose the Berryman Reservoir location because it is ideally situated in the center of a gap in service and is not directly adjacent to properties in residential use.

The ZAB erred in finding that the facility is not necessary to fill "a significant gap or capacity shortfall" in Verizon Wireless service as required by Code Sections 23C.17.040(C)(2) and 23C.17.100(B)(3). Verizon Wireless provided a statement of need and coverage maps that show a gap in in-building service, as well as a larger gap in in-vehicle service, in the Berkeley Hills area near Berryman Reservoir. The statement and maps are substantial evidence of a significant service gap, and the ZAB's written denial does not provide any evidence to refute a gap. The lack of service coverage also results

Berkeley City Council  
July 16, 2019  
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in an inability to provide adequate network capacity to meet growing customer demand in the area.

The ZAB also erred in finding that the Proposed Facility is not the least intrusive means of serving the gap, and that Verizon Wireless did not show there are no alternative sites to provide service with fewer aesthetic impacts. The ZAB did not raise any alternatives that would be less intrusive and provided no factual basis for this finding of denial. Verizon Wireless presented alternative design options for an unconcealed monopole and a four-legged tower, but staff favored the treepole design and recommended that the ZAB approve it. *See ZAB Staff Report, June 27, 2019, pp. 7-8.*

The ZAB further erred in finding that the Proposed Facility is not consistent with Code Section 27C.17.100(B)(1) and General Plan Policies LU-7 (neighborhood quality of life), UD-16 (context) and UD-24 (area character). The written denial simply references these policies but provides no explanation as to how the Proposed Facility does not comply. Similarly, the written denial referenced the purpose provisions of the City's wireless regulations, Code Section 23C.17.020(B)(1), but did not elaborate on how the Proposed Facility does not satisfy those objectives (which are not development standards in any event). In fact, Verizon Wireless followed all Code standards for design and screening to minimize visual impacts to the extent feasible, and the proposed treepole design will blend in with nearby established trees, and pose no impact to surrounding uses, the urban environment, area character or general welfare.

The ZAB's written denial claims it was not possible to determine if a different location would render the Proposed Facility to be "not readily visible" as required by Code Section 23C.17.100(B)(2). However, Verizon Wireless provided photosimulations as evidence that show the Proposed Facility treepole blends with the backdrop of established evergreen trees. Staff agreed that the Proposed Facility would "not be readily visible." *See ZAB Staff Report, June 27, 2019, p. 7.* Because it is not readily visible, Code Section 23C.17.070(C) is inapplicable, and the Proposed Facility will not impair any view corridor.

Lastly, the ZAB claimed that Verizon Wireless did not demonstrate that the Proposed Facility is designed to the minimum height and width required, or that a higher facility would facilitate other objectives per Code Section 23C.17.070(C)(3). Verizon Wireless seeks an administrative use permit for height greater than allowed in the R-IH zone pursuant to Code Sections 23D.04.020(B) and 23E.96.070. At only 50 feet, the Proposed Facility height is necessary in order for Verizon Wireless to achieve its coverage objectives given the Berryman Reservoir location, its elevation and nearby topography.

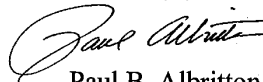
In sum, the ZAB's denial is not supported by substantial evidence. On the other hand, there is substantial evidence that the Proposed Facility meets all standards of the Code and satisfies all required findings for approval of a use permit and administrative use permit.

Berkeley City Council  
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In addition to lack of substantial evidence, denial of the Proposed Facility would constitute a prohibition of service in violation of 47 U.S.C. § 332(c)(7)(B)(i)(II) because there is a significant gap in Verizon Wireless service and the Proposed Facility is the least intrusive feasible alternative to fill that gap.

The Council should overturn the ZAB's denial and approve the Proposed Facility. We reserve the right to state additional grounds for appeal and submit additional evidence in support of the above arguments in advance of the appeal hearing.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Paul Albritton", written in black ink.

Paul B. Albritton

## Nawfal, Loyal

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**Subject:** FW: Appealed ZAB decision re: Verizon cell tower proposal for 0 Euclid

**From:** Kelley Hart [mailto:kelley.hart@gmail.com]

**Sent:** Wednesday, August 07, 2019 4:29 PM

**To:** Nawfal, Loyal <LNawfal@cityofberkeley.info>; Lucinda Reinold <lucindareinold@gmail.com>

**Subject:** Re: Appealed ZAB decision re: Verizon cell tower proposal for 0 Euclid

Hi Loyal,

Thank you so much for this. We hope that in your memo on the ZAB decision that you will include the many points made by ZAB members at the meeting. I tried to take down as many of them as possible. Here are the ones I captured. I hope this is useful.

Thanks again,

Kelley

- **Comment from Sheaha:** this is a historic epi-center. The non-detrimental finding cannot be made. Also, the permit doesn't meet the requirements of the General Plan – UD-16 – context – it doesn't respect the built environment here. It's not the least visible means to accomplish the intent. It's extremely intrusive.
- **Comment from Clark:** it's a terrible location. It's too close to the park. Applicant only gave us 2 views... design review should've been involved. Should've included a view of what people would be seeing in the park. Why didn't this go to the design review committee? It's a strange location on the edge of a pit, on the edge of the park. It's not the right location on the EBMUD property.
- **Comment from Kahn:** the need has not been adequately shown. Verizon has to demonstrate that this is a necessity. Need to consider the aesthetic considerations... views from the park, views from the hills, views for the neighbors
- **Comment from Olson:** Fire is a real concern. Why was there a categorical exemption from CEQA for this? She agrees that EBMUD reservoir CEQA process applies here. We need to have story poles for this project. There will be view impacts from homes. Also, it (generator?) would need to be in a sound tight room. Also concerned about birds trying to nest here. Why would you put it in the drinking water basin? Also, this is a historic area... it should be designated a landmark historic district so this kinda stuff can't be put here.
- **Comment from John Selawksy:** If we're going to deny we need to sight some findings.... It will affect historic resources. It's not compliant with the General Plan – it's not compatible with the area.
- **Comment from Owens:** Concerned about the contradictory data provided by Verizon. It's also just not a good location – applicant should look for alternatives sites. Concerned about protecting the park.
- **Comment from Kim:** applicant should've told the public sooner.
- **Comment from Clarke:** the application is incomplete. It doesn't have information that is needed. More materials are needed to make an evaluation on aesthetics.
- **Comment from Tregub:** need to look more closely at the diesel generator.
- **Comment from Olsen:** violates the zoning code.

On Tue, Aug 6, 2019 at 10:06 AM Nawfal, Loyal <[LNawfal@cityofberkeley.info](mailto:LNawfal@cityofberkeley.info)> wrote:

Hi Kelly,

Apologies for the delay. Attached is the Notice of Decision, which includes the findings of Denial, I will ask that this be uploaded to the website as well for others to easily access. This are of the City is not subject to Design Review, so Staff requested and reviewed the various design options. The staff report discussed the tree and un-camouflaged options and recommended against the screened box option. Should the City Council approve this project, the City will ensure that CEQA review is conducted for this project. Please note that the original ZAB staff report included a Categorical Exemption.

Hope this helps. Please note the City is closed this Friday, and I will be out for two weeks after that.

-Layal

Layal Nawfal

Associate Planner

Land Use Planning Division

City of Berkeley

510-981-7424

[Lnawfal@cityofberkeley.info](mailto:Lnawfal@cityofberkeley.info)

*City offices are closed on Aug 9 (cost savings closure) and I will be out of the office Aug 12–23.*

City closure schedule: [https://www.cityofberkeley.info/IT/Holiday\\_and\\_Reduced\\_Service\\_Days.aspx](https://www.cityofberkeley.info/IT/Holiday_and_Reduced_Service_Days.aspx)

**From:** Kelley Hart [mailto:[kelley.hart@gmail.com](mailto:kelley.hart@gmail.com)]  
**Sent:** Wednesday, July 31, 2019 5:01 PM  
**To:** Nawfal, Layal <[LNawfal@cityofberkeley.info](mailto:LNawfal@cityofberkeley.info)>  
**Cc:** Lucinda K Reinold <[lucindareinold@yahoo.com](mailto:lucindareinold@yahoo.com)>  
**Subject:** Re: Appealed ZAB decision re: Verizon cell tower proposal for 0 Euclid

Hi Layal,

Thank you so much for your prompt response. We have reached out to the City Clerk's office and gotten nearly all of our questions answered. We have two remaining for you:

1) Can we get a copy of the city's written decision from the ZAB meeting on June 22 re: their denial of the permit requested by Verizon for a 50 foot cell tower at 0 Euclid? Our understanding is that city staff have to

provide a written description of ZAB's decision and related rationale for rejecting the permit application. Can we get a copy of that from you? I reviewed the webpage that you emailed me previously for the project and I couldn't find it there

([https://www.cityofberkeley.info/Planning\\_and\\_Development/Zoning\\_Adjustment\\_Board/0\\_Euclid\\_Avenue.a\\_spx](https://www.cityofberkeley.info/Planning_and_Development/Zoning_Adjustment_Board/0_Euclid_Avenue.a_spx))

2) At the ZAB meeting on 6/22 the board members mentioned some process requests. One was about taking the application through the city's design review process. Will that be happening before this goes to City Council? What about the question re: CEQA because of the Berryman reservoir project – will the city or EBMUD meet any/all applicable CEQA requirements relating to the Berryman Reservoir CEQA process before City Council hears it?

Thank you again,

Kelley Hart

310-497-7773(c)

On Mon, Jul 22, 2019 at 11:57 AM Nawfal, Layal <[LNawfal@cityofberkeley.info](mailto:LNawfal@cityofberkeley.info)> wrote:

Hi Kelly,

I left you a voicemail regarding how some of these questions should be directed to the City Clerk's office. They can be reached via [clerk@cityofberkeley.info](mailto:clerk@cityofberkeley.info) or 510-981-6900. They will be able to answer questions regarding procedure. The Appeal hearing is scheduled for October 29<sup>th</sup>. I have attached the City Clerk's receipt letter that went out for your reference. Please be sure to direct any comments or correspondence to the City Clerk's office so that they can ensure it is part of the agenda package.

The City Clerk will receive a full administrative record of the Use Permit, submitted materials and correspondences related to the ZAB hearing as part of their agenda package.

Hope this helps,

-Layal

Layal Nawfal

Associate Planner

Land Use Planning Division

City of Berkeley

510-981-7424

[Llawfal@cityofberkeley.info](mailto:Llawfal@cityofberkeley.info)

City closure schedule: [https://www.cityofberkeley.info/IT/Holiday\\_and\\_Reduced\\_Service\\_Days.aspx](https://www.cityofberkeley.info/IT/Holiday_and_Reduced_Service_Days.aspx)

**From:** Kelley Hart [mailto:[kelley.hart@gmail.com](mailto:kelley.hart@gmail.com)]  
**Sent:** Thursday, July 18, 2019 4:08 PM  
**To:** Nawfal, Loyal <[LNawfal@cityofberkeley.info](mailto:LNawfal@cityofberkeley.info)>  
**Cc:** Lucinda K Reinold <[lucindareinold@yahoo.com](mailto:lucindareinold@yahoo.com)>  
**Subject:** Appealed ZAB decision re: Verizon cell tower proposal for 0 Euclid

Hi Loyal,

I just left a message for you and then realized it may be easiest if I send you my list of questions regarding the appeal process for the Verizon cell tower proposed for 0 Euclid. Please let me know if you know any of these answers, and if not, who I should contact. If it's easier to review these on the phone, please feel free to call me instead (310-497-7773).

Thank you in advance,

Kelley Hart

1. What's the process – when is the earliest that City Council will decide this appeal of the ZAB decision? How do I find out when it will be on City Council agenda?
2. What is the opportunity for public input? How can the public give input between now and the city council meeting? Please list the ways.
3. Will applicant be allowed to introduce new information during the appeal process and/or at the City Council meeting?
4. At the ZAB meeting the board members mentioned some process requests. One was about taking the application through the city's design review process. Will that be happening before this goes to City Council? What about the question re: CEQA because of the Berryman reservoir project – will the city or EBMUD meet any applicable CEQA requirements relating to the Berryman Reservoir CEQA process before City Council hears it?
5. How can I get a copy of all of the letters received that are now part of the record?
6. Can I get a copy of the petition that we (opponents) submitted into the record at the ZAB meeting?
7. Will City Council also get a copy of everything that was submitted and a transcript/record of the ZAB meeting in advance of making their decision?
8. I know of a lot of people who will want to participate in opposing the project, but who won't be able to come to a Tuesday night city council meeting. What is the best way for them to get involved – can/should they write letters to their city council members and cc you? They would like their voices to be part of the



process, and they want to get involved now... not in the fall. Please advise on the appropriate protocol for this.

9. RE: the city council meeting itself, will the opponents (to the tower) have a chance to make a presentation? We were limited to 2 minutes each at the ZAB meeting. Is it possible to get on the agenda so that one person can speak for 8-10 minutes? Or can others cede time, and if so, how much time can we aggregate?

10. Re: the city council meeting, how many votes does the appellant (Verizon) need to overcome the ZAB decision?

11. Who is your contact at EBMUD for this project? We would like to speak to folks at EBMUD about this project as well.



## WIRELESS RADIO FREQUENCY PLANNING MEMORANDUM

**TO:** Rincon Consultants, Inc.  
**FROM:** Dr. Jonathan L. Kramer *Jonathan Kramer*  
**DATE:** September 12, 2019 (Updated Report)  
**CLIENT:** Rincon's Client – City of Berkeley, California  
**ADDRESS:** East Bay Municipal Utility District ("EBMUD")  
Berryman Reservoir, Berkeley, California (the "Site")  
**CARRIER:** Verizon Wireless

**LOCATION NO:** 273566  
**LOCATION ID:** BERKELEY HILLS  
**RINCON JOB #:** 19-07869

### 1. Introduction and Summary

Telecom Law Firm, PC ("TLF"), subcontractor to Rincon Consultants, Inc. ("Rincon"), recommends that the City of Berkeley ("City") require Verizon to follow the City's Municipal Code pertaining to RF safety (BMC 23C.17.090).

This report, issued on September 12, 2019 is an update to the TLF report of May 24, 2019 (the "May Report"). This updated report is intended to address a specific public concern raised at the Berkeley Zoning Adjustments Board Meeting on Thursday June 27, 2019 related to TLF's May Report. Specifically, a public speaker expressed concern that Figure 8 of the May Report underrepresented the length of the RF controlled zone in each of the three transmission azimuths from Verizon's proposed wireless Site on EBMUS property. The speaker's concern is addressed below with an updated and expanded Figure 8, and an explanation as to how the new Figure 8 was prepared.

Based on the RF emissions data for this project as shown in the Hammett and Edison ("H&E") Radio Frequency report ("H&E RF Report"), and further considering the updated and expanded Figure 8 in this updated report, the proposed project continues to demonstrate planned compliance with the FCC's RF emissions rules. As such, it remains our opinion that the City has no basis to deny the project based solely on RF emissions concerns.

### 2. Project Description

The City, through Rincon, requested that TLF review Verizon's proposal in regard to radio frequency emissions in connection with Verizon's plan to construct and operate a new wireless site at the East Bay Municipal Utility District ("EBMUD") Berryman Reservoir in Berkeley, California. This memorandum assesses whether Verizon's proposal demonstrates planned compliance with the federal radio frequency exposure guidelines.

Verizon proposes to construct a new wireless facility north of the existing water tank on the property. The project plans are most recently dated March 13, 2018 through May 20, 2018 (the "Plans"). Verizon's Plans show that the facility will be comprised of a 50-foot high monopine and associated equipment at the antenna, and at an associated 25' x 20' leased area for additional equipment associated with the antennas and standby powering.

Figure 1 is Verizon's project description submitted on the face of the Plans.

PROJECT DESCRIPTION	
A (P) VERIZON WIRELESS UNMANNED TELECOMMUNICATION FACILITY CONSISTING OF INSTALLING:	
<ul style="list-style-type: none"><li>• (P) 50'-0" HIGH MONOPINE W/ (6) (P) VERIZON WIRELESS ANTENNAS</li><li>• (6) (P) RRU UNITS</li><li>• (2) (P) SURGE SUPPRESSORS, (1) Ⓞ EQUIPMENT &amp; (1) Ⓞ ANTENNAS</li><li>• (P) VERIZON WIRELESS 25'-0"x20'-0" (500 SQ FT) EQUIPMENT LEASE AREA</li><li>• (P) VERIZON WIRELESS (177 SQ FT) MONOPINE LEASE AREA</li><li>• (P) GPS ANTENNA</li><li>• (P) VERIZON WIRELESS 30KW DIESEL GENERATOR ON 132 GALLON UL 2085 RATED FUEL TANK</li></ul>	

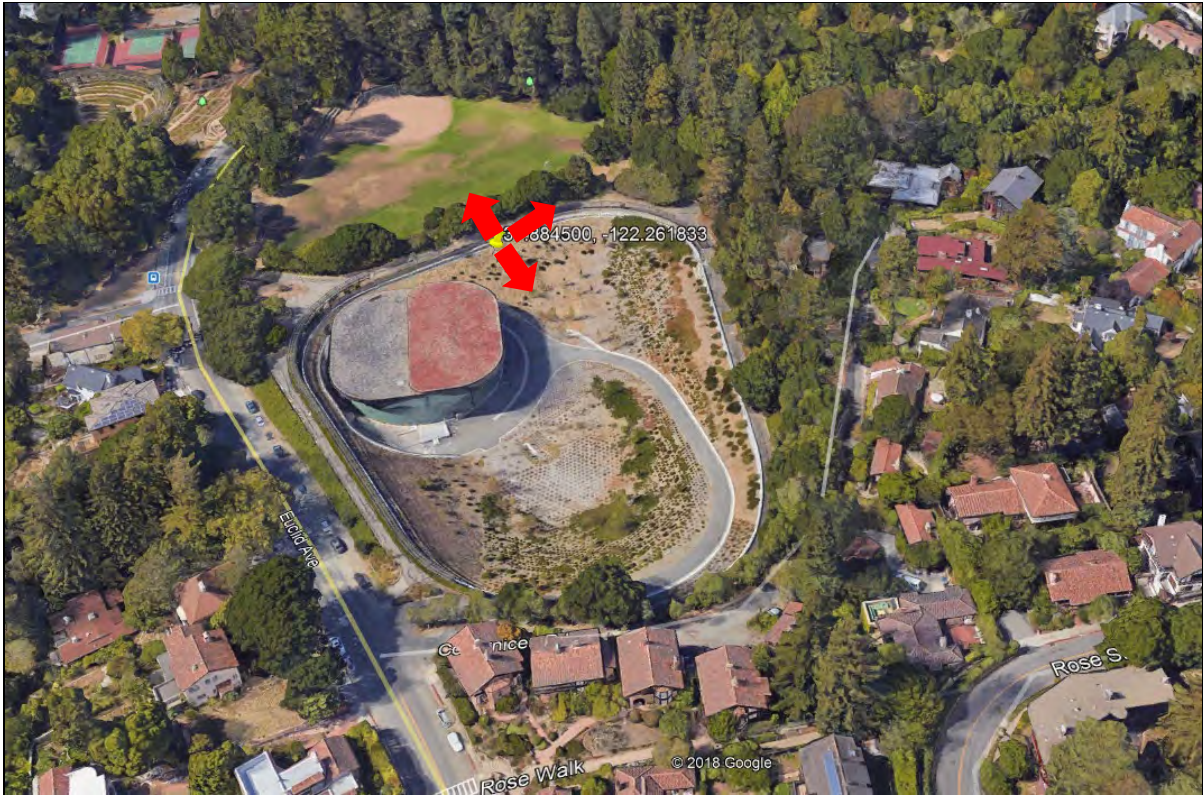
Figure 1: Verizon's Project Description (Source: Plans, title page T-1).

Verizon proposes to install on the monopine six panel antennas distributed evenly with two panel antennas in three sectors (Sector A oriented towards 60° true north ("TN"), Sector B oriented towards 145°TN, and Sector C oriented towards 335°TN).

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See Figure 2 for the approximate location of the monopine and azimuths.



**Figure 2:** Approximate (i) location of monopine, and (ii) azimuth orientations for all three sectors (Source: Google Maps; Annotated by Dr. Kramer).

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See Figure 4 for the proposed antenna layout within the canopy of the proposed monopine.

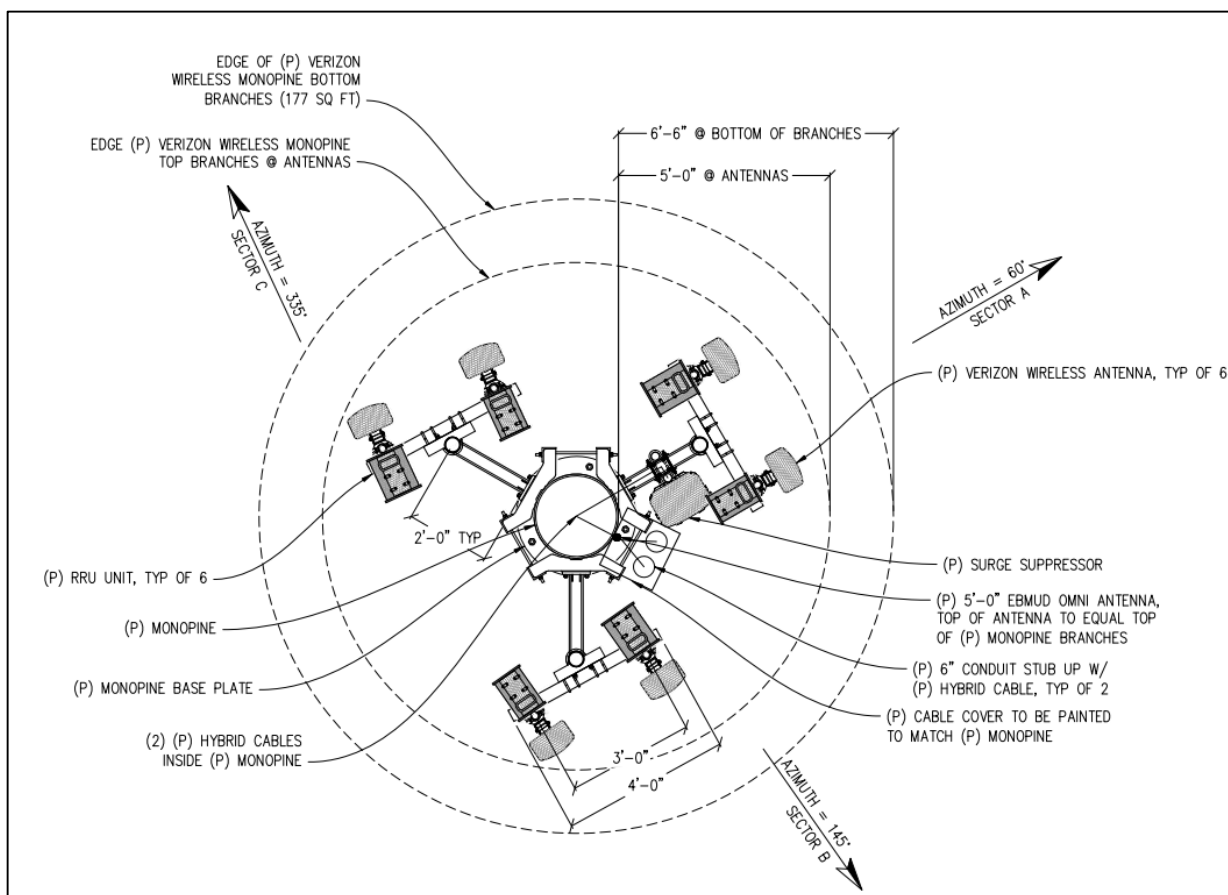


Figure 4: Antenna Plan (Source: Plans, Page A-4).

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### 3. Planned Compliance with RF Exposure Regulations

Under the Telecom Act, the FCC completely occupies the field with respect to RF emissions regulation. The FCC established comprehensive rules for human exposure to RF emissions (the “**FCC Guidelines**”).<sup>1</sup> State and local governments cannot regulate wireless facilities based on environmental effects from RF emissions to the extent that the emissions comply with the FCC Guidelines.<sup>2</sup>

Although localities cannot establish their own standards for RF exposure, local officials may require wireless applicants to demonstrate compliance with the FCC Guidelines.<sup>3</sup> Such demonstrations usually involve a predictive calculation because the site has not yet been built.

#### 3.1. FCC Guidelines, Categorical Exclusions and Exposure Mitigation Measures

FCC Guidelines regulate *exposure* rather than *emissions*.<sup>4</sup> Although the FCC establishes a maximum permissible exposure (“**MPE**”) limit, it does not mandate any specific limitations on power levels applicable to all antennas and requires the antenna operator to adopt exposure-mitigation measures only to the extent that certain persons might become exposed to the emissions. Thus, a relatively low-powered site in proximity to the general population might require more comprehensive mitigation measures than a relatively high-powered site in a remote location accessible only to trained personnel.

The MPE limit also differentiates between “general population” and “occupational” people. Most people fall into the general population class, which includes anyone who either does not know about potential exposure or knows about the exposure but cannot exert control over the transmitters.<sup>5</sup> The narrower occupational class includes persons exposed through their employment and able to exert control over their exposure.<sup>6</sup> The MPE limit for the general population is five times lower than the MPE limit for the occupational class.

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<sup>1</sup> See 47 U.S.C. § 332(c)(7)(B)(iv); see also 47 C.F.R. § 1.1307 *et seq.*; FCC Office of Engineering and Technology, *Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields*, OET Bulletin 65, ed. 97-01 (1997).

<sup>2</sup> See 47 U.S.C. § 332(c)(7)(B)(iv).

<sup>3</sup> See *In re Procedures for Reviewing Requests for Relief from State and Local Regulations Pursuant to Section 332(c)(7)(B)(iv) of the Communications Act of 1934*, *Report and Order*, 15 FCC Rcd. 22821, 22828–22829 (Nov. 13, 2000) (declining to adopt rules that limit local authority to require compliance demonstrations).

<sup>4</sup> See *generally* Human Exposure to Radio Frequency Fields: Guidelines for Cellular and PCS Sites, *Consumer Guide*, FCC (Oct. 22, 2014), available at <https://www.fcc.gov/guides/human-exposure-rf-fields-guidelines-cellular-and-pcs-sites> (discussing in general terms how wireless sites transmit and how the FCC regulates the emissions).

<sup>5</sup> See 47 C.F.R. § 1.1310, Note 2.

<sup>6</sup> See *id.*





Lastly, the FCC “categorically excludes” certain antennas from routine environmental review when either (1) the antennas create exposures in areas virtually inaccessible to humans or (2) the antennas operate at extreme low power. As a general rule, a wireless site qualifies for a categorical exclusion when mounted on a structure built solely or primarily to support FCC-licensed or authorized equipment (*i.e.*, a tower) and such that the lowest point on the lowest transmitter is more than 10 meters (32.8 feet) above ground.<sup>7</sup>

Categorical exclusions establish a presumption that the emissions from the antennas will not significantly impact humans or the human environment. Such antennas are exempt from routine compliance evaluations but not exempt from actual compliance. Under some circumstances, such as a heavily collocated tower or when in close proximity to general population members, even a categorically excluded site will require additional analysis.

### **3.2. Planned Compliance Evaluation and Recommendations**

The FCC Guidelines categorically exclude Verizon’s proposal from routine compliance evaluations because Verizon proposes to install its equipment on a new support structure camouflaged as a monopine that is exclusively intended to support FCC-licensed wireless equipment. In addition, the lowest point on the lowest transmitting antenna is proposed to be approximately at 37 feet AGL.

In the instant case, Verizon has submitted to the City the H&E RF Report dated October 17, 2018, sealed by Mr. William F. Hammett, P.E.

Presuming that the H&E RF Report contains the current RF emissions data, it is sufficient to allow us to conduct an independent RF analysis to determine whether the project as proposed will comply under the FCC’s Rules. See Figure 7.

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<sup>7</sup> See *id.* § 1.1307(b)(1).



### Site and Facility Description

Based upon information provided by Verizon, including zoning drawings by Streamline Engineering and Design, Inc., dated March 13, 2018, it is proposed to install six JMA Wireless Model MX06FRO840-02 directional panel antennas on a new 45-foot steel pole, configured to resemble a pine tree,\* to be sited about 70 feet north of the water tank at the EBMUD Berryman Reservoir facility, located on Euclid Avenue in Berkeley. The antennas would employ up to 16° downtilt, would be mounted at an effective height of about 40½ feet above ground, and would be oriented in pairs toward 60°T, 145°T, and 335°T. The maximum effective radiated power in any direction would be 51,870 watts, representing simultaneous operation at 20,900 watts for AWS, 10,000 watts† for PCS, 10,970 watts for cellular, and 10,000 watts for 700 MHz service. There are reported no other wireless telecommunications base stations at the site or nearby.

Figure 7: Site and Facility Description (Source: H&E RF Report Page 2).

TLF notes that the H&E RF Report contains a footnote on the bottom of page 2 stating, “[f]oliage atop the pole puts the overall height at 50 feet.” Based on the transmitted frequencies and power levels disclosed in the H&E RF Report, Verizon’s emissions will create a worst case “controlled access zone” that extends to a maximum of approximately 100 feet horizontally from the face of the antennas at approximately the same height as the antennas emissions center. Those emission centers are at approximately 40' 9" above ground level (“AGL”) for Sectors A, B and C.

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See Figure 8 for the approximate azimuths and extents of the controlled zone. Note that this figure has been revised and expanded for this updated report based on the public comment mentioned above.



**Figure 8:** Approximate (i) location of monopine, and (ii) azimuth orientations for all three sectors (Source: Google Earth Pro, Applicant's Plans; annotations by Dr. Kramer).

The length of each of the three azimuth bars in Figure 8 is approximately 100', which is the limit of the controlled zone, and which is at least 41 feet above ground level at the location of the proposed monopine.



The revised and expanded Figure 8 shown in this updated report was prepared by TLF using Google Earth Pro to provide the underlying area image. Superimposed above that image is a portion of the Applicant's scaled site Plans keyed to match the underlying image. From the scaled Plans overlying the area image, the length of the controlled zone (which is at the antenna height) is projected as red bars. The length of the bars remains approximate but is more precisely portrayed in Figure 8 as revised above compared with Figure 8 in the May Report.

The net result of the clarification to Figure 8 in this updated report is that the proposed Verizon site continues to show full planned compliance with the applicable FCC rules regarding public exposure to RF emissions from cell sites.

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See Figure 9 for the proposed location and centerline distance of a future carrier's antennas.

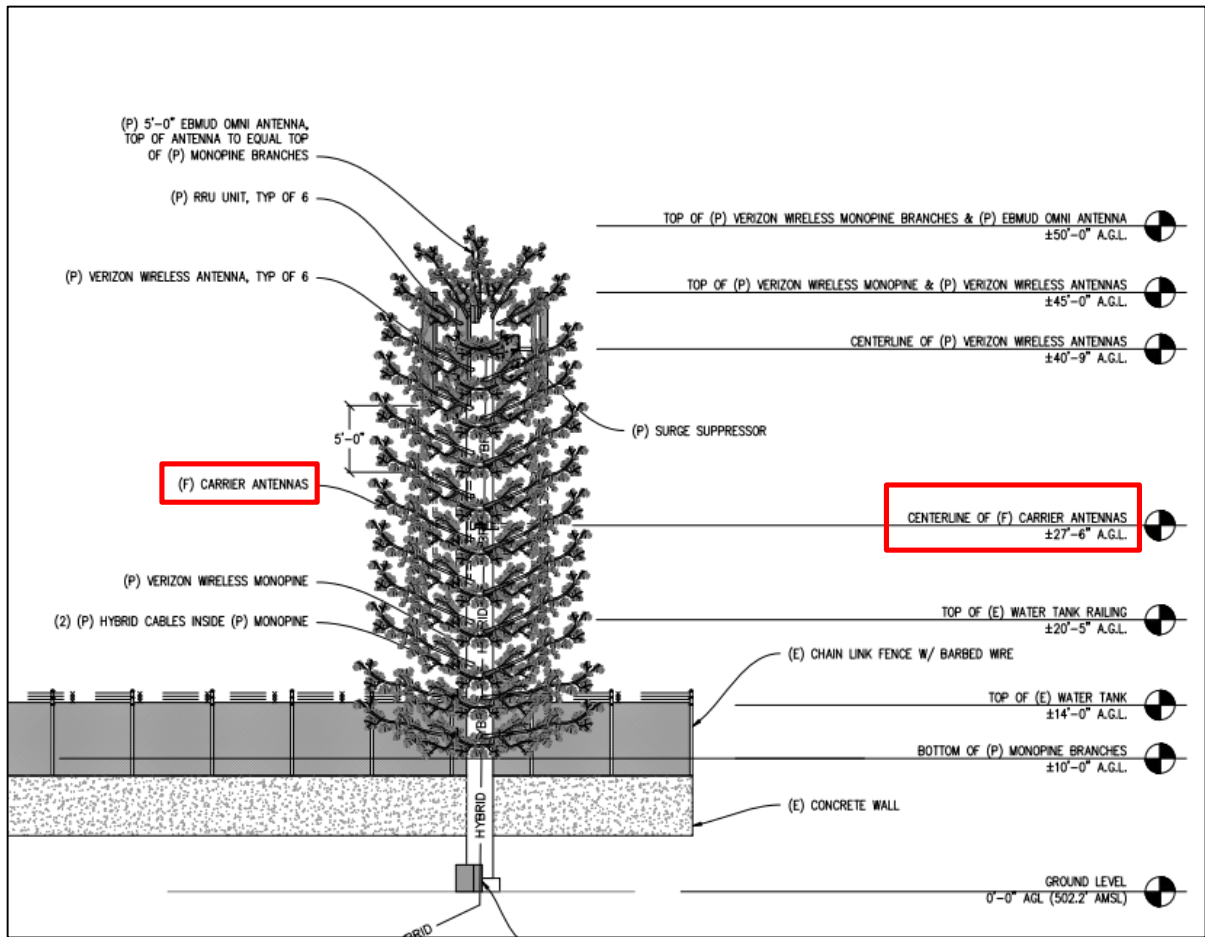


Figure 9: Future Carrier Antenna Locations (Source: Plans, Page A-5, Annotated by Dr. Kramer).

While the site as currently proposed is categorically excluded under the FCC Guidelines, TLF notes that another round of independent RF analysis will be needed to determine whether a future carrier's antennas will comply under the FCC's Rules since the future carrier's antennas will be installed lower than 10 meters AGL. For this reason, we recommend that the City direct Verizon to strike all 'future' elements from the Plans and the Application so that any future changes to this site only occur upon a subsequent City Planning application and then-current RF emissions analysis of the then-existing Verizon emissions and the proposed emissions of the future carrier(s).



We recommend the City consider adopting the following conditions of approval to promote compliance with the FCC Guidelines in the event that the City approves the application in its current form:

1. The permittee shall keep all access points to the site locked at all times, except when active maintenance is performed on the equipment.
2. The permittee shall install and at all times maintain in good condition an "RF Notice" sign and a network operations center sign adjacent to all access points of the site. The signs required in this condition must be placed in a location where they are clearly visible to a person approaching the access point(s) whether in the open or closed positions.
3. The permittee shall ensure that all signage complies with FCC OET Bulletin 65 and ANSI C95.2 for color, symbol, and content conventions. All such signage shall at all times provide a working local or toll-free telephone number to its network operations center, and such telephone number shall be able to reach a live person who can exert transmitter shut-down control over this site as required by the FCC.

These recommended conditions are based on the site in its proposed location and equipment configuration. To the extent that any changes are made to the proposal, a revised analysis may be necessary.

### **3.3. RF Compliance with City of Berkeley Municipal Code**

Finally, TLF recommends that the City also require that Verizon expressly agree to follow all of the City's Municipal Code pertaining to RF safety, including but not limited to:

- BMC 16.10.100 Maintenance of facilities--Continuing obligations § G
- BMC 23C.17.040 Minimum Application Requirements § D (sworn statement)
- BMC 23C.17.090 Requirement for Certification of Facilities in its entirety (post construction)

/TLF

