02
Special Meeting Item

Office of the City Manager

PUBLIC HEARING
July 7, 2020

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Timothy Burroughs, Director, Planning & Development Department

Subject: ZAB Appeal: 0 Euclid Avenue (Berryman Reservoir), Use Permit #ZP2018-0236

RECOMMENDATION

Conduct a public hearing regarding an appeal of the Zoning Adjustments Board decision to deny Use Permit #ZP2018-0236, a request 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 and, upon conclusion, consider the record of proceedings and testimony to determine whether the findings for approval can be made regarding view protection and camouflage.

FISCAL IMPACTS OF RECOMMENDATION

None.

CURRENT SITUATION AND ITS EFFECTS

On December 17, 2018, the applicant team for Verizon Wireless, represented by David Haddock of Ridge Communications Inc., submitted an application for Use Permit #ZP2018-0236 for a proposed 50' high wireless freestanding tower facility with antennas and remote radio units mounted on the monopole. Equipment cabinets and a standby generator are proposed on the ground near the monopole. The site is in the Single Family Residential District – Hillside Overlay (R-1H) Zoning District.

On June 27, 2019, the ZAB conducted a public hearing and discussed the project. (See Attachment 2 for the staff report that was presented to ZAB.) There were approximately 25 speakers, most of whom were local residents who opposed the project on grounds related to aesthetics, noise, health hazards, safety, property values, and procedural issues, among others. The ZAB found that the applicant did not adequately address concerns and questions regarding the need for the facility and expressed concerns regarding the design and location of the facility. The ZAB determined that it could not make the necessary findings for approval and therefore denied the Use Permit by a unanimous vote (Yes: Clarke, Habibi, Kahn, Kim, Lee-Owens, Olson, Selawsky, Sheahan, Tregub).

On July 2, 2019, staff issued the notice of the ZAB decision (see AR pages 729 - 736). On July 16, 2019, the applicant filed an appeal of the ZAB decision with the City Clerk (see Attachment 3). On July 23, 2019, the appellant filed an agreement to toll the shot clock in order to allow the Council an opportunity to review the appeal. On October 15, 2019, notices were posted for an October 29, 2019 City Council hearing. The appellant subsequently requested a postponement of the originally scheduled October 29, 2019 City Council hearing in order to prepare additional studies. Several additional extensions were agreed to between the appellant and City (see Attachment 4).

On March 16, 2020, the applicant submitted additional information regarding the local service limitations and alternative sites that were considered. On May 7, 2020 the City's peer reviewer determined that these documents reasonably demonstrated that the proposed facility would improve service in service area (including filling a coverage gap) and that the proposed antenna installation would have the least visual impact on the community (see Attachments 5A, 5B and 5C).

The City Clerk set the matter for a public hearing at the City Council meeting on July 7, 2020. At least ten days prior to the hearing, staff posted the public hearing notice at the site and two nearby locations, and mailed notices to property owners and occupants within 300 feet of the project site and to all registered neighborhood groups that cover this area. This public hearing at City Council is required to resolve the appeal.

BACKGROUND

The site is in the Berkeley hills on the east side of Euclid Avenue. It is a 3.7 acre parcel belonging to the East Bay Municipal Utility District (EBMUD) and is developed with an approximately 2.6 million gallon water storage tank (reservoir). The balance of the property includes vehicular access areas for maintenance trucks, as well as landscaping, including a pedestrian path. The property is bowl-shaped, surrounded by an earthen berm and fence, with substantial trees around the perimeter of the property. The topography of the neighborhood is such that the elevation of the surrounding area is lower to the west across Euclid Avenue and increases to the east with homes located roughly 400 feet away and at an elevation 20 to 60 feet above the site. The area primarily consists of one- and two-story single-family residential dwellings along Euclid Avenue, Codornices Road, Rose Street and Tamalpais Road. Two public parks are also in the vicinity including Codornices Park immediately to the north (including a large playfield) and the Berkeley Rose Garden approximately 500 feet to the northwest and across the street (see AR page 2).

The proposed wireless telecommunications facility consists of a freestanding tower ("monopole") that would be located at the far northern edge of the bowl-shaped depression on the site. Six antennas, six remote radio units, and other related cables and equipment are proposed to be mounted on the monopole. The equipment cabinets and standby generator are proposed to be placed on the ground of the lowest elevations of the site and would be obscured from view from the street.

Federal Telecommunication Regulations

The Federal Communications Commission (FCC), 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. Federal regulations prohibit the regulation of wireless facilities by state and local governments on the basis of Radio Frequency (RF) emissions to the extent that such facilities comply with the FCC's regulations.

The federal and state laws also limit or prohibit local discretionary review over certain other technical aspects of wireless facilities, including demonstration of need or alternative siting requirements that are excessively burdensome to applicants. This application has demonstrated compliance with all applicable FCC standards for RF; the City's RF peer review consultant reviewed and confirmed these facts.

With respect to siting and other local regulations, current FCC rules prohibit local governments from adopting regulations that "materially inhibit" the ability of wireless providers to provide services. Under current federal rules, "a state or local legal requirement could materially inhibit service in numerous ways—not only by rendering a service provider unable to provide an existing service in a new geographic area or by restricting the entry of a new provider in providing service in a particular area, but also by materially inhibiting the introduction of new services or the improvement of existing services." (FCC 18-133 ¶ 37.) Thus, local regulations cannot require an applicant to demonstrate the existence of a "coverage gap" or prevent an applicant from densifying an existing wireless network. (*Ibid.*)

On the other hand, the City retains the authority to regulate the placement and design of wireless facilities based on objective criteria, so long as reasonable alternatives are available to the carrier. Specifically, FCC Order No. 18-133 provides that local jurisdictions may implement rules for aesthetic and locational requirements that are "(1) reasonable, (2) no more burdensome than those applied to other types of infrastructure deployments, and are (3) objective and published in advance." (FCC 18-133 ¶ 86.)

Additionally, local jurisdictions' decisions on wireless applications have permitting time limits as mandated by Federal regulations, commonly referred to as the "shot clock," which for this application originally expired on June 10, 2019. The applicant team did not originally agree to an extension or "tolling" of the clock prior to the ZAB public hearing on July 2, 2019. Following the submittal of the appeal by the applicant, the applicant team later agreed to toll this clock until November 22, 2019, to allow for the City Council public hearing and resolution of the appeal. Following the Applicant's request for the postponement of the originally scheduled City Council hearing, the tolling agreement was subsequently extended to July 10, 2020 to allow for this hearing to take place.

City of Berkeley Wireless Telecommunication Regulations and ZAB Findings
The City of Berkeley's regulations with respect to wireless telecommunications facilities complement the Federal requirements and focus on compliance with established standards while protecting public safety and promoting community welfare and aesthetic quality.

The City's regulations require that applicants provide information regarding the need for the facility and related design issues (see BMC Section 23C.17.100.B.3):

> (1) the telecommunications objectives sought for the proposed location;
> (2) whether the proposed facility is necessary to prevent or fill a significant gap or capacity shortfall in the applicant's service area;
> (3) whether it is the least intrusive means of doing so; and
> (4) whether there are any alternative sites that would have fewer aesthetic impacts while providing comparable service.

The application of BMC Section 23C.17.100.B.3 is constrained by FCC rules, which among other things expressly preempt local regulations requiring an applicant to demonstrate a gap in coverage, reject the "least intrusive means" standard that had been previously applied in certain federal Courts of Appeals, and prohibit the denial of a permit application based on unpublished or non-objective standards.

Subject to these constraints, the City retains discretion to regulate the design of wireless facilities, including its visibility from a public park, while considering technological requirements and the facilitation of future co-locations. Thus, placement, screening, camouflage, and colors and materials for facilities must be chosen to minimize visibility (see BMC Sections 23C.17.050.B, 23C.17.070.B and C, and 23C.17.100.B.2). Specifically, BMC Sections 23C.17.050.B states: that "[a]ll wireless telecommunications facilities proposed for locations where they would be readily visible from the public right-of-way or from the habitable living areas of residential units within 100 feet shall incorporate appropriate techniques to camouflage or disguise the facility, and/or blend it into the surrounding environment, to the greatest extent feasible." In addition, BMC Section 23C.17.050.C provides:

> *C. No readily visible antenna shall be placed at a location where it would impair a significant or sensitive view corridor except as provided in subsection 1, below.*
> *1. …. [G]round-mounted antennas shall not be placed in direct line of sight of significant or sensitive view corridors or where they adversely affect scenic vistas unless the [City] finds that the facility incorporates appropriate, creative stealth techniques to camouflage, disguise, and/or blend into the surrounding environment to the extent possible….*

"Readily visible" is defined as follows:

> *A wireless telecommunications facility is readily visible if it can be seen from street level or from the main living area of a legal residence in a residential district or from a public park by a person with normal vision, and distinguished as an antenna or other component of a wireless telecommunication facility, due to the fact that it stands out as a prominent feature of the landscape, protrudes above or out from the building or structure ridgeline, or is otherwise not sufficiently camouflaged or designed to be compatible with the appurtenant architecture or building materials. For purposes of this definition, "main living area" means the living and dining and similar areas of a dwelling, but not bedrooms, bathrooms or similar areas*.

Thus, the City's Wireless Telecommunication Facility ordinance allows the Council to consider design and location alternatives for the installation of wireless facilities, consistent with the requirements under and constraints imposed by federal law.

The applicant's original proposal consisted of a "monopine" (faux tree), designed to look like a pine tree which blends in with the surrounding tree cover and vegetation as depicted in the submitted photosimulations (see AR pages 21-46). Staff requested that the applicant provide multiple photosimulations of design alternatives. The applicant team provided two design options painted in two different colors. These consist of an un-camouflaged monopole painted either grey or green or a four legged tower with an enclosure around the antennas painted grey or green.

The applicant also provided two brief paragraphs as a "Statement Related to Need" in conjunction with the submitted Applicant Statement. Additionally, two tri-color coverage maps were provided which indicated existing and anticipated Verizon coverage following installation of the proposed monopole. These coverage maps denoted existing and expected on-street coverage, in-vehicle coverage, and in-building coverage within the wider Berkeley Hills area (see AR pages 71-75).

During the review of the application, multiple public comment letters were received stating that the proposed faux tree was not a desirable design in proximity to the existing vegetation and tree cover. In response, staff advised the applicant that the proposed un-camouflaged monopole design option painted green was staff's preferable option at the proposed location. Staff stated that this design option would minimize its visibility, and would require less additional monitoring and maintenance to ensure that the faux branches of the faux tree remain in good condition and are not damaged due to weather.

On June 27, 2019, the ZAB heard public testimony, considered the proposed wireless freestanding tower facility with related equipment, and discussed the height, location and visual impacts of the project. A view from one of the neighboring homes was presented with an unverified simulation of a tower at the site (see AR page 109). This

simulated tower appears to be much taller than the tower represented in the application materials. Requests were also made that a “story pole” be installed so the actual size and location of the proposed tower could be seen and that additional viewpoints such as from the hillside above the site and the public parks be considered when evaluating the aesthetic impact. Members of the ZAB expressed a desire to review and consider additional information from the applicant, including such visual representations and location alternatives. However, due to the shot clock’s impending expiration at that time, the ZAB noted that it was required to make a decision regarding the proposal as presented.

The ZAB determined that it could not make the findings for approval because the application did not provide adequate evidence that the proposed wireless telecommunications facility is required to address a coverage gap or capacity shortfall. The ZAB also found that the facility would be readily visible at the proposed location and would impair a significant or sensitive view corridor, and would be inconsistent with General Plan policies and ordinance purposes to preserve the character of the area. The ZAB concluded the public hearing and denied the project with findings regarding detriment. [1]

ENVIRONMENTAL SUSTAINABILITY

The CEQA Determination prepared for the project was as Categorically Exempt pursuant to Sections 15301 and 15303 of the CEQA Guidelines (“Existing Facilities” and “New Construction or Conversion of Small Structures”). However, this determination was not adopted by the ZAB as the project was denied.

RATIONALE FOR RECOMMENDATION

The issues raised in the appellant’s letter, and staff’s response, are as follows.

Appeal Issue #1: The applicant/appellant states that “[t]he 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…”

> Staff Response: BMC Section 23C.17.040.C.2 requires that the applicant provide “a statement of the telecommunications objectives sought for the proposed location, whether the proposed facility is necessary to prevent or fill a significant gap or capacity shortfall in the applicant’s service area, and whether there are any alternative sites that would have fewer aesthetic impacts while providing comparable service.” The applicant’s originally submitted statement prior to the ZAB hearing was:
>
> > *Verizon’s coverage objectives for this project are to improve service in the area described* [of coverage in the Berkeley Hills area, especially along

[1] For the reasons previously explained, Council should consider the extent to which the bases for these findings are preempted by federal law.

> Euclid Avenue north of EBMUD's Berryman Reservoir], *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.*

The ZAB found that while the statements, coverage maps, and information provided in the application and at the public hearing reflected the telecommunications objectives sought for the proposed location, they did not clearly explain or demonstrate three of the other four concerns required by the applicant's statement regarding coverage. Members of the ZAB found the information provided was inadequate to explain the significant gap in coverage or capacity shortfall. The ZAB also found that the applicant did not provide adequate information regarding specific alternative locations, either on-site or within the vicinity, and why they are unsuitable.

Although the applicant team responded to questions raised during the ZAB public hearing, they did not clearly explain the discrepancy between the referenced coverage data and published marketing maps available on Verizon's website which show that the area has coverage. The applicant stated these marketing maps reflect different information and are not accurate for all situations, including in-building and in-vehicle situations. Following receipt of the appeal letter, staff requested that the applicant provide additional information to confirm or elaborate on the coverage maps and information regarding coverage gaps.

Subsequently, additional information was submitted on March 16, 2020. This consisted of a Statement in Support of Verizon Wireless's Proposed Facility that described the local coverage and capacity limitations and an Alternative Analysis that discussed the potential placement of a similar antenna system on ten sites in the vicinity. These additional statements were peer reviewed by the City's consultant (see Attachments 5A, 5B and 5C) and were found to be reasonable.

The additional evidence presented by the applicant included a "drive test" conducted in December 2019 to measure signal strength at different locations, plotted on a map, which the peer reviewer noted is "a usual and customary means of expressing signal strength at a given location." The coverage maps also show the projected signal strength after the antenna installation. Alternative locations throughout north Berkeley were described and also evaluated, including

façade/roof-mounted antennas and freestanding antennas at institutional sites such as a church, school, park and utility. Upon reviewing the additional evidence, the City's peer reviewer stated:

> "[The Applicant's] *justification statement and its alternatives analysis reasonably demonstrate that: (a) there are underserved areas within the claimed gap area that are likely to be subject to reducing service levels if a new nearby cell site is not constructed, and (b) among the alternative sites identified by Verizon, the Berryman Reservoir site is most able to serve the claimed gap area…."*

In reaching this conclusion, the City's peer reviewer cited the distance from and topography around the proposed coverage area, lack of availability of the sites, and close proximity of the alternative sites to residences and other sensitive uses. The City has limited discretion to deny the project based on these considerations, and in particular, cannot require the applicant to demonstrate a gap in coverage or service exists before granting an application to install wireless facilities.

Appeal Issue #2: The applicant/appellant asserts that "[t]he ZAB erred in finding that the Proposed Facility is not the least intrusive means of serving the gap [in coverage], 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..."

Staff Response: As noted above, data in support of coverage gaps and location alternatives has been supplemented by the applicant and peer reviewed by the City's consultants, and may support the conclusion that the project site is a necessary means of addressing the coverage gap.

As for options to reduce the intrusiveness of the project at the Berryman Reservoir site, the project was originally evaluated under three design scenarios including a 50-foot tall monopine, a monopole, and a boxy screening shroud, the latter two in color schemes of gray and green (see AR pages 30 – 46).

During the public hearing, the ZAB asked the applicant team whether the proposed facility could be moved more to the north and whether "there [was] something about this particular location that requires it to be in that particular spot." The applicant team responded that "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." The applicant further stated that the height could potentially be lowered, but that colocation of other providers is a

consideration, and did not provide any additional information regarding the potential to design the tower to be lower.

The ZAB could not affirmatively find based on the available evidence that the proposed project was the least intrusive means nor that it would not be readily visible or obstruct significant views from residential living areas, nor that it was not readily visible from a public park, and so it denied the project. The City has limited discretion to deny the project based on these considerations.

In particular, the City cannot require the applicant to demonstrate that the proposed facility is the "least intrusive means" of providing service and cannot deny the application based on unpublished or non-objective standards. However, the City Council may evaluate the project based on objective standards related to impacts on view corridors (see generally BMC Section 23C.17.050.C), subject to the constraints that the application of those standards may not materially inhibit the provision of wireless services and may not be based on subjective considerations.

Appeal Issue #3: The applicant/appellant states that "[t]he written denial simply references [General Plan Land Use and Urban Design] policies but provides no explanation as to how the Proposed Facility does not comply. Similarly, the written denial referenced the 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…"

Staff Response: During the public hearing on June 27, 2019, the ZAB stated that the project was not consistent with the General Plan Policies and voted to deny the wireless facility and directed staff to prepare the findings of denial. ZAB discussed that the proposed 50-foot tall wireless facility at the proposed location within an open area on the Berryman Reservoir, not adjacent to trees of similar heights, is not consistent with the scale or character of the Residential Hillside area. Members of the ZAB stated that they found the design and location proposed to be intrusive. The ZAB referenced the 2002 General Plan, which contains policies regarding area character, context, and design.

Additionally, based on the proceedings of the public hearing, the written ZAB Findings of Denial state that the proposed wireless telecommunications facility does not meet the objectives of the City's ordinance (BMC Section 23C.17.020.B.1, Purposes) due to its design and location. Therefore, it was denied.

The site plan, aerial photos, visual simulations and viewshed map illustrate that the proposed monopine or monopole would be located adjacent to substantial trees and within an isolated portion of the existing reservoir bowl, such that it would be seen against a backdrop of similar height vegetation (see AR pages 21

– 46). Any decision to uphold ZAB's denial of the permit on this basis would require the Council to identify a published, objective design or location standard that meets the requirements of FCC Order 18-133 ¶ 86.

Appeal Issue #4: The applicant/appellant asserts that the ZAB erred when it concluded 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. Verizon Wireless provided photosimulations as evidence that show the Proposed Facility treepole blends with the backdrop of established evergreen trees.

Staff Response: The applicant originally submitted only one location option for the monopole on the subject property, which the ZAB reviewed and discussed. The ZAB reviewed and considered the alternative design options and photo simulations presented by the applicant and neighbors; the ZAB found that the views presented did not clearly demonstrate what the facility would look like from the surrounding properties, including the homes and public park in the area.

BMC Section 23C.17.070.C (Design Requirements) further states: "No readily visible antenna shall be placed at a location where it would impair a significant or sensitive view corridor…" and BMC Section 23F.04.010 defines "view corridor" as: "A significant view of the Berkeley Hills…. or any other significant vista that substantially enhances the value and enjoyment of real property." The ZAB considered the concerns of the neighbors and concluded that construction of the proposed 50' tall monopole at the proposed location at Berryman Reservoir would be noticeable by residents and park visitors and could affect their views.

The "readily visible" test in BMC Section 23C.17.100.B.2 (Findings Required for Approval) states that in order to approve a Use Permit for a Wireless Facility the ZAB must find that the facility 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.

BMC Section 23F.04.10 defines "readily visible" as:

> *"A wireless telecommunications facility is readily visible if it can be seen from street level or from the main living area of a legal residence in a residential district or from a public park by a person with normal vision, and distinguished as an antenna or other component of a wireless telecommunication facility, due to the fact that it stands out as a prominent feature of the landscape, protrudes above or out from the building or structure ridgeline, or is otherwise not sufficiently camouflaged or designed to be compatible with the appurtenant architecture or building materials. For purposes of this definition, "main living area" means the living and dining and similar areas of a dwelling, but not bedrooms, bathrooms or similar areas."*

The applicant has not submitted any additional information about views. It is possible that neighbors and park users could see the pole, but it is not clear that it would be obtrusive in light of the existing tree cover around the perimeter of the reservoir and the distances to the viewers, and it does not appear that the pole would be in a line of sight to a significant view corridor because it would be located to the far north of the site while residential views are generally toward the west.

In assessing the impact of the proposed wireless facility on views, the City Council must consider the availability of alternative sites and the possibility that a denial of the permit application would materially inhibit the provision of wireless services. The City retains discretion to determine the most effective means of camouflaging the tower, whether it be a pole (in gray or green) or a faux tree.

Appeal Issue #5: The applicant/appellant asserts that "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-1H 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."

Staff Response: BMC Section 23C.17.070.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".

During the public hearing the ZAB asked why the height was necessary, why 50 feet was proposed, and whether the wireless tower height could be lowered. The applicant team replied that the height of 50 feet was required to be above the metal reservoir water tank which would interfere with the signal and to accommodate future co-locations of other antennas. The applicant team stated that they may be able to lower the height, perhaps to a maximum height of 40 or 45 feet, but did not specify to what degree. The additional information provided by the applicant does not discuss whether lowering the height of the proposed facility would materially inhibit the introduction of new services or the improvement of existing services.

ALTERNATIVE ACTIONS CONSIDERED

Pursuant to BMC Section 23B.32.060.D, the Council may (1) dismiss the appeal and uphold the ZAB decision to deny the project (see Attachment 1, Exhibit A1 for ZAB-adopted findings); (2) uphold the appeal and approve the project (see Attachment 1, Exhibit A2 for findings and conditions of approval prepared by staff prior to the ZAB

hearing); or (3) modify either the denial or approval documents based on evidence and testimony at the hearing.

Action Deadline:
The City and Applicant have agreed to a tolling of the FCC "shot clock" to July 10, 2020. Pursuant to BMC Section 23B.32.060.G, if the disposition of the appeal has not been determined within 30 days from the date the public hearing was closed by the Council (not including Council recess), then the decision of the Board shall be deemed affirmed and the appeal shall be deemed denied.

CONTACT PERSONS
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Attachments:
1. Draft Resolution
    - Exhibit A1: Findings of Denial
    - Exhibit A2: Findings and Conditions of Approval
    - Exhibit B: Project Plans from June 27, 2019, ZAB Report
    - Exhibit C: Photosimulations from June 27, 2019, ZAB Report
2. ZAB Staff Report, dated June 27, 2019
3. Appeal Letter, dated July 16, 2019
4. Verizon Wireless Shot Clock Extension Agreements
5. Supplemental Applicant Submittal Materials
    - Exhibit 5A: Alternative Analysis, submitted March 16, 2020
    - Exhibit 5B: Statement in Support of Verizon Wireless's Proposed Facility, submitted March 16, 2020
    - Exhibit 5C: Peer Review of Alternatives Analysis and Justification Statement, received May 7, 2020
6. Index to Administrative Record
7. Administrative Record
8. Public Hearing Notice

ATTACHMENT 1

RESOLUTION NO. ##,###-N.S.

[UPHOLD / DENY] THE APPEAL OF THE ZONING ADJUSTMENTS BOARD ("ZAB") DECISION TO DENY USE PERMIT #ZP2018-0236 AND [DENY / APPROVE] THE REQUEST TO ESTABLISH A NEW 50' HIGH ["MONOPOLE" / "MONOPINE"] 4G LTE WIRELESS FACILITY OPERATED BY VERIZON WIRELESS AT THE EAST BAY MUNICIPAL UTILITY DISTRICT BERRYMAN RESERVOIR SITE CONSISTING OF SIX ANTENNAS, SIX REMOTE RADIO UNITS, AND ASSOCIATED GROUND EQUIPMENT.

WHEREAS, on December 17, 2018, the applicant team for Verizon Wireless represented by David Haddock of Ridge Communications Inc., ("applicant") filed an application for a Use Permit to establish a new wireless telecommunications facility to include a 50' high wireless freestanding tower facility with antennas and remote radio units mounted on the monopole. Equipment cabinets and a standby generator were proposed on the ground near the monopole ("project"); and

WHEREAS, on April 11, 2019, staff deemed the application complete; and

WHEREAS, on June 12 2019, staff mailed 125 public hearing notices to adjoining property owners and occupants within 300 feet of the site, and to interested neighborhood organizations and posted a Notice of Public Hearing at and in the vicinity of the site to inform the public of the Zoning Adjustments Board (ZAB) Public Hearing; and

WHEREAS, on June 27, 2019, the ZAB held a public hearing in accordance with BMC Section 23B.32.030, and denied the Use Permit application; and

WHEREAS, on July 2, 2019, staff issued the notice of the ZAB decision; and

WHEREAS, on July 16, 2019, the applicant team filed an appeal of the ZAB decision with the City Clerk; and

WHEREAS on March 16, 2020, the applicant team submitted additional information about the existing coverage and capacity gaps and an alternative location analysis for City review; and

WHEREAS on May 7, 2020, the City's peer reviewer provided an assessment of the applicant's submitted information; and

WHEREAS, on June 23, 2020, staff mailed notices to adjoining property owners and occupants within 300 feet of the site, and to interested neighborhood organizations and posted a Notice of Public Hearing at and in the vicinity of the site, to inform the public of the City Council public hearing; and

WHEREAS, on July 7, 2020, the Council considered the record of the proceedings before the ZAB, and the staff report and correspondence presented to the Council, and, in the opinion of this Council, the facts stated in, or ascertainable from this information, do not warrant further hearing.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the Council hereby [APPROVES / DENIES] Use Permit #ZP2018-0236 based on the findings and conditions shown in Exhibit A for the project depicted in Exhibits B and C, and dismisses the appeal.

Exhibit A1: Findings of Denial
Exhibit A2: Findings and Conditions of Approval
Exhibit B: Project Plans from June 27, 2019, ZAB Report
Exhibit C: Photosimulations from June 27, 2019, ZAB Report

ATTACHMENT 1 - EXHIBIT A1

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

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;

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.

ATTACHMENT 1 - EXHIBIT A2

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

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

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

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.

C. A permit may be declared lapsed and of no further force and effect if it is not exercised within one year of its issuance, except that permits for construction or alteration of structures or buildings may not be declared lapsed if the permittee has (1) applied for a building permit or (2) made substantial good faith efforts to obtain a building permit and begin construction, even if a building permit has not been issued and/or construction has not begun.

9. Indemnification Agreement

The applicant shall hold harmless, defend, and indemnify the City of Berkeley and its officers, agents, and employees against any and all liability, damages, claims, demands, judgments or other losses (including without limitation, attorney's fees, expert witness and consultant fees and other litigation expenses), referendum or initiative relating to, resulting from or caused by, or alleged to have resulted from, or caused by, any action or approval associated with the project. The indemnity includes without limitation, any legal or administrative challenge, referendum or initiative filed or prosecuted to overturn, set aside, stay or otherwise rescind any or all approvals granted in connection with the Project, any environmental determination made for the project and granting any permit issued in accordance with the project. This indemnity includes, without limitation, payment of all direct and indirect costs associated with any action specified herein. Direct and indirect costs shall include, without limitation, any attorney's fees, expert witness and consultant fees, court costs, and other litigation fees. City shall have the right to select counsel to represent the City at Applicant's expense in the defense of any action specified in this condition of approval. City shall take reasonable steps to promptly notify the Applicant of any claim, demand, or legal actions that may create a claim for indemnification under these conditions of approval.

ADDITIONAL CONDITIONS OF APPROVAL

Pursuant to BMC Section 23B.32.040.D, the Zoning Adjustments Board attaches the following conditions to this Permit:

Prior to Issuance of Any Building Permit

10. Project Liaison. The applicant shall include in all building permit plans and post onsite the name and telephone number of an individual empowered to manage construction-related complaints generated from the project. The individual's name, telephone number, and responsibility for the project shall be posted at the project site for the duration of the project in a location easily visible to the public. The individual shall record all complaints received and actions taken in response, and submit written reports of such complaints and actions to the project planner on a weekly basis. **Please designate the name of this individual below:**

❑ **Project** **Liaison**

_____

Name Phone #

11. The plan set shall be revised to show the photo-simulations on one of the first three pages (Sheet A-1, for example). The sheet(s) containing the photo-simulations shall be of the same size as those sheets containing the construction drawings. Revisions shall include the following:

a. The proposed facility shall be designed as an un-camouflaged monopole painted green.

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.

VERIZON WIRELESS EQUIPMENT ENGINEER:	VERIZON WIRELESS REAL ESTATE:
SIGNATURE DATE	SIGNATURE DATE
VERIZON WIRELESS CONSTRUCTION:	VERIZON WIRELESS RF ENGINEER:
SIGNATURE DATE	SIGNATURE DATE
PROPERTY OWNER:	RIDGE COMUNICATIONS – LEASING
SIGNATURE DATE	SIGNATURE DATE
RIDGE COMUNICATIONS – CONSTRUCTION	RIDGE COMUNICATIONS – ZONING
SIGNATURE DATE	SIGNATURE DATE

verizon

BERKELEY HILLS

EBMUD BERRYMAN RESERVOIR, BERKELEY, CA 94708

LOCATION NUMBER: 273566

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
		FIBER:	AT&T
SITE ADDRESS:	EBMUD BERRYMAN RESERVOIR BERKELEY, CA 94708		
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 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

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

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 Sierra College Blvd, Suite E Granite Bay, CA 95661
Contact: Larry Houghtby Phone: 916-275-4180
E-Mail: larry@streamlineeng.com Fax: 916-660-1941

PRELIMINARY: NOT FOR CONSTRUCTION

KEVIN R. SORENSEN
S4469

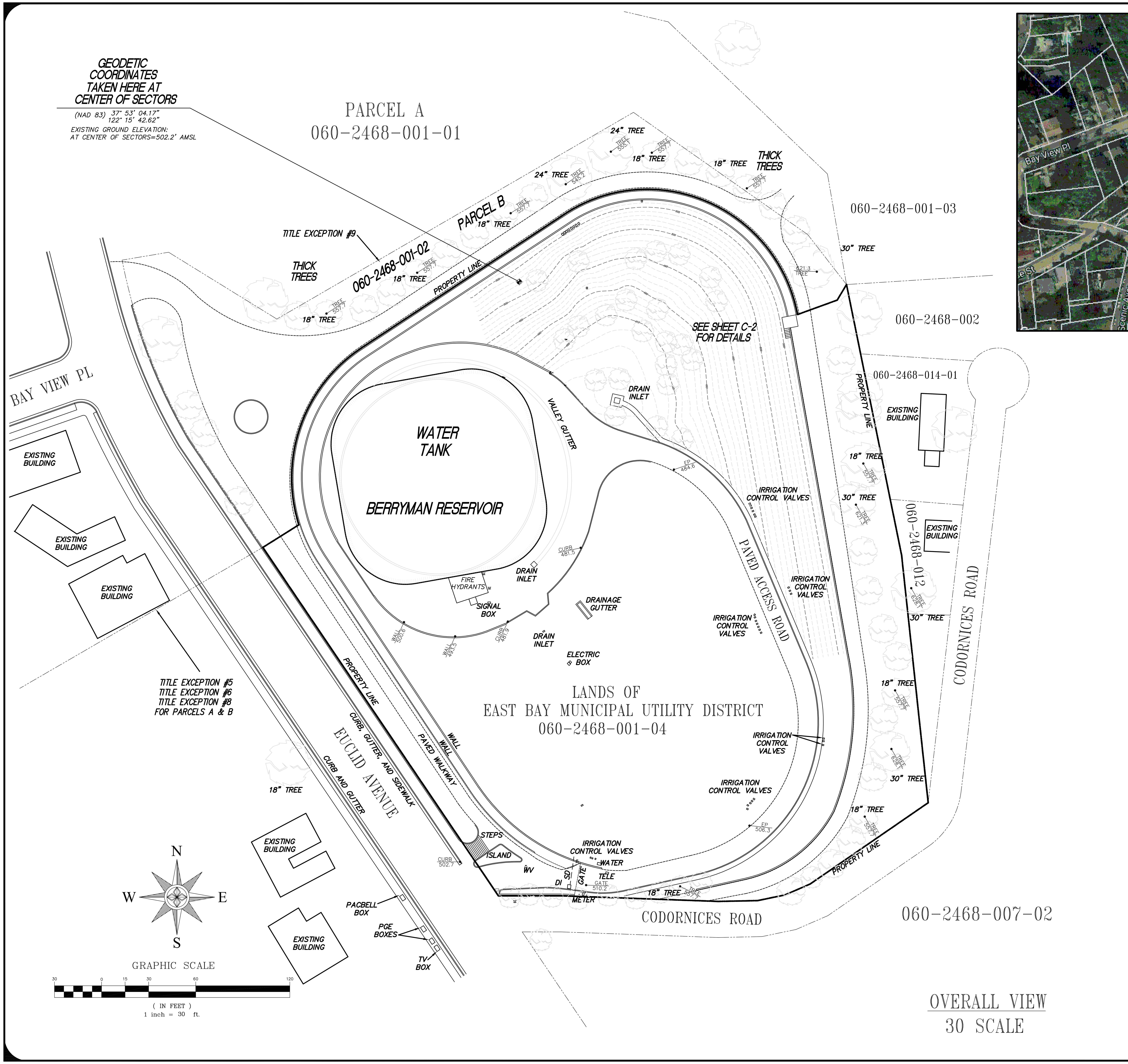
ISSUE STATUS

△	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



VICINITY MAP
N.T.S.

PROPERTY INFORMATION

OWNER: EAST BAY MUNICIPAL UTILITY DISTRICT
ADDRESS: 375 11TH STREET
OAKLAND, CA 94607

SITE: BERKELEY HILLS
EBMUD 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 SHOWED 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
TFC	TOP FACE CURB
R/W	RIGHT OF WAY
GS	GROUND SHOT
DW	ACCESS DRIVEWAY
TOP	TOP OF SLOPE
SW	SIDEWALK
JP	JOINT POLE
FH	FIRE HYDRANT
125	LOT NUMBER
	GEODETIC COORDINATES
XXXX.X NG	SPOT ELEVATION
	DISH ANTENNA
WV	WATER CONTROL VALVE
	FIRE HYDRANT
	GUY CONDUCTOR
	FOUND AS NOTED
	POWER POLE
	LIGHT POLE
E	ELECTRICAL TRANSFORMER
AC	AIR CONDITIONING UNIT
	TELEPHONE PEDESTAL
TV	TELEPHONE VAULT
T	TELEPHONE MANHOLE
G	GAS VALVE
GM	GAS METER
	PROPERTY LINE
	CHAIN LINK FENCE

ISSUE STATUS

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

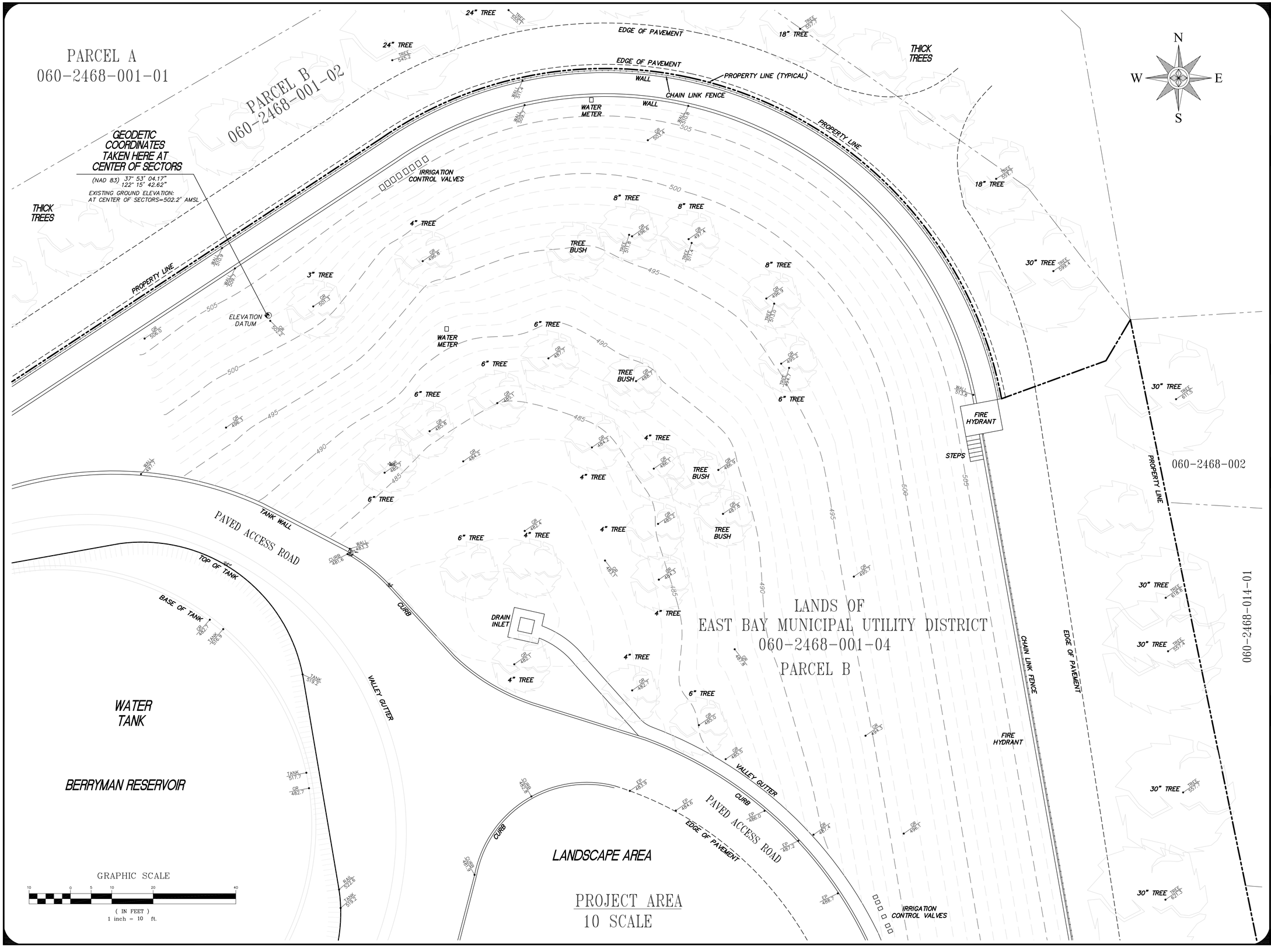
HAYES
Land Surveying And Mapping
2830 MADIGAN COURT
CONCORD, CA 94518

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-1
SHEET 1 of 3



ISSUE STATUS

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

HAYES
Land Surveying And Mapping
2830 MADIGAN COURT
CONCORD, CA 94518

LICENSED LAND SURVEYOR
JAMES K. HAYES
No. 7500
Exp. 12/31/19
STATE OF CALIFORNIA

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

(P) VERIZON WIRELESS (177 SQ FT) MONOPINE LEASE AREA
(P) VERIZON WIRELESS MONOPINE W/ (P) ANTENNAS & ANTENNA EQUIPMENT
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
060-2468-001-02
060-2468-001-03
060-2468-002
060-2468-014-01
060-2468-010
060-2468-007-02
(P) VERIZON WIRELESS 6'-0" NON-EXCLUSIVE WALKING & UTILITY ROUTE
(P) VERIZON WIRELESS 6" U/G CONDUIT W/ (P) HYBRID CABLE, TYP OF 2
TITLE EXCEPTION #9
24" TREE
18" TREE
THICK TREES
30" TREE
PROPERTY LINE
SEE SHEET C-2 FOR DETAILS
(P) VERIZON WIRELESS 25'-0"X20'-0" (500 SQ FT) EQUIPMENT LEASE AREA
(P) VERIZON WIRELESS 12'-0" NON-EXCLUSIVE ACCESS & UTILITY ROUTE
BAY VIEW PL
DRAIN INLET
EXISTING BUILDING
(P) VERIZON WIRELESS 5'-0" NON-EXCLUSIVE UTILITY ROUTE
WATER TANK
(P) VERIZON WIRELESS 6'-0" NON-EXCLUSIVE WALKING & UTILITY ROUTE
BERRYMAN RESERVOIR
(P) NON-EXCLUSIVE TECHNICIAN PARKING SPACE
(P) NON-EXCLUSIVE TURN AROUND AREA
IRRIGATION CONTROL VALVES
PAVED ACCESS ROAD
FIRE HYDRANTS
SIGNAL BOX
DRAINAGE GUTTER
ELECTRIC BOX
CODORNICES ROAD
TITLE EXCEPTION #5
TITLE EXCEPTION #6
TITLE EXCEPTION #8
FOR PARCELS A & B
LANDS OF
EAST BAY MUNICIPAL UTILITY DISTRICT
060-2468-001-04
WALL
PAVED WALKWAY
CURB, GUTTER, AND SIDEWALK
EUCLID AVENUE
CURB AND GUTTER
(P) VERIZON WIRELESS U/G CONDUITS FOR POWER, LIT FIBER, & DARK FIBER
(E) PACIFIC BELL U/G VAULT & (P) VERIZON WIRELESS LIT FIBER P.O.C.
(P) VERIZON WIRELESS SITE ACCESS
STEPS
ISLAND
SITE ACCESS
WATER
TELE
GATE
METER
PACBELL BOX
PGE BOXES
TV BOX
(E) ACCESS GATE & (P) VERIZON WIRELESS SITE ACCESS
(P) VERIZON WIRELESS 17"X30" U/G VAULT W/ TRAFFIC RATED LID FOR DARK FIBER "MEET ME" POINT
(E) PG&E U/G VAULT & (P) VERIZON WIRELESS POWER P.O.C.
(P) VERIZON WIRELESS 5'-0" NON-EXCLUSIVE UTILITY ROUTE
N
S
E
W
GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.
OVERALL VIEW
20 SCALE
ISSUE STATUS
△ | DATE | DESCRIPTION | REV.
10/15/2017 | SITE PLAN | .
1/29/2018 | FINALIZE SURVEY |
5/20/2018 | EASEMENTS PLOTTED |
HAYES Land Surveying And Mapping
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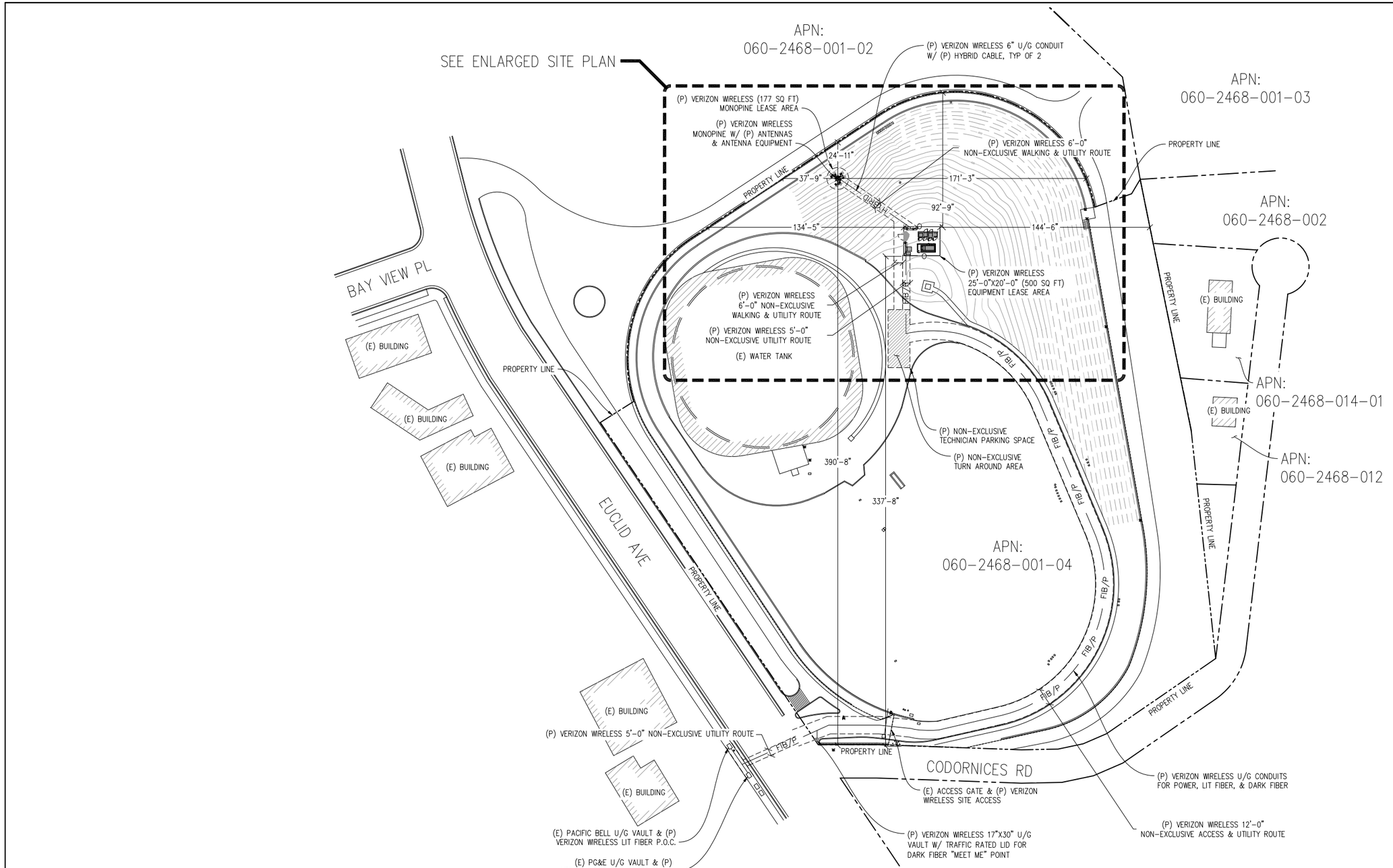
PSL#273566
BERKELEY HILLS
EBMUD BERRYMAN RESERVOIR
BERKELEY, CA 94708
TOPOGRAPHIC SURVEY EXISTING CONDITIONS
C-3
SHEET 3 of 3



SITE PLAN
1"=30'-0"

0 15' 30' 60' 90' 150'

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'

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CONSTRUCTION

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S4469

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	02/06/18	ZD 100%	D.L.
	03/13/18	CLIENT REV	D.G.
	–	–	–
	–	–	–

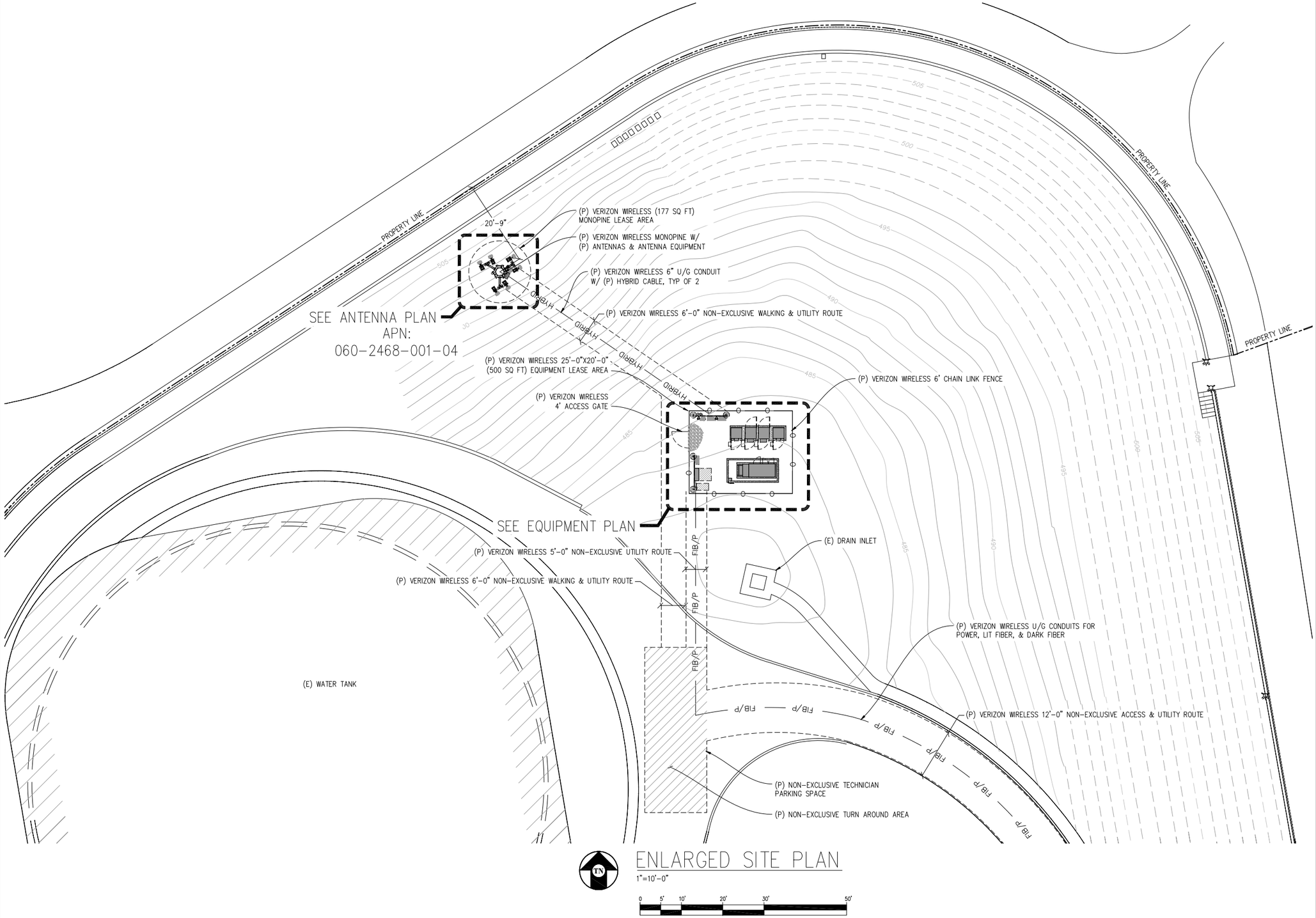
DRAWN BY: D. GARCIA
CHECKED BY: J. GRAY
APPROVED BY: –
DATE: 03/13/18

SHEET TITLE:

SITE PLAN

SHEET NUMBER:

A-1



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	–	–	–

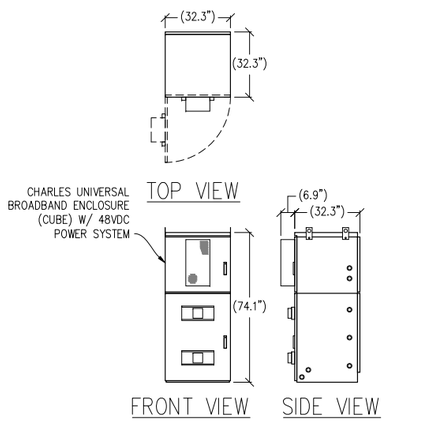
DRAWN BY: D. GARCIA
CHECKED BY: J. GRAY
APPROVED BY: –
DATE: 03/13/18

SHEET TITLE:

ENLARGED SITE PLAN

SHEET NUMBER:

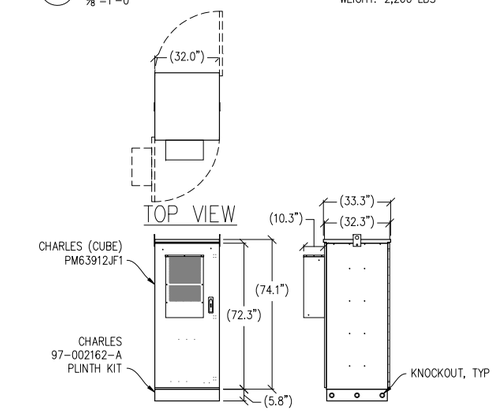
A-2



1 POWER CABINET DETAIL

3/8"=1'-0"

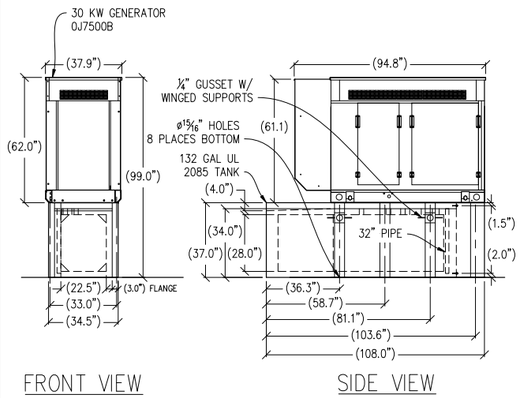
WEIGHT: 2,260 LBS



2 MISC CABINET DETAIL

3/8"=1'-0"

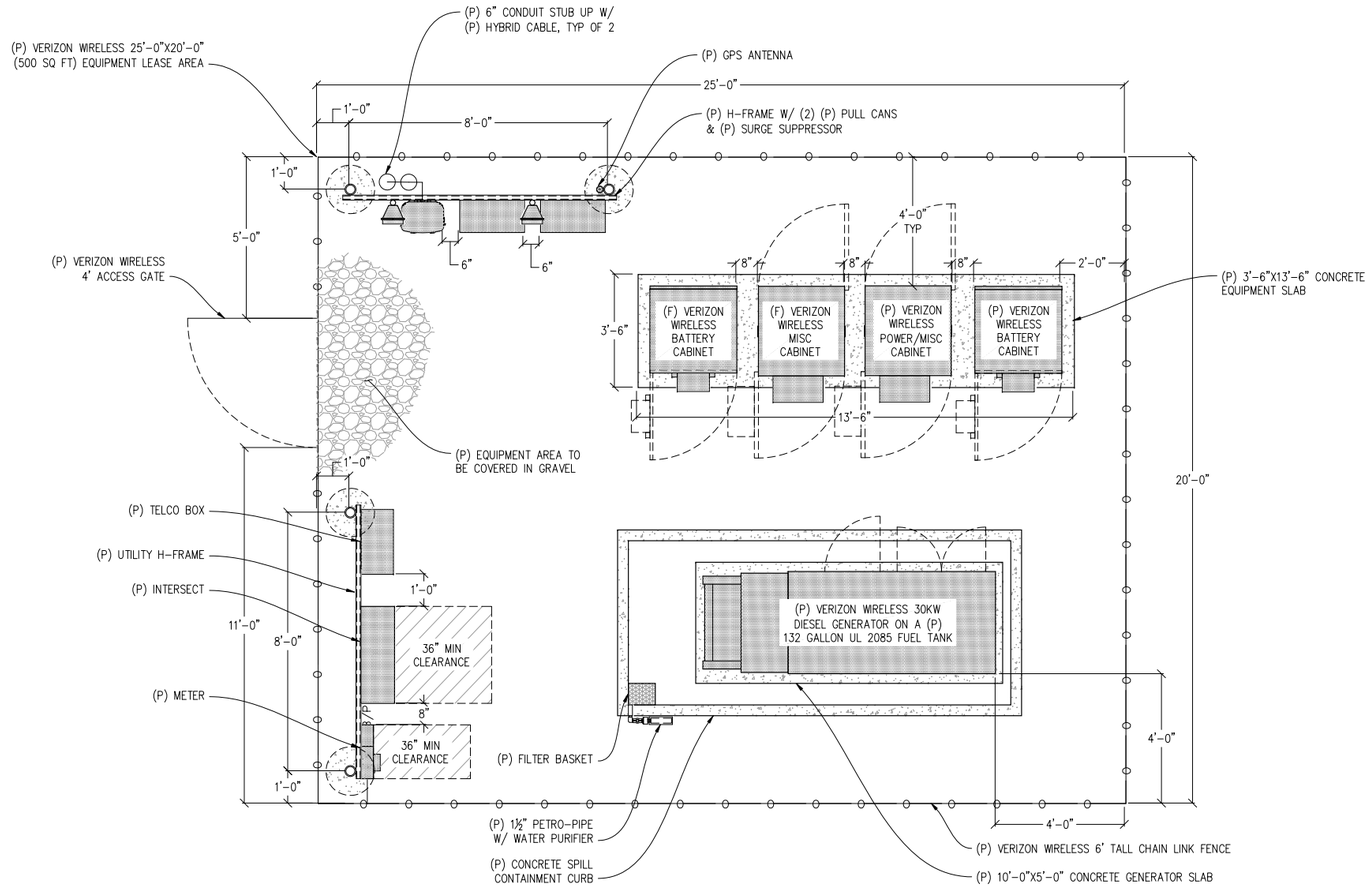
WEIGHT: 500 LBS



3 30KW GENERATOR DETAIL

3/8"=1'-0"

MAX WEIGHT: 3,230 LBS



EQUIPMENT PLAN

½"=1'-0"

0 6" 1' 2' 3' 5' 7' 10'

BERKELEY HILLS

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BERKELEY, CA 94708

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CHECKED BY: J. GRAY

APPROVED BY: –

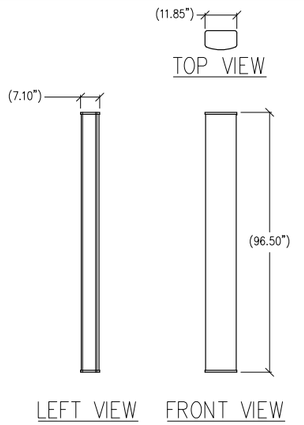
DATE: 03/13/18

SHEET TITLE:

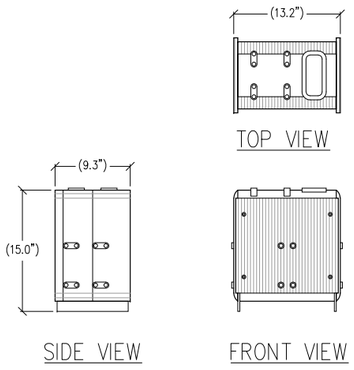
EQUIPMENT PLAN & DETAILS

SHEET NUMBER:

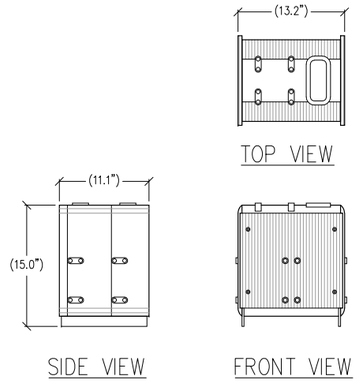
A-3



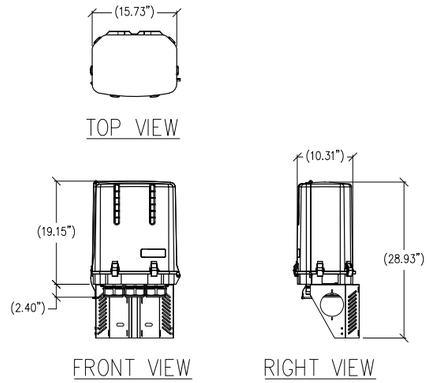
1 ANTENNA DETAIL
½"=1'-0" MAX WEIGHT: 49.6 LBS



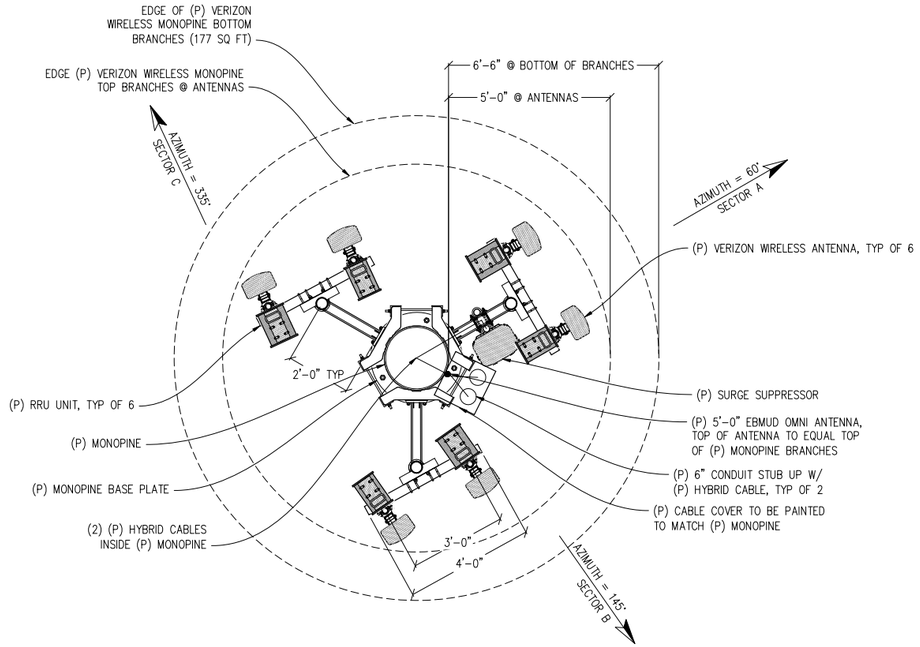
2 RRU DETAIL
1½"=1'-0" MAX WEIGHT: 70 LBS



3 RRU DETAIL
1½"=1'-0" MAX WEIGHT: 75 LBS



4 SURGE PROTECTION BOX
1"=1'-0" MAX WEIGHT: 32.0 LBS



TN ANTENNA PLAN
½"=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

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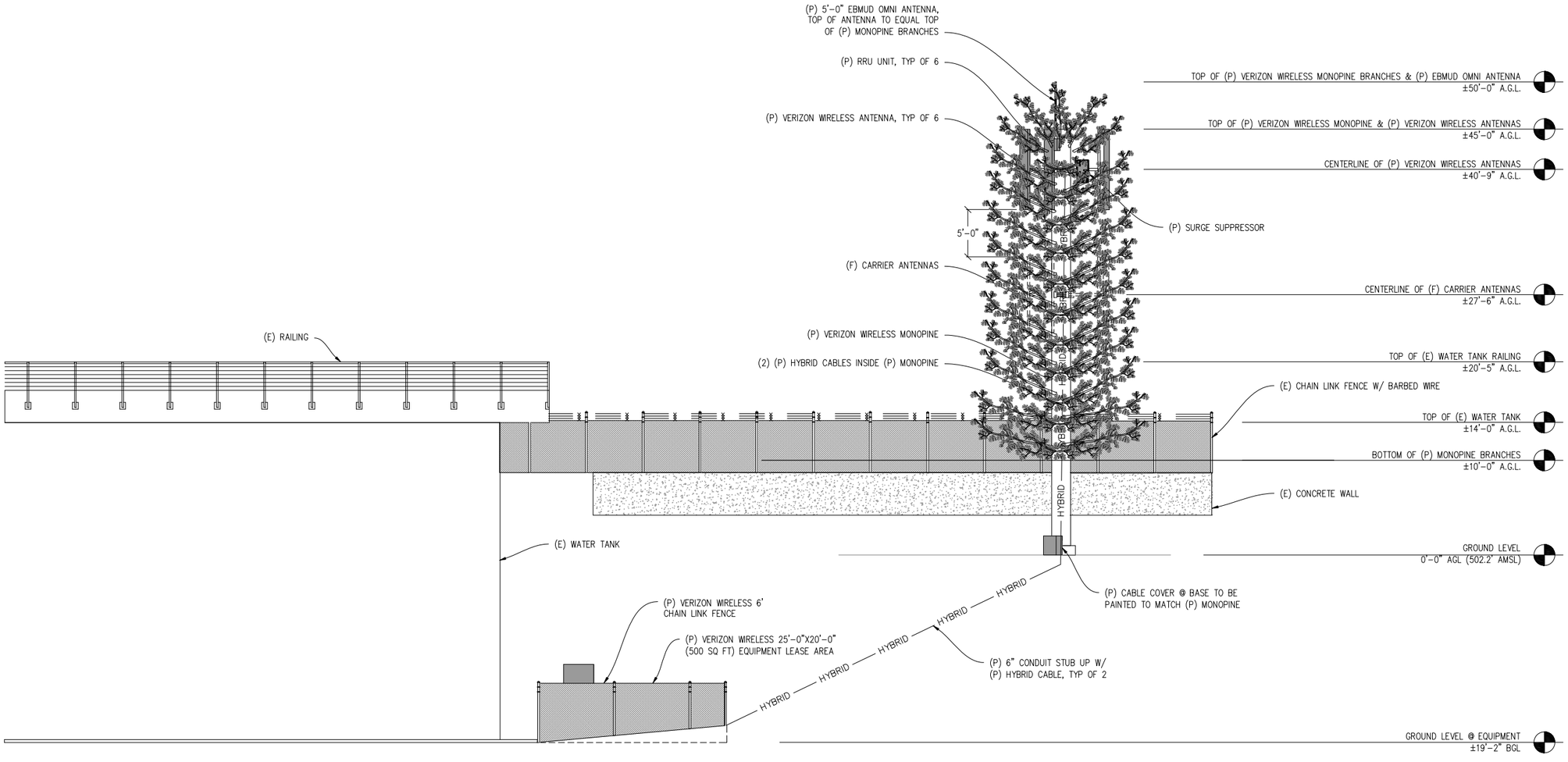
SHEET TITLE:

ANTENNA PLAN & DETAILS

SHEET NUMBER:

A-4



EAST 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

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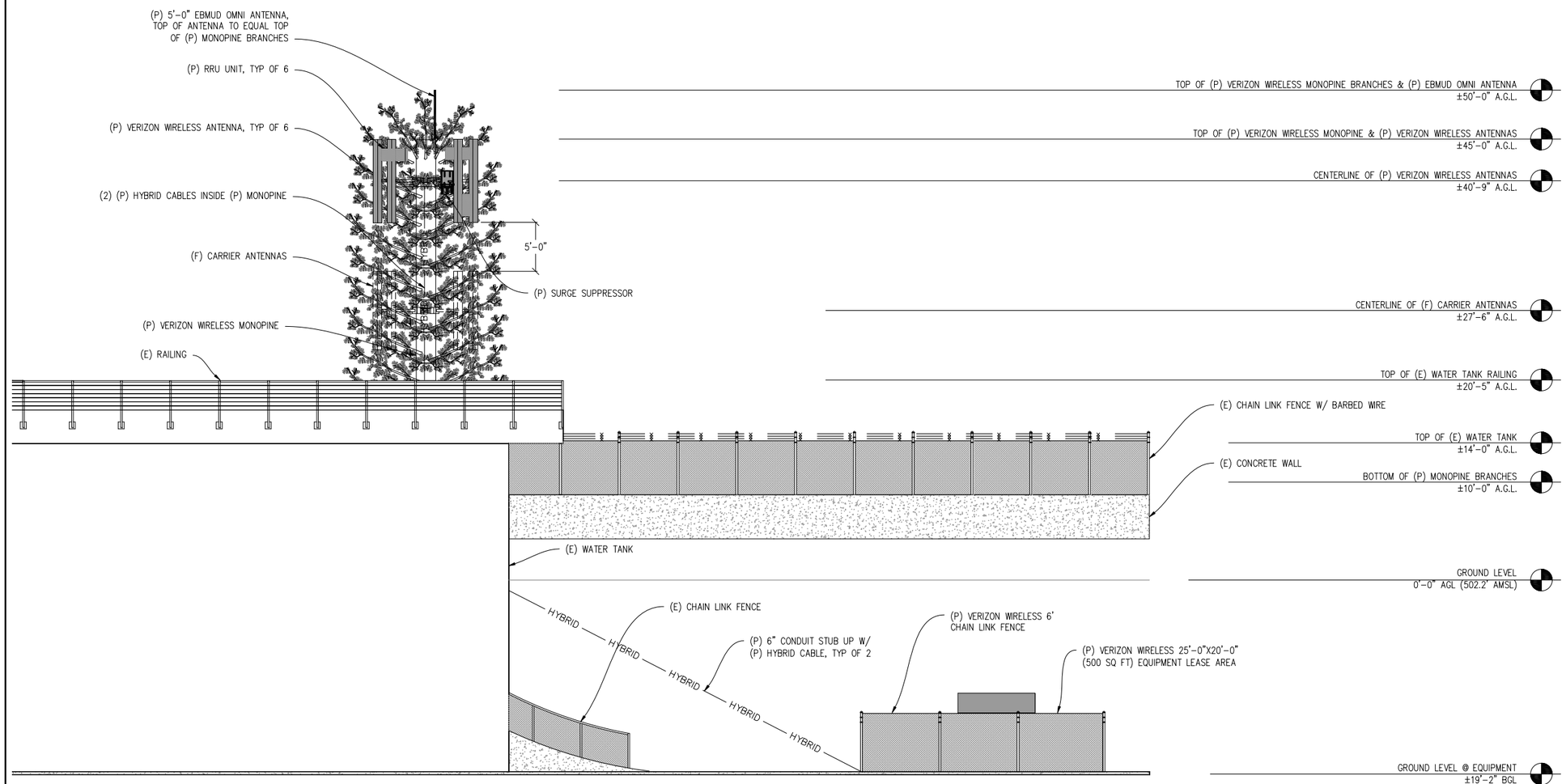
DRAWN BY:	D. GARCIA
CHECKED BY:	J. GRAY
APPROVED BY:	–
DATE:	03/13/18

SHEET TITLE:

ELEVATION

SHEET NUMBER:

A-5



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

BERKELEY HILLS

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SHEET TITLE:

ELEVATION

SHEET NUMBER:

A-6

ATTACHMENT 1, EXHIBIT C

verizon

Berkeley Hills Site # 237566

Aerial Map

EBMUD Berryman Reservoir
Berkeley, CA

11/6/18

Applied Imagination 510 914-0500

verizon

Berkeley Hills Site # 237566

EBMUD Berryman Reservoir
Berkeley, CA

11/6/18

Looking Northeast from Codornices Park Trail

View #1

Applied Imagination 510 914-0500

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Berkeley Hills Site # 237566

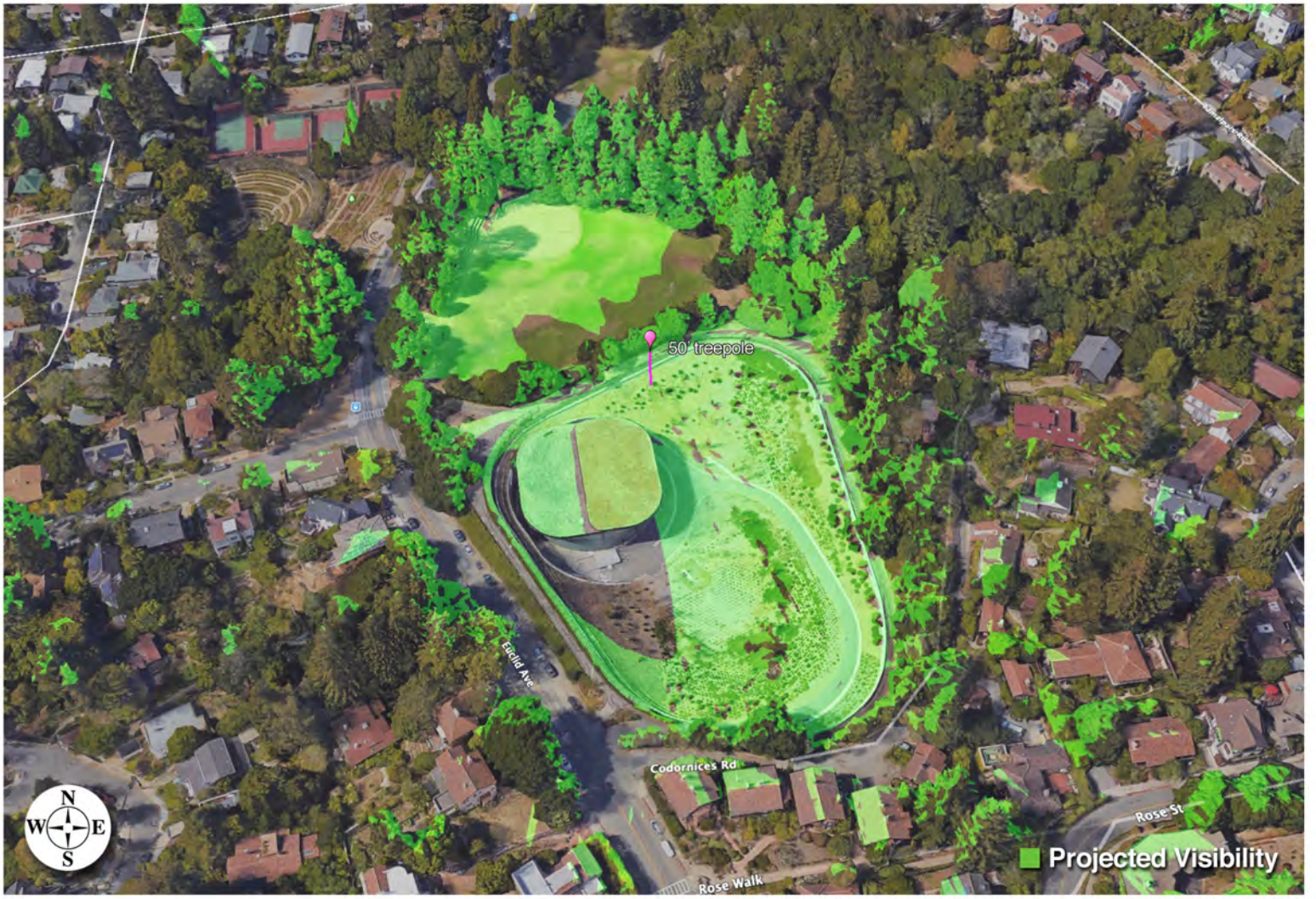
EBMUD Berryman Reservoir
Berkeley, CA

11/6/18

Looking Northeast from Euclid Ave.

View #2

Applied Imagination 510 914-0500



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

verizon

Berkeley Hills Site # 237566

EBMUD Berryman Reservoir
Berkeley, CA

11/6/18

Viewshed Map

Applied Imagination 510 914-0500

verizon

Berkeley Hills Site # 237566

EBMUD Berryman Reservoir
Berkeley, CA

2/22/19

Looking Northeast from Codornices Park Trail

View #1

Applied Imagination 510 914-0500

verizon

Berkeley Hills Site # 237566

EBMUD Berryman Reservoir
Berkeley, CA

2/22/19

Looking Northeast from Codornices Park Trail

View #1

Applied Imagination 510 914-0500

verizon

Berkeley Hills Site # 237566

EBMUD Berryman Reservoir
Berkeley, CA

Looking Northeast from Codornices Park Trail

View #1

2/22/19

Applied Imagination 510 914-0500

verizon

Berkeley Hills Site # 237566

EBMUD Berryman Reservoir
Berkeley, CA

2/22/19

Looking Northeast from Codornices Park Trail

View #1

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2/22/19

Looking Northeast from Codornices Park Trail

View #1

Applied Imagination 510 914-0500

verizon

Berkeley Hills Site # 237566

EBMUD Berryman Reservoir
Berkeley, CA

2/22/19

Looking Northeast from Euclid Ave.

View #2

Applied Imagination 510 914-0500

verizon

Berkeley Hills Site # 237566

EBMUD Berryman Reservoir
Berkeley, CA

2/22/19

Looking Northeast from Euclid Ave.

View #2

Applied Imagination 510 914-0500

verizon

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2/22/19

Looking Northeast from Euclid Ave.

View #2

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2/22/19

Looking Northeast from Euclid Ave.

View #2

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verizon

Berkeley Hills Site # 237566

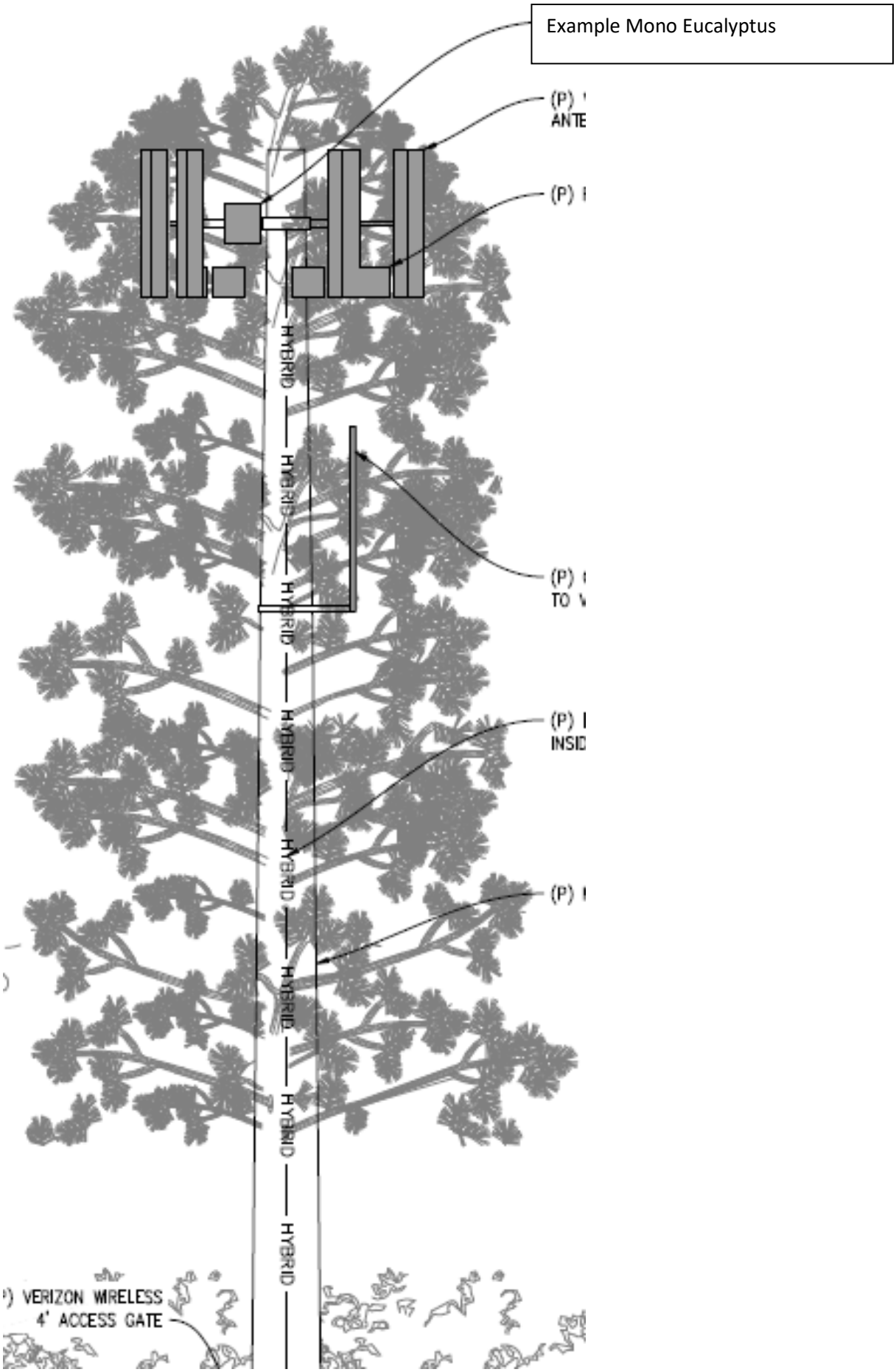
EBMUD Berryman Reservoir
Berkeley, CA

2/22/19

Looking Northeast from Euclid Ave.

View #2

Applied Imagination 510 914-0500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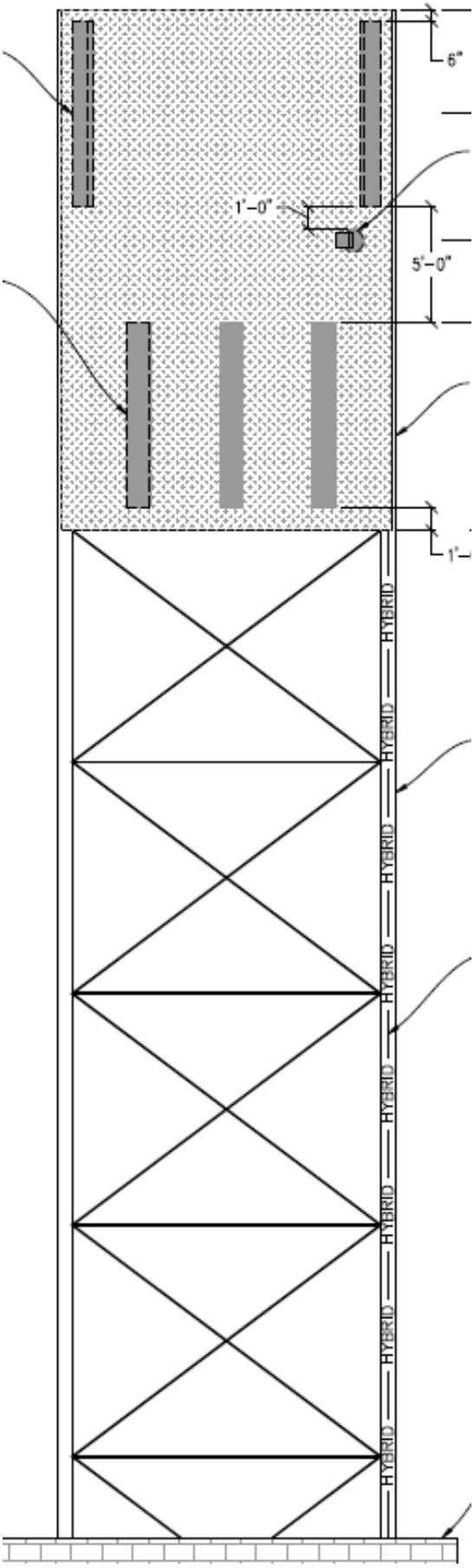
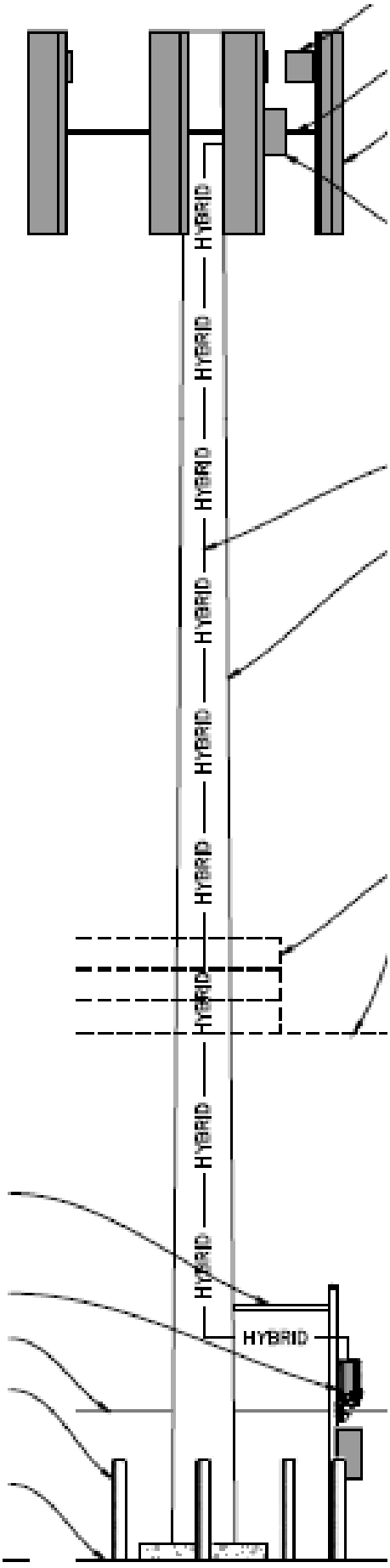


Example four legged tower with FRP screen panels at the top.



Standard Monopole

ATTACHMENT 2

ZONING ADJUSTMENTS BOARD

STAFF REPORT

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").

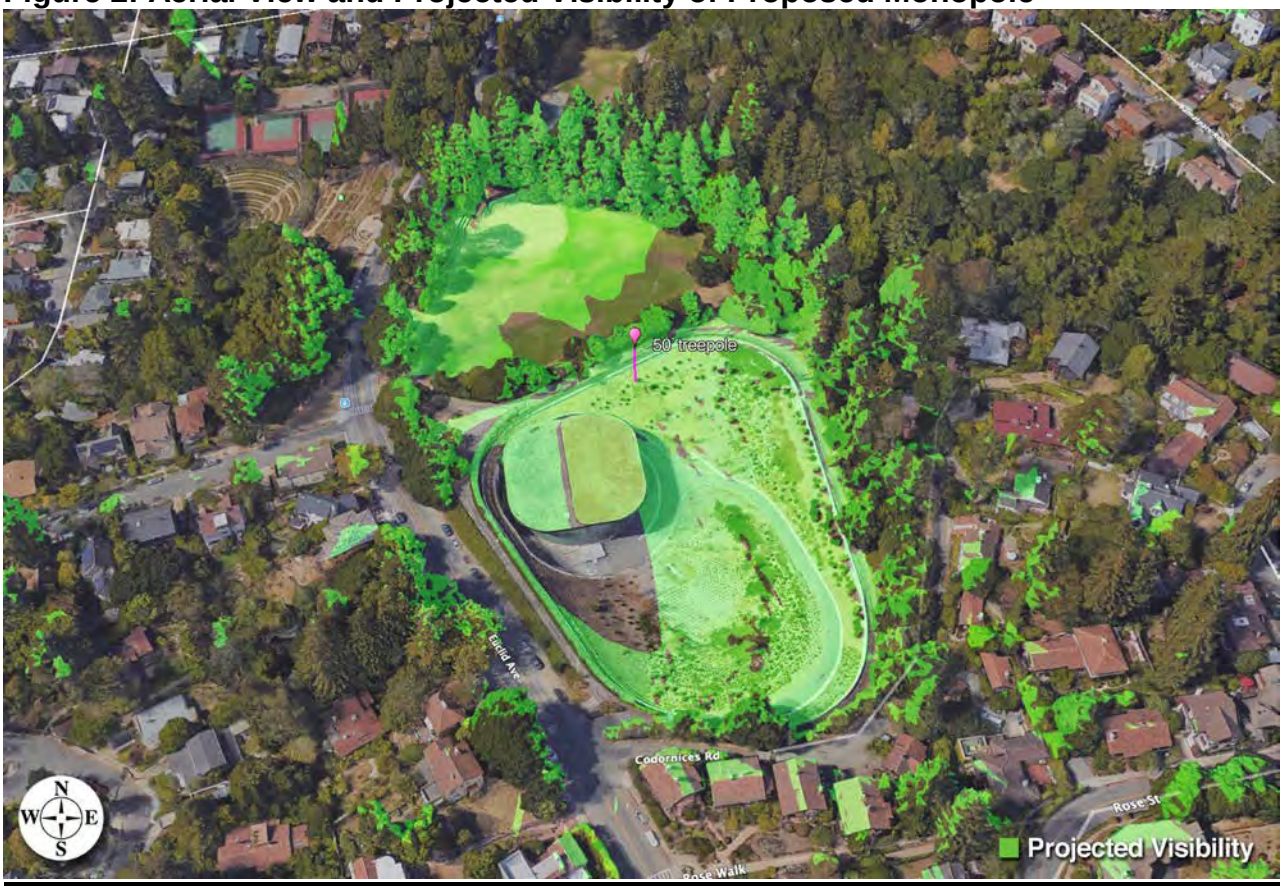
D. Parties Involved:

- 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

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
Necessity. 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	Yes	A peer review confirmed that the applicant's statement of project necessity complied with applicable FCC standards.
RF exposure. Compliance with FCC RF exposure limits shall be demonstrated and peer reviewed. Per BMC Sections 23C.17.040.F.1	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.
Noise. 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	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.
Provider compliance certification. 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	Yes	Verizon Wireless has provided the requisite annual compliance report for 2019. See Attachment 6.
Height. Project is within the applicable height limits. Per BMC Sections 23C.17.060.D, 23D.16.070, 23E.96.070, and 23D.04.020	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.

Design. Project is designed to minimize potential visual impacts per BMC Section 23C.17.070	Yes	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.

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 looks 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,

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: Layal Nawfal, lnawfal@cityofberkeley.info, (510) 981-7424

ATTACHMENT 3

MACKENZIE & ALBRITTON LLP
155 SANSOME STREET, SUITE 800
SAN FRANCISCO, CALIFORNIA 94104

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

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.

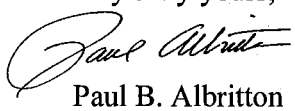
Lastly, the ZAB claimed that Verizon Wireless did not demonstrate that the Proposed Facility is designed to the minimum height and width required, or that a higher facility would facilitate other objectives per Code Section 23C.17.070(C)(3). Verizon Wireless seeks an administrative use permit for height greater than allowed in the R-1H 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.

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 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,



Paul B. Albritton

ATTACHMENT 4

MACKENZIE & ALBRITTON LLP
155 SANSOME STREET, SUITE 800
SAN FRANCISCO, CALIFORNIA 94104

TELEPHONE 415/ 288-4000
FACSIMILE 415/ 288-4010

July 23, 2019

VIA EMAIL

Farimah Brown, Esq.
City Attorney
City of Berkeley
2180 Milvia Street, Fourth Floor
Berkeley, California 94704

Re: Verizon Wireless Application ZP2018-0236
Telecommunications Facility, O Euclid Avenue (Berryman Reservoir)
FCC Shot Clock Extension Agreement: November 22, 2019

Dear Farimah:

We write to you on behalf of our client GTE Mobilnet of California Limited Partnership d/b/a Verizon Wireless ("Verizon Wireless") with respect to the above-referenced application for a wireless telecommunications facility filed December 17, 2018 (the "Application"). Federal law requirements obligate the City of Berkeley (the "City") to take final action on the Application within a specified time period unless the time period for the City to take final action is extended by mutual consent. Verizon Wireless has appealed the denial of the Application by the Zoning Adjustments Board, and anticipates that a City Council appeal hearing will occur by November 22, 2019. When countersigned, this letter will confirm an agreement between Verizon Wireless and the City to extend the applicable time period for review of the Application under the federal Telecommunications Act to November 22, 2019 (the "Extension Date").

The federal Telecommunications Act requires that local governments act on wireless siting applications "within a reasonable period of time." *See* 47 U.S.C. § 332(c)(7)(B)(ii). In a 2009 declaratory ruling, the Federal Communications Commission established a legal presumption that a local government has violated this requirement if it takes longer than 90 days to act on an application to collocate a wireless facility, or 150 days to act on any other type of wireless facility application, plus the number of days it takes an applicant to respond to a timely notice of incomplete application. *See In Re: Petition for Declaratory Ruling to Clarify Provisions of Section 332(c)(7)(B) to Ensure Timely Siting Review, Etc.,* FCC 09-99 (FCC November 18, 2009) (the "Ruling").[1] The FCC recently codified the time period for action. 47 CFR § 1.6003(c). The Ruling

[1] The Ruling was upheld by the United States Supreme Court on May 20, 2013. *See City of Arlington v. Federal Communications Commission,* 569 U.S. 290 (2013).

further permits the period for review of an application to be extended by mutual consent. Ruling, ¶ 49; 47 C.F.R. § 1.6003(d).

In order to allow the City to act on the Application without either party risking the loss of important rights, the parties agree that the time period within which the City may act on the Application shall be extended through the Extension Date, and that no limitations period for any claim of unreasonable or unlawful delay in processing the Application shall commence to run before said date.

If you agree, this letter agreement may be executed in counterparts, and scanned or facsimile signatures shall be deemed equivalent to original signatures. I will appreciate your returning a countersigned copy to me at your convenience.

Sincerely,

Paul B. Albritton

cc: Layal Nawfal

ACCEPTED AND AGREED TO:

City of Berkeley

By: _____

Printed name: Christopher D. Jensen

Title: Deputy City Attorney

City Clerk Department

October 8, 2019

Paul Albritton
Mackenzie & Albritton LLP
155 Sansome St, Suite 800
San Francisco, CA 94104

RE: 0 Euclid Avenue - Berryman Reservoir – Appeal ZAB Decision Use Permit #ZP2018-0236

Dear Mr. Albritton:

At the request of the applicant for this project, the public hearing for 0 Euclid Avenue - Berryman Reservoir – Appeal ZAB Decision Use Permit #ZP2018-0236 will not occur at the October 29, 2019 City Council meeting.

Once a new date has been selected, all parties will be notified.

If you have any additional questions regarding this matter, please do not hesitate to contact me at (510) 981-6908.

Sincerely,

Mark Numainville
City Clerk

cc: Timothy Burroughs, Director of Planning
Steven Buckley, Land Use Planning Manager
Layal Nawfal, Staff Planner
Farimah Brown, City Attorney
David Haddock, Ridge Communications Inc. for Verizon Wireless (Applicant)
East Bay Municipal Utility District, Attn: Rob Korn (Owner)
Christian Raisner

NOTICE CONCERNING YOUR LEGAL RIGHTS: If you object to a decision by the City Council to approve or deny an appeal, the following requirements and restrictions apply: 1) Pursuant to Code of Civil Procedure Section 1094.6 and Government Code Section 65009(c)(1)(E), no lawsuit challenging a City decision to deny or approve a Zoning Adjustments Board decision may be filed and served on the City more than 90 days after the date the Notice of Decision of the action of the City Council is mailed. Any lawsuit not filed within that 90-day period will be barred. 2) Pursuant to Government Code Section 66020(d)(1), 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. 3) In any lawsuit that may be filed against a City Council decision to approve or deny a Zoning Adjustments Board decision, the issues and evidence will be limited to those raised by you or someone else, orally or in writing, at a public hearing or prior to the close of the last public hearing on the project.

MACKENZIE & ALBRITTON LLP
155 SANSOME STREET, SUITE 800
SAN FRANCISCO, CALIFORNIA 94104

TELEPHONE 415/ 288-4000
FACSIMILE 415/ 288-4010

November 11, 2019

VIA EMAIL

Farimah Brown, Esq.
City Attorney
City of Berkeley
2180 Milvia Street, Fourth Floor
Berkeley, California 94704

Re: Verizon Wireless Application ZP2018-0236
Telecommunications Facility, O Euclid Avenue (Berryman Reservoir)
FCC Shot Clock Extension Agreement: March 31, 2020

Dear Farimah:

In a letter agreement effective July 23, 2019 (the "Tolling Agreement"), Verizon Wireless and the City of Berkeley (the "City") agreed to extend the time period for review under the federal Telecommunications Act for the above-referenced application through November 22, 2019 (the "Extension Date"). This letter, when countersigned, will confirm that Verizon Wireless and the City have agreed to further extend the time for the City to act on the application, and that the Tolling Agreement is hereby amended by changing the Extension Date to March 31, 2020. Except as expressly modified herein, the Tolling Agreement remains in full force and effect without modification.

This amendment to the Tolling Agreement may be executed in counterparts and facsimile, each of which shall be deemed an original.

Sincerely,

Paul B. Albritton

cc: Christopher Jensen, Esq.
Layal Nawfal

ACCEPTED AND AGREED TO:

City of Berkelev

By: _____

Printed name: Christopher D. Jensen

Title: Assistant City Attorney

MACKENZIE & ALBRITTON LLP
155 SANSOME STREET, SUITE 800
SAN FRANCISCO, CALIFORNIA 94104

TELEPHONE 415/ 288-4000
FACSIMILE 415/ 288-4010

February 19, 2020

VIA EMAIL

Farimah Brown, Esq.
City Attorney
City of Berkeley
2180 Milvia Street, Fourth Floor
Berkeley, California 94704

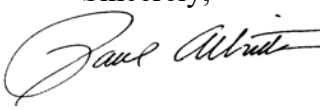
Re: Verizon Wireless Application ZP2018-0236
Telecommunications Facility, O Euclid Avenue (Berryman Reservoir)
FCC Shot Clock Extension Agreement: April 30, 2020

Dear Farimah:

In a letter agreement effective July 23, 2019 and amended November 11, 2019 (the "Tolling Agreement"), Verizon Wireless and the City of Berkeley (the "City") agreed to extend the time period for review under the federal Telecommunications Act for the above-referenced application through March 31, 2020 (the "Extension Date"). This letter, when countersigned, will confirm that Verizon Wireless and the City have agreed to further extend the time for the City to act on the application, and that the Tolling Agreement is hereby amended by changing the Extension Date to April 30, 2020. Except as expressly modified herein, the Tolling Agreement remains in full force and effect without modification.

This amendment to the Tolling Agreement may be executed in counterparts and facsimile, each of which shall be deemed an original.

Sincerely,



Paul B. Albritton

cc: Christopher Jensen, Esq.
Layal Nawfal

ACCEPTED AND AGREED TO:

City of Berkeley

By: _____

Printed name: Christopher D. Jensen

Title: Acting City Attorney

MACKENZIE & ALBRITTON LLP
155 SANSOME STREET, SUITE 800
SAN FRANCISCO, CALIFORNIA 94104

TELEPHONE 415/ 288-4000
FACSIMILE 415/ 288-4010

May 13, 2020

VIA EMAIL

Farimah Brown, Esq.
City Attorney
City of Berkeley
2180 Milvia Street, Fourth Floor
Berkeley, California 94704

Re: Verizon Wireless Application ZP2018-0236
Telecommunications Facility, O Euclid Avenue (Berryman Reservoir)
FCC Shot Clock Extension Agreement: July 10, 2020

Dear Farimah:

In a letter agreement effective July 23, 2019 and amended November 11, 2019 and February 19, 2020 (the "Tolling Agreement"), Verizon Wireless and the City of Berkeley (the "City") agreed to extend the time period for review under the federal Telecommunications Act for the above-referenced application through June 30, 2020 (the "Extension Date"). This letter, when countersigned, will confirm that Verizon Wireless and the City have agreed to further extend the time for the City to act on the application, and that the Tolling Agreement is hereby amended by changing the Extension Date to July 10, 2020. Except as expressly modified herein, the Tolling Agreement remains in full force and effect without modification.

This amendment to the Tolling Agreement may be executed in counterparts and facsimile, each of which shall be deemed an original.

Sincerely,

Paul B. Albritton

cc: Christopher Jensen, Esq.
Layal Nawfal

ACCEPTED AND AGREED TO:

City of Berkeley

By: _____

Printed name: Christopher D. Jensen

Title: Assistant City Attorney

ATTACHMENT 5A

Alternatives Analysis

Berkeley Hills

0 Euclid Avenue, City of Berkeley

March 5, 2020

Summary of Site Evaluations
Conducted by Ridge Communications, Inc.
Compiled by Mackenzie & Albritton LLP

TABLE OF CONTENTS

I. Executive Summary

Verizon Wireless has a significant gap in service in the north Berkeley hills residential neighborhoods. Based on a review of 10 alternatives as set forth in the following analysis, Verizon Wireless believes that placement of a new wireless tower disguised as a pine tree (the "Proposed Facility") constitutes the least intrusive feasible alternative to provide service to the identified gap in network service based on the values expressed in the Berkeley Municipal Code (the "Code").

II. Significant Gap

There is a significant gap in Verizon Wireless network service in the north Berkeley hills. Residential areas lack reliable LTE in-building and in-vehicle service coverage, and there are pockets lacking any reliable service. The coverage gap is particularly pronounced for the high-band PCS and AWS frequency spectrum bands that Verizon Wireless uses to provide over 70 percent of its LTE service throughout Berkeley. Further, a distant Verizon Wireless facility serving much of the area has reached capacity exhaustion. This compromises communications for residents and visitors as well as emergency service personnel. (Collectively, the "Significant Gap") The Significant Gap is described in detail in the *Statement of Verizon Wireless Radio Frequency Design Engineer Amr Kharaba* (the "RF Engineer's Statement"). To remedy the Significant Gap, Verizon Wireless must place new infrastructure to ensure reliable network service.

III. Methodology

Once a significant gap has been determined, Verizon Wireless seeks to identify a location and design that will provide reliable network service through the "least intrusive means" based upon the values expressed by local regulations. In addition to seeking the least intrusive alternative, sites proposed by Verizon Wireless must be feasible. Feasibility means that a site has suitable radio frequency propagation, proximity to end users, available equipment space, access, topography, slope and other critical factors such as a willing landlord. Wherever feasible, Verizon Wireless seeks to use existing infrastructure to minimize visual impacts.

The Berkeley Hills present a challenge for providing wireless service. In order to control radio signal propagation for network design, antennas generally face east into the Berkeley Hills. West-facing antenna sectors are avoided to prevent signal propagation extending beyond desired coverage areas. Further, west-facing antennas are problematic due to the signal-skipping properties of water on the bay that can result in interference as far away as Marin County and San Francisco.

Private Property – Zoning Code

Under the zoning code, applicants for facilities on private property must submit an alternatives analysis demonstrating that a new facility is the least intrusive means to provide service with the least aesthetic impact, with an explanation of why any preferred facility types are not feasible. Code §§ 23C.17.040(C)(2), 23C.17.040(E)(4).

Microcell networks on private property may be approved in any zoning district with an administrative permit, and all other new wireless facilities require a use permit. Code § 23C.17.100(A). The preferred type of wireless facility is a microcell network, followed by façade-mounted facilities, roof-mounted facilities, ground-mounted facilities and freestanding towers. Code §§ 23C.17.070(A), 23C.17.030(D).

Wireless facilities must be designed to minimize visibility through screening and camouflage to the greatest extent feasible with respect to technological requirements, and designed to blend with surrounding buildings or the natural setting. Code § 23C.17.070(B). One finding requires that facilities not be readily visible, or that it is infeasible to incorporate additional measures to achieve this. Code § 23C.17.100(B)(2). Facilities must not impair significant or sensitive view corridors. Code § 23C.17.070(C). A facility may be sited at a location visible from a public park if it meets the wireless facility findings. Code §§ 23C.17.050(B), 23C.17.100.

A new freestanding wireless facility should not be located within 1,000 feet of another freestanding facility unless it is stealthed to the extent feasible and co-location or placement on a building are not feasible. Code § 23C.17.050(C).

Public Right-of-Way – Streets and Sidewalks Code

The City regulates wireless facilities in the right-of-way under its streets and sidewalks code, not the Zoning Code which applies to private property. Right-of-way facilities require a public right-of-way permit issued by the Public Works Director. Code §§ 16.10.030, 16.10.045.

Right-of-way location and design standards are set forth in the City's *Guidelines for Projects Requiring Telecommunications Encroachment/Excavation Permits* (the "ROW Guidelines"). Preferred locations are commercial and manufacturing districts, followed by neighborhood commercial districts, then residential districts, with least-favored locations including sites within 100 feet of City parks, landmarks or certain historic resources. ROW Guidelines § II(A).

Right-of-way facilities must use the smallest, least visible antennas and equipment that can meet service objectives. Equipment must be no larger or more obtrusive and readily visible than existing facilities on a pole. ROW Guidelines §§ III(C), III(E)(1). Specific size constraints limit associated equipment to one enclosure on the subject pole up to approximately 12 inches wide, 10 inches deep and four cubic feet, and another such enclosure on a nearby pole, plus an electric meter and cut-off switch. ROW Guidelines § III(E)(4).

The map below is an excerpt of the City's *Wireless Telecom Facilities* map showing wireless facilities on private property in the northeast Berkeley area. The existing Verizon Wireless sites on this map are (1) Kensington Circle and (7) Shattuck North. There are no wireless facilities shown in the hilly area near the Proposed Facility.

Excerpt of City of Berkeley
Wireless Telecom Facilities Map 2015

IV. Analysis

Review of Microcell Network

Verizon Wireless investigated the possibility of placing microcells (also known as small cells) in the gap area that could be approved administratively by the Planning Department or Public Works Department. With respect to private property, the first preference for facility type under the zoning code is a microcell network. Given the R-1 zoning of the area, microcells on residential buildings would be required to serve the Significant Gap.

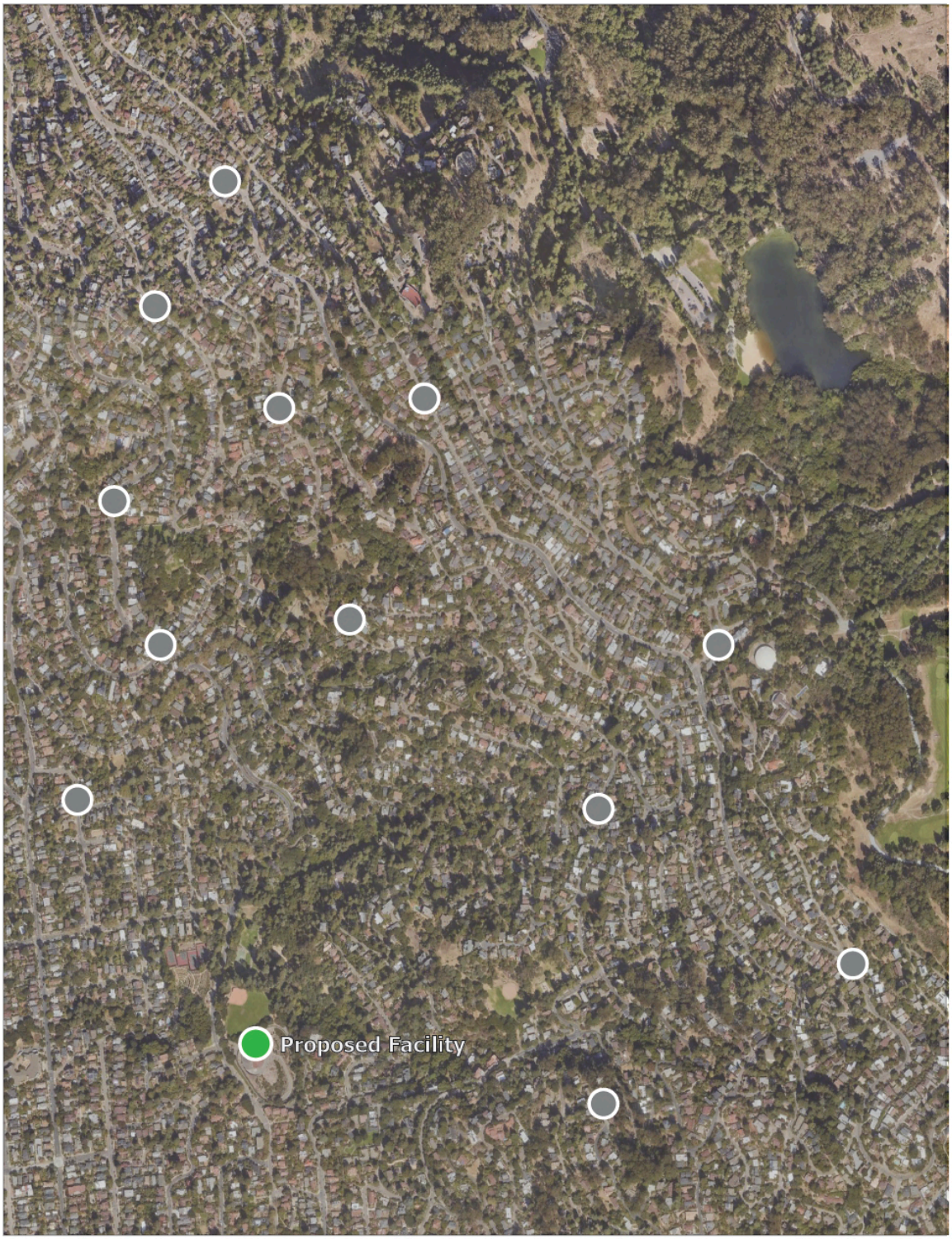
To avoid siting on residences, Verizon Wireless reviewed placement of microcells in the right-of-way. Though the ROW Guidelines prefer siting in commercial and manufacturing zones, residential zones are the only option in the gap area. Right-of-way facilities are discouraged within 100 feet of parks, and there are several in the area.

The ROW Guidelines place dimension constraints on right-of-way equipment that limit radio units to low-wattage models, resulting in facilities with a smaller coverage footprint. Low-power radios mean more microcells are required to serve an area, though utility poles generally offer advantageous height for antennas, somewhat improving coverage.

Low-power microcell facilities have a limited coverage radius of approximately 500 to 1,500 feet, and signal would be easily impeded by the substantial tree clutter and topographic obstructions in the gap area. Due to these factors, Verizon Wireless RF engineers determined that 12 microcell facilities would be required to serve the Significant Gap. For this solution, the 12 microcells would be placed north and east of the Proposed Facility location. A potential microcell network solution is shown in the following map.

Elevated on utility poles along streets, right-of-way microcells would be more readily visible than the Proposed Facility, which is disguised as a tree and placed away from street vantage points. Given the residential nature of the gap area, a number of right-of-way microcells would be located adjacent to residential properties, whereas the Proposed Facility is over 270 feet from the nearest residence. The close proximity of numerous right-of-way microcells to streets and residences would lead to a more intrusive deployment overall. Coverage limitations resulting from trees, building clutter and topography, as well as the prospect of more intrusive installations, make a microcell network a less feasible and potentially more intrusive alternative to the Proposed Facility.

Example Map of Network of 12 Microcells



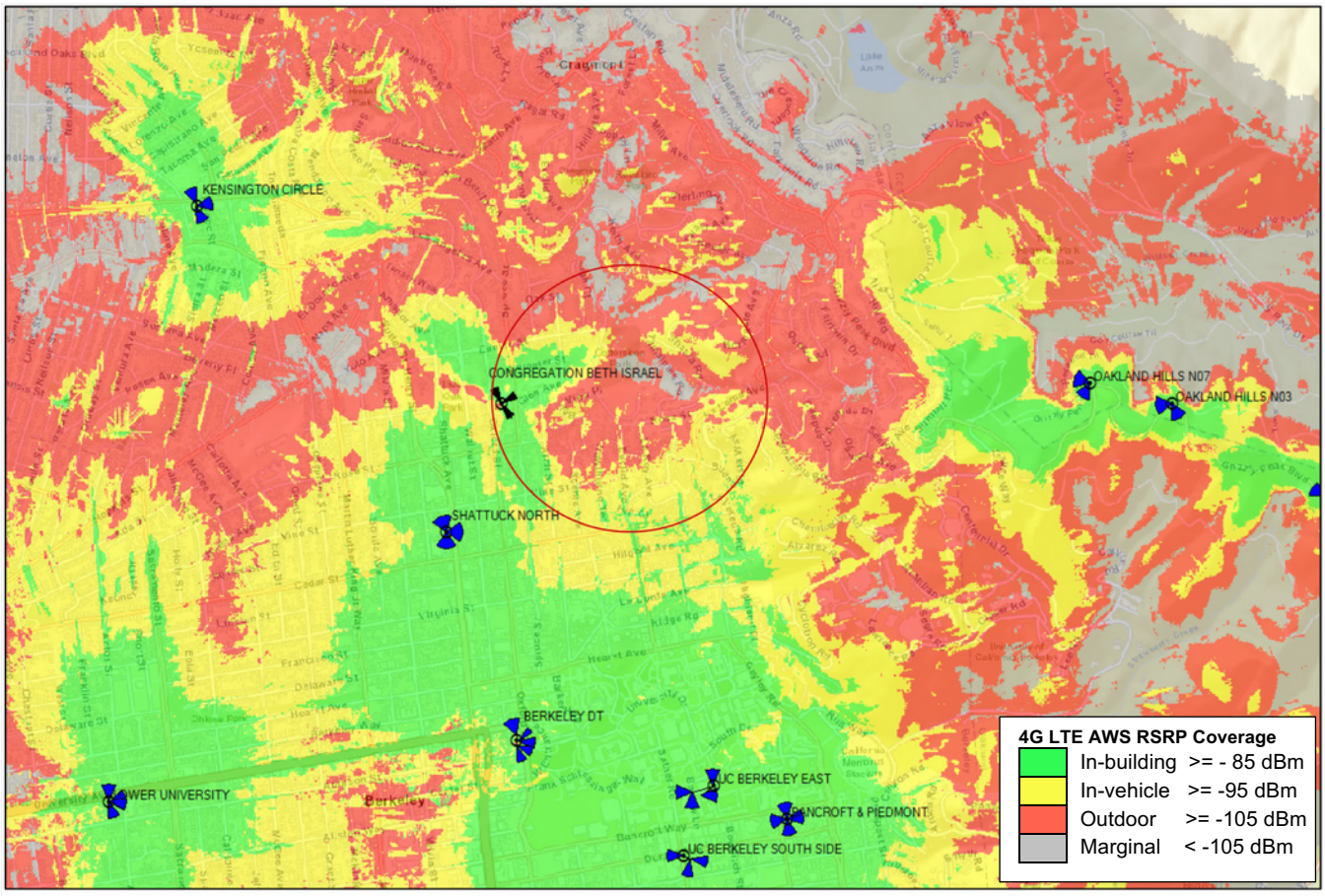
Façade- and Roof-Mounted Facilities

Verizon Wireless reviewed the vicinity of the gap for non-residential buildings that could support façade- or roof-mounted antennas, considering the following locations.

1. Congregation Beth Israel
Address: 1301 Oxford Street
Elevation: 320 Feet
Zoning: R-1 Residential

Verizon Wireless reviewed placement of antennas on this building 0.3 miles west of the Proposed Facility and 120 feet lower in elevation. Verizon Wireless RF engineers determined that a facility at this location cannot serve the Significant Gap. As shown in the following coverage map, a facility at this location of the same height as the Proposed Facility would provide coverage to only the western fringe of the gap area. Due to inability to serve the Significant Gap, this is not a feasible alternative to the Proposed Facility.

High-Band 4G LTE Coverage Provided by a Facility at Congregation Beth Israel



Coverage plot maps depict the anticipated level of signal, and therefore the projected coverage provided by a site at a given location. The areas in green reflect good coverage that meets or exceed thresholds to provide consistent and reliable network coverage in homes and in vehicles. The areas in yellow and red depict decreasing levels of coverage, respectively, with yellow areas generally representing reliable in-vehicle coverage only, and red areas depicting poor service areas with marginal coverage unsuitable for in-vehicle use. Gray depicts marginal service areas with unreliable service levels.

The circle surrounds the Proposed Facility location and its critical coverage area.

Many wireless facilities in this area of the East Bay do not include west-facing antenna sectors. This is because west-facing antennas would direct signal over the bay. As signal propagates well over water, it would become a source of interference for distant wireless facilities in San Francisco and/or Marin County. In these coverage maps, the antenna sectors for the Proposed Facility and the various alternatives are not directed west.

2. Oxford Elementary School
Address: 1301 Oxford Street
Elevation: 380 Feet
Zoning: R-1 Residential

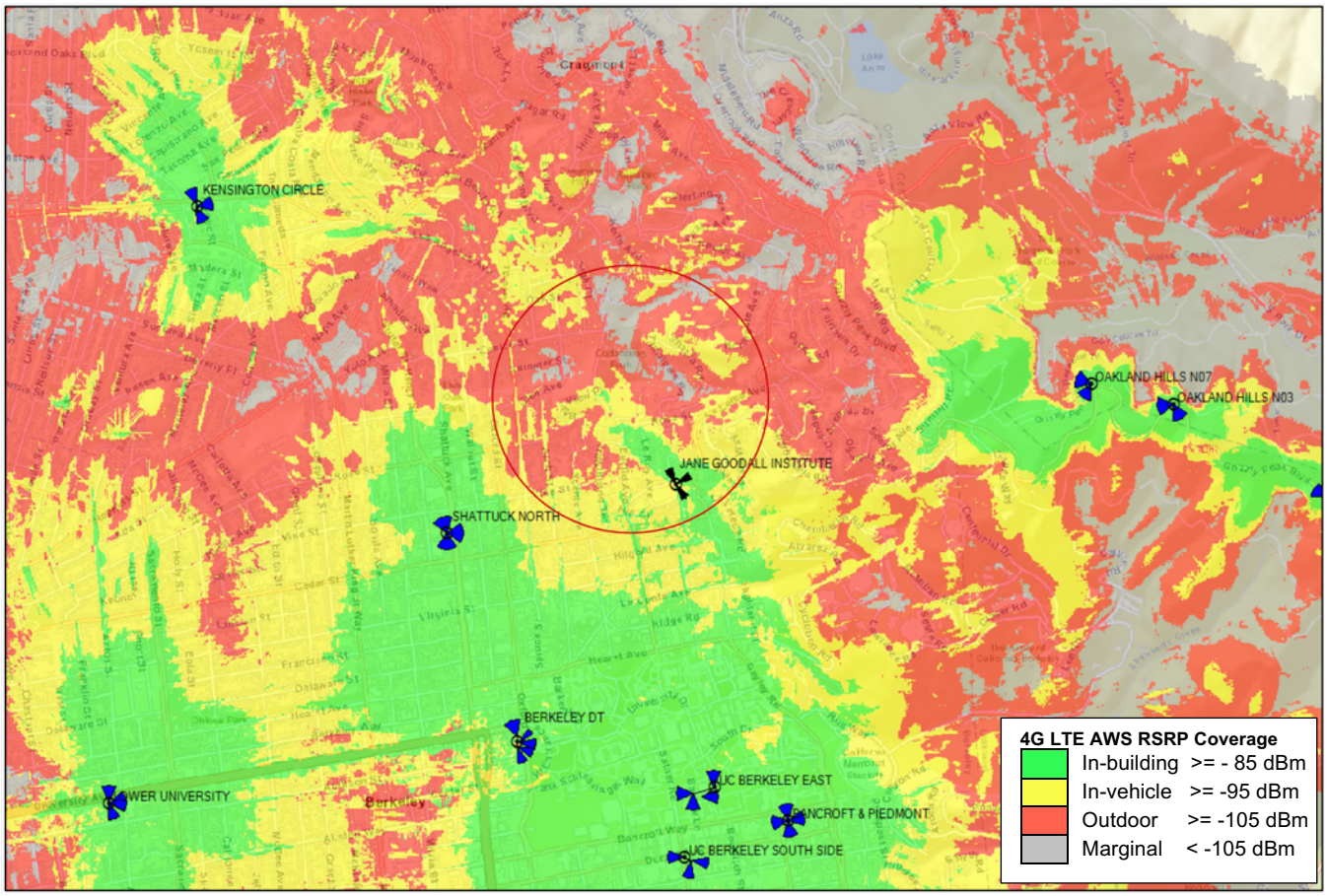
Verizon Wireless reviewed this school facility 0.4 miles northwest of the Proposed Facility and 120 feet lower in elevation. Verizon Wireless recently contacted the Berkeley Unified School District regarding placement of wireless facilities on its property, and the District responded that it was not interested. Due to lack of landlord interest, this is not a feasible alternative to the Proposed Facility.

3. Jane Goodall Institute

Address: 1581 Leroy Avenue
Elevation: 540 Feet
Zoning: R-1 Residential

Verizon Wireless reviewed this property 0.3 miles south of the Proposed Facility and 40 feet greater in elevation. Verizon Wireless RF engineers determined that a facility at this location cannot serve the Significant Gap. As shown in the following coverage map, a facility at this location of the same height as the Proposed Facility would provide coverage to only the southern fringe of the gap area. Due to inability to serve the Significant Gap, this is not a feasible alternative to the Proposed Facility.

High-Band LTE Coverage Provided by Facility at Jane Goodall Institute



Freestanding Tower Facilities

Lacking any non-residential buildings suitable for a façade- or roof-mounted facility, Verizon Wireless reviewed the gap area for non-residential properties with sufficient space for a new freestanding tower facility, identifying the following alternatives.

4. Proposed Facility – Berryman Reservoir
Address: 0 Euclid Avenue
Elevation: 500 Feet
Zoning: R-1 Residential

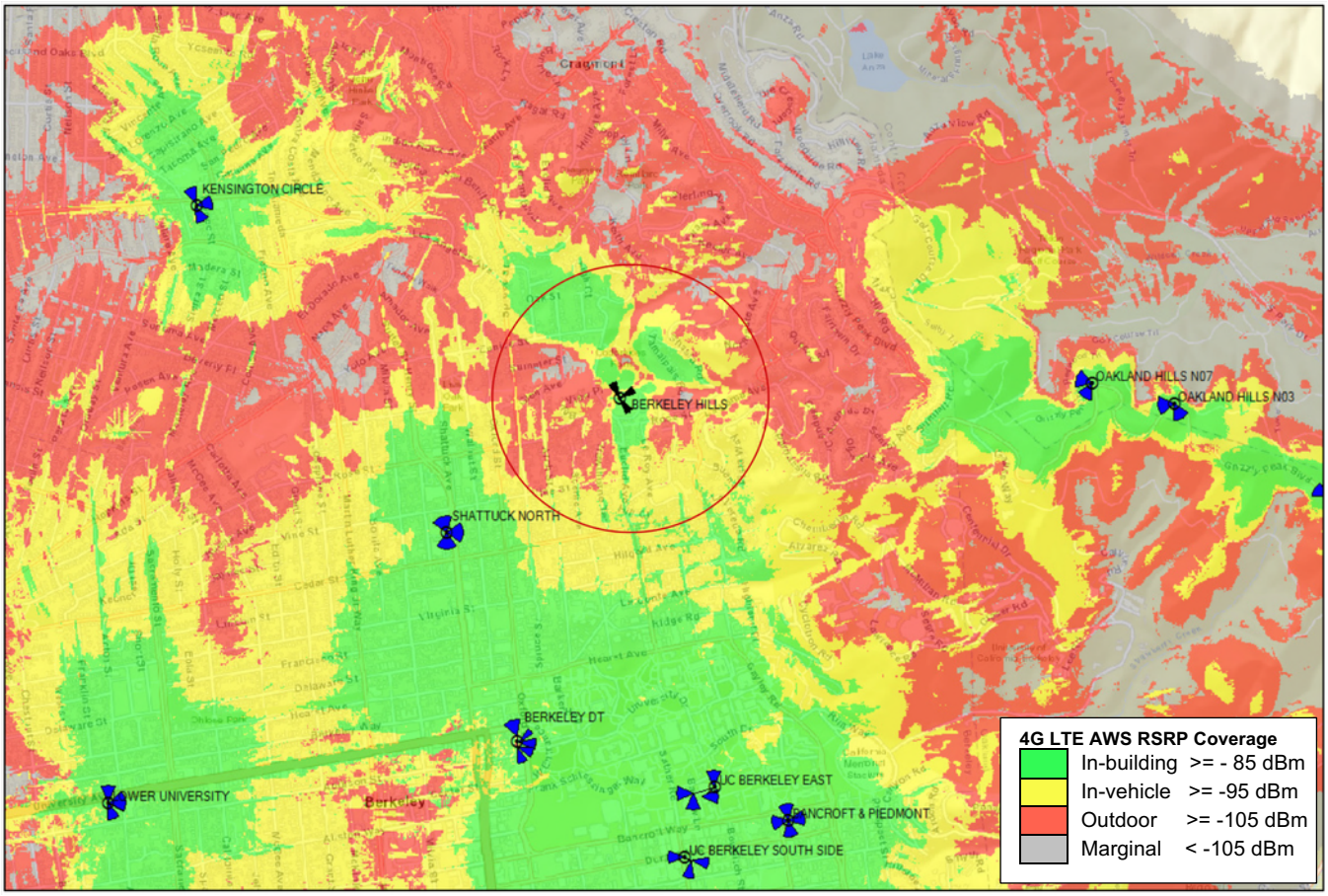
Verizon Wireless proposes to conceal its panel antennas on a 50-foot freestanding facility camouflaged as a pine tree, placed in an unused area of an East Bay Municipal Utilities District property. Antennas will be concealed within faux foliage and branches, and branches will extend beyond and above the antennas, providing a realistic tapered crown. Antennas will be covered with needle socks for further concealment. The treepole will be located near a row of established trees of similar height that provide screening as viewed from the park to the west, as well as a backdrop to allow the treepole to blend with its surroundings.

Near the treepole, a 500-square foot equipment area will contain radio cabinets and a diesel generator to provide continued service in case of emergencies. The equipment area will be surrounded by a six-foot chain link fence. Secure within the EBMUD compound, neither the treepole nor the equipment area will be accessible to the

public. Verizon Wireless also presented the City with alternative designs for an uncamouflaged monopole or a four-legged tower with antennas screened within square panels, with options for either design to be painted gray or green.

With antennas elevated to the required centerline of 40 feet 9 inches at this optimal location, the Proposed Facility will provide reliable Verizon Wireless service to the Significant Gap. As shown in the following propagation map, the Proposed Facility will provide new, reliable coverage in the north Berkeley hills. It is also placed at an optimal location to relieve demand on the existing Verizon Wireless facilities currently serving the gap area, including exhausted antenna sectors of the Lower University facility to the southwest that serve much of the gap. This will improve overall network performance in a greater area. An analysis comparing existing and proposed coverage is found in the RF Engineer's Statement. This is Verizon Wireless's preferred location and design for the Proposed Facility.

High-Band 4G LTE Coverage Provided by Proposed Facility



5. Codornices Park

Address: 1201 Euclid Avenue
Elevation: 500 Feet
Zoning: R-1 Residential

Verizon Wireless reviewed this City park located due north of the Proposed Facility at a similar elevation. The level areas of the park include a playing field north of the Proposed Facility, and a basketball court and playground further north. A new freestanding wireless facility and equipment area in these level areas would remove recreational areas from use. A facility on the slopes surrounding recreational areas would require substantial trenching and grading for placement of a tower foundation, equipment area and underground utility conduit, requiring tree removal if feasible at all. This would present environmental impacts to a park property, whereas the Proposed Facility is placed on a utility property where it would not disrupt public uses. Lastly, the Code discourages facilities visible from a public park. A facility within the park itself would be readily visible to park users. This cannot be considered a less intrusive alternative to the Proposed Facility.

6. Berkeley Rose Garden
Address: 1200 Euclid Avenue
Elevation: 420-480 Feet
Zoning: R-1 Residential

Berkeley Rose Garden

Storage Area

Verizon Wireless reviewed this public park across the street and 0.1 miles northwest of the Proposed Facility with a varying elevation. The only area of this park not in recreational use is a small storage area in the northwest corner behind the tennis courts, immediately adjacent to homes. This storage area is 50 feet lower in elevation than the Proposed Facility, requiring a much taller tower to elevate antennas to the height required serve the Significant Gap. A new freestanding wireless tower in the storage area would be within 60 feet of homes, blocking views of the park beyond, whereas the Proposed Facility is over 270 feet from the nearest home. The Code discourages facilities visible from a public park. A very tall facility within the Rose Garden park would be readily visible to park users. This cannot be considered a less intrusive alternative to the Proposed Facility.

7. Glendale-La Loma Park

Address: 1310 La Loma Avenue
Elevation: 780-840 Feet
Zoning: R-1 Residential

Verizon Wireless reviewed this City park located 0.3 miles east of the Proposed Facility with a varying elevation 280 to 340 feet greater. This terraced park is situated in a canyon that opens to the west. While the parking lot and playground are located at somewhat higher elevations on the east side of the park, they are flanked by ridges north and south that would block signal from antennas in those directions absent a very tall tower that would pose visual impacts to homes on the ridges.

The playing field at the west end of the park is at the mouth of the canyon, where a facility at the western edge above a slope could potentially serve the Significant Gap. However, a facility at this location would silhouette against the sky and block bay views from vantage points east in the park. Sloped areas surrounding the recreational areas would require substantial trenching and grading for placement of a tower foundation, equipment area and underground utility conduit, requiring tree removal if feasible at all. This would present environmental impacts to a park property, whereas the Proposed Facility is placed on an existing utility property where it would not disrupt public uses. Lastly, the Code discourages facilities visible from a public park. As noted, a tower facility at the western edge within this park would be readily visible to park users. This cannot be considered a less intrusive alternative to the Proposed Facility.

8. PG&E Ridge Substation

Address: 1313 Glendale Avenue
Elevation: 855 Feet
Zoning: R-1 Residential

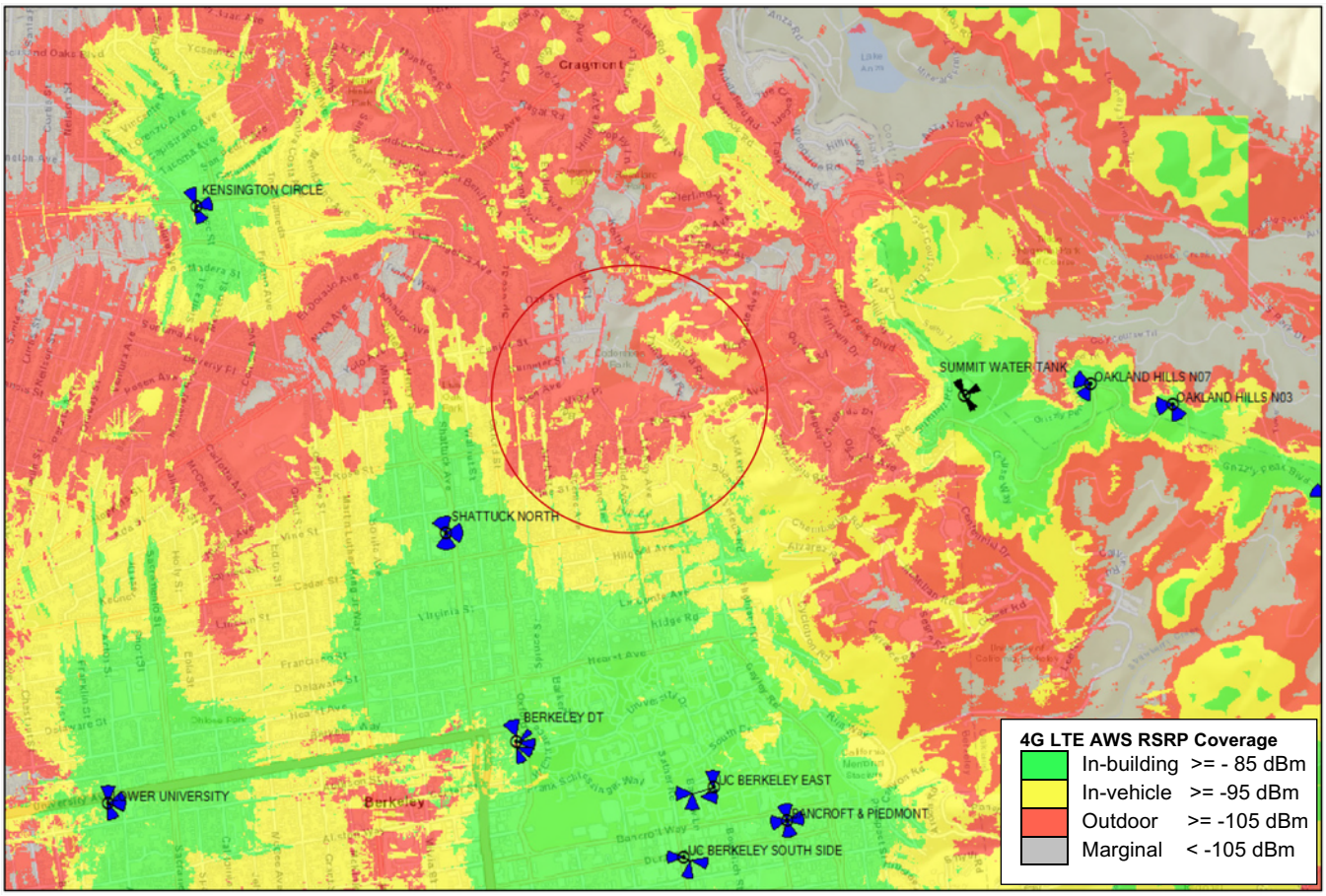
Verizon Wireless reviewed this utility property located 0.35 miles east of the Proposed Facility and 355 feet greater in elevation. A wireless facility placed on the one-story building could not serve the gap because ridges north and south would block signal; a tower facility would be required. The only area of the property potentially viable for placement of a new tower foundation and equipment area is the small parking lot, where a tower would be within 50 feet of homes. A new tower facility at this location would present substantial visual impact as viewed from nearby residences and the adjacent roadway. This cannot be considered a less intrusive alternative to the Proposed Facility.

9. Summit Reservoir

Address: Summit Road
Elevation: 1,340 Feet
Zoning: City of Oakland

Verizon Wireless reviewed this East Bay Municipal Utility District property located 0.9 miles east of the Proposed Facility and 840 feet greater in elevation. Verizon Wireless RF engineers determined that a facility at this location cannot serve the Significant Gap. As shown in the following coverage map, a facility at this location of the same height as the Proposed Facility would not provide any new coverage to the identified gap area. Due to inability to serve the Significant Gap, this is not a feasible alternative to the Proposed Facility.

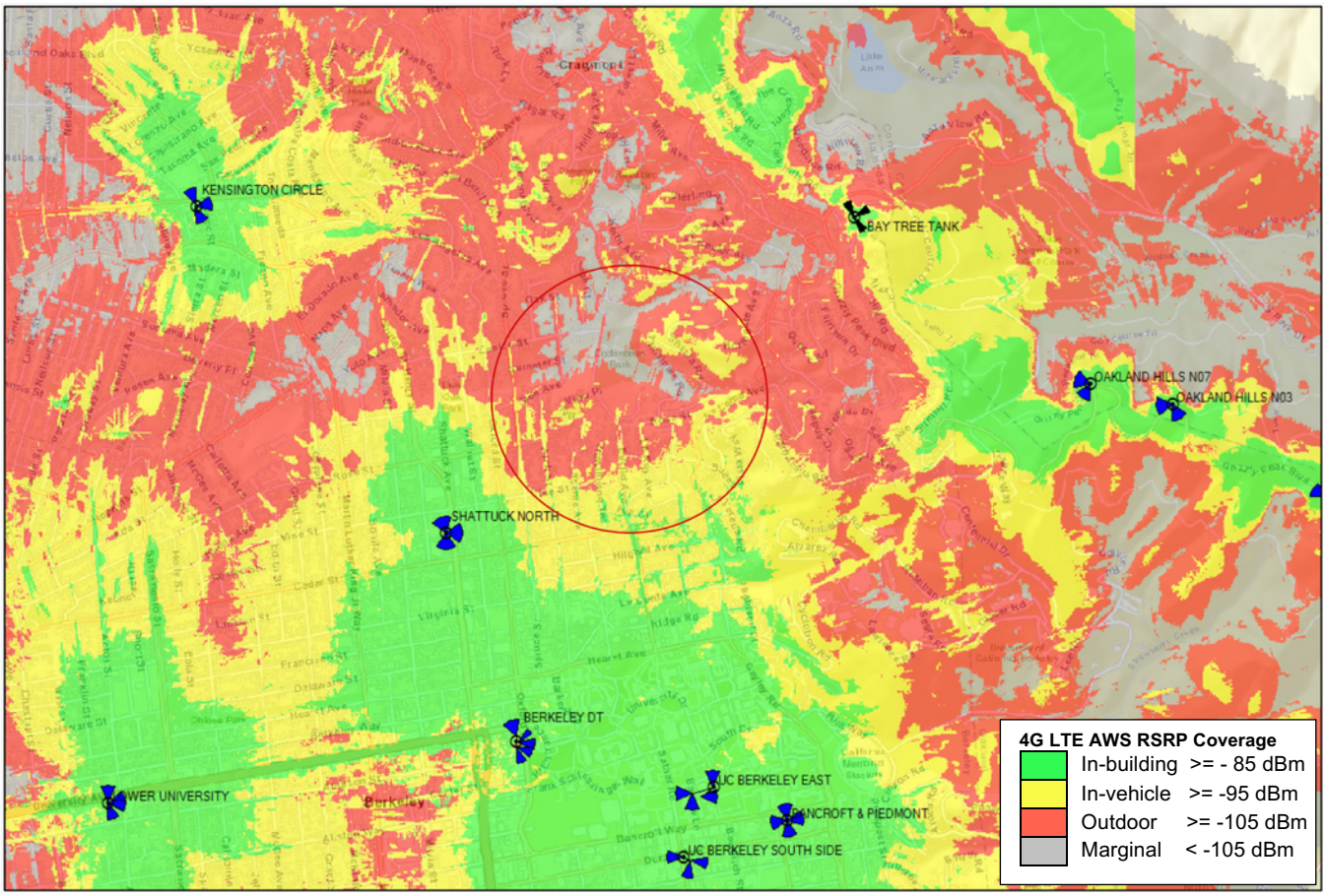
High-Band LTE Coverage Provided by Facility at Summit Reservoir



10. Bay Tree Reservoir
Address: Bay Tree Lane
Elevation: 1,150 Feet
Zoning: R-1 Residential

Verizon Wireless reviewed this East Bay Municipal Utility District property located 0.75 miles northeast of the Proposed Facility and 650 feet greater in elevation. Verizon Wireless RF engineers determined that a facility at this location cannot serve the Significant Gap. As shown in the following coverage map, a facility at this location of the same height as the Proposed Facility would not provide any new coverage to the identified gap area. Due to inability to serve the Significant Gap, this is not a feasible alternative to the Proposed Facility.

High-Band LTE Coverage Provided by Facility at Bay Tree Reservoir

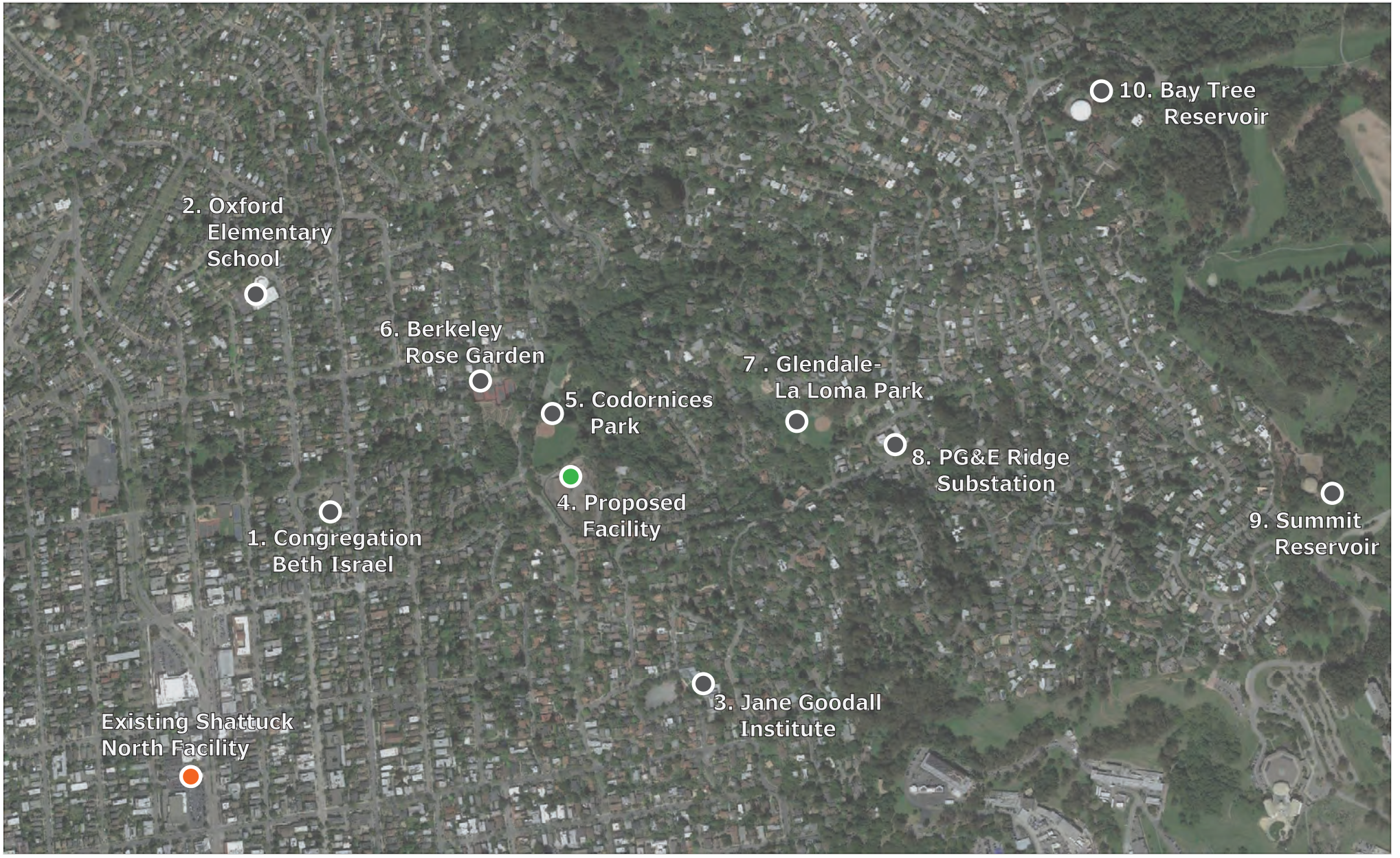


V. Conclusion

Verizon Wireless has reviewed 10 alternatives and a microcell network to fill the Significant Gap in service in the north Berkeley hills. Based upon the preferences identified in the Berkeley Municipal Code, the Proposed Facility, by placing antennas on a tower disguised as a pine tree on a utility property, constitutes the least intrusive alternative under the values expressed in the Berkeley Municipal Code.

verizon

Berkeley Hills
City of Berkeley
Alternative Site Locations



ATTACHMENT 5B

2785 Mitchell Drive
Walnut Creek, CA 94598

March 5, 2020

To: Berkeley City Council

From: Amr Kharaba, Radio Frequency Design Engineer
Verizon Wireless Network Engineering Department

Subject: Statement in Support of Verizon Wireless's Proposed Facility, 0 Euclid Avenue

Executive Summary

Verizon Wireless has identified a significant gap in its fourth-generation long-term evolution (4G LTE) service in the north Berkeley hills residential neighborhoods. This area currently receives inadequate 4G LTE service coverage from the existing Verizon Wireless Kensington Circle facility 1.1 miles northwest of the proposed facility, the Shattuck North facility 0.5 miles southwest, the Lower University facility 1.6 miles southwest, the Berkeley Bekins facility 1.8 miles southwest, and the Gilman Street facility 1.9 miles west. Other existing facilities do not provide appreciable service levels to the area.

As a result of the distance from existing facilities, there is a gap in 4G LTE in-building and in-vehicle service coverage in the north Berkeley hills, and areas lacking outdoor coverage. Further, exponential growth in voice and data usage by Verizon Wireless customers has increased the demand on the existing Verizon Wireless network in a manner that compromises network accessibility and reliability. Slow data speeds and increased latency, resulting from network exhaustion, particularly compromise voice call quality and reliability for Verizon Wireless's Voice over LTE ("VoLTE") technology. This exponential growth in demand has led to capacity exhaustion of the Verizon Wireless facility that provides the most service to the gap area. I have described this significant gap in coverage and capacity in more detail below (the "Significant Gap").

To address the Significant Gap, Verizon Wireless is deploying efficient high-speed 4G LTE technology in Berkeley. Verizon Wireless provides the majority of its 4G LTE service using high-band PCS and AWS frequency spectrum. Higher frequencies mean shorter wavelengths, which means that the PCS and AWS bands provide greater data capacity. However, these high-band frequencies do not travel as far as low-band frequencies and require facilities closer together and closer to the end user to provide reliable LTE service.

To provide reliable LTE service and avoid further degradation of Verizon Wireless service in the north Berkeley hills, Verizon Wireless must resolve the Significant Gap through construction of a new stealth tower facility at Berryman Reservoir, 0 Euclid Avenue (the "Proposed Facility").

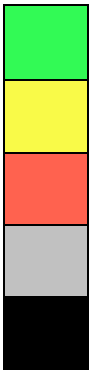
Coverage Gap

Verizon Wireless is experiencing a gap in 4G LTE service coverage in the north Berkeley hills (the "Coverage Gap"). The gap is demonstrated by a recent drive test as well as coverage maps showing poor service throughout the area.

Drive Test – 4G LTE Service Levels

On Tuesday, December 17, 2019, Verizon Wireless drove a test truck through streets in the gap area to measure the 4G LTE signal strength received. The strongest signal measured at a particular location was recorded and geographically plotted on the following map. The drive tester collected the real-time data using Verizon Wireless's DMAT software (Device Monitoring and Analysis Tool).

Referenced signal receive power (RSRP) is a measurement of signal level in decibels (dBm), which decreases due to distance, terrain and other factors. The color of each point indicates the service level received at that location. The coverage thresholds are:



In-building: Green depicts good coverage that meets or exceeds thresholds to provide reliable network coverage in homes and in vehicles.

In-vehicle: Yellow depicts reliable in-vehicle coverage only.

Outdoor: Red depicts reliable outdoor service only.

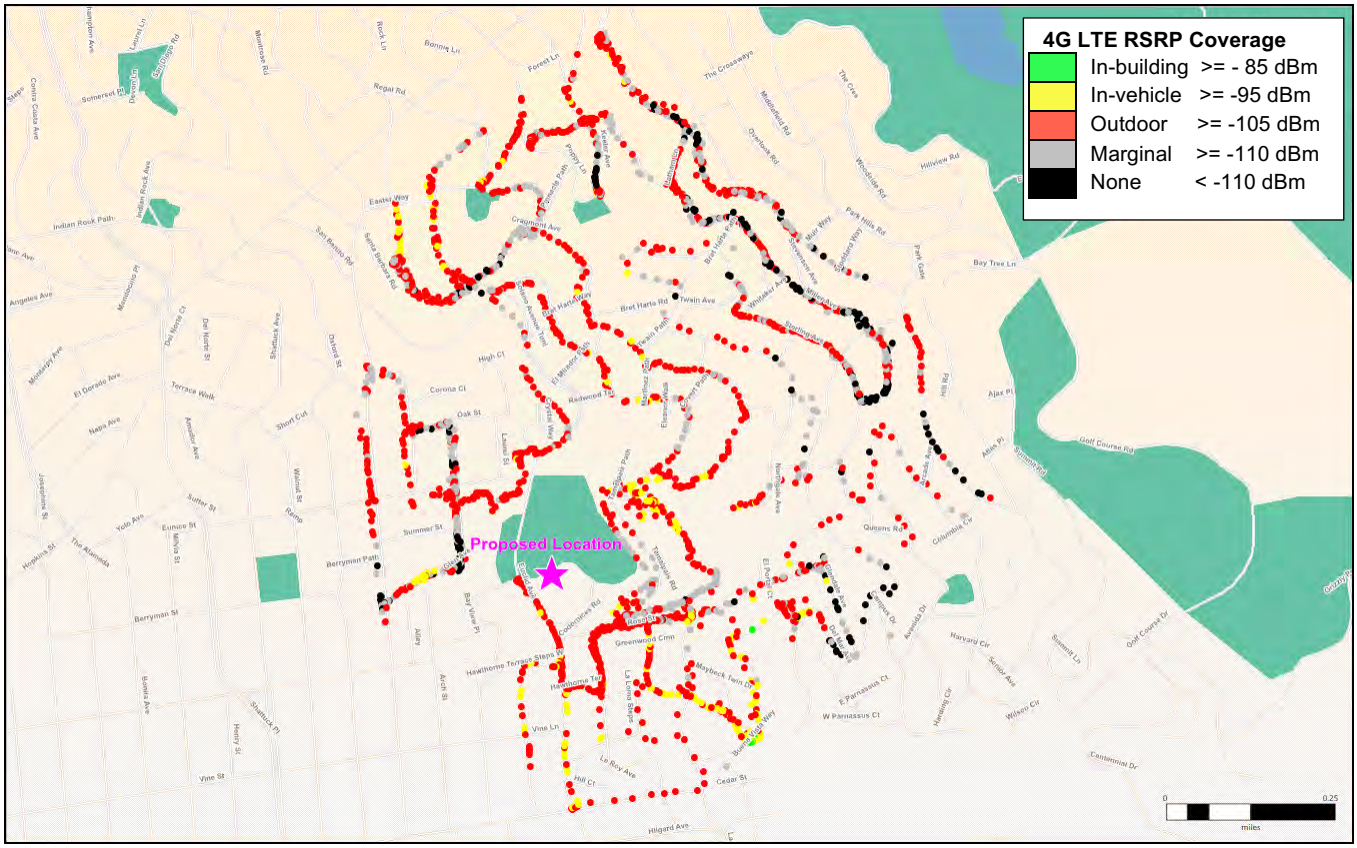
Marginal: Gray depicts poor service areas with unreliable service levels.

None: Black depicts a lack of any usable service level.

The drive test staff, timeframe and equipment setup are described below.

Drive Tester	Gerald Kinney, Principal System Performance Engineer
Drive Test Date, Time	Tuesday, December 17, 2019, 12:07 p.m. – 3:18 p.m.
Equipment Used	Samsung Galaxy S7 & Samsung Galaxy S8
Data analysis software	DMAT (Verizon Device Monitoring and Analysis Tool)
4G LTE Bands Scanned	700 MHz, 850 MHz, PCS (1900 MHz), AWS (2100 MHz)

Drive Test Result - 4G LTE Service Levels



This map shows a lack of in-building coverage in the north Berkeley hills and barely any in-vehicle coverage. In most of the gap area, only outdoor coverage is available, with pockets receiving marginal or no coverage.

Signal is weak due to distance of existing facilities. The best serving signals received generally are in the low-band 700 MHz and 850 MHz frequencies, which travel farther because they have longer wavelengths. The high-band PCS and AWS bands operate in the 1900 and 2100 MHz frequencies, and with shorter wavelengths, they do not travel as far.

Verizon Wireless uses PCS and AWS to provide over 70 percent of its 4G LTE service capacity throughout Berkeley, as shown in the following chart. However, the lack of PCS and AWS service is particularly pronounced in the gap area.

Verizon Wireless Capacity by Band

Band	FCC Designation	Frequency	LTE Bandwidth	% of total bandwidth
700 MHz	UHF Low Band	700 MHz	22 MHz	19.64 %
850 MHz	Cellular	850 MHz	10 MHz	8.93 %
PCS	Personal Communications Service	1900 MHz	20 MHz	17.86 %
AWS	Advanced Wireless Service	2100 MHz	60 MHz	53.57 %

Modifying the surrounding facilities is not a feasible solution to the Significant Gap. Other Verizon Wireless facilities serving the gap area are fully built out to provide all channels on all four frequency bands used by Verizon Wireless, except the Shattuck North facility which does not provide the 850 MHz band. As described below, the Shattuck North facility provides very little service to the gap area, and adding the 850 MHz band will not provide significant relief to the Significant Gap.

Coverage Maps

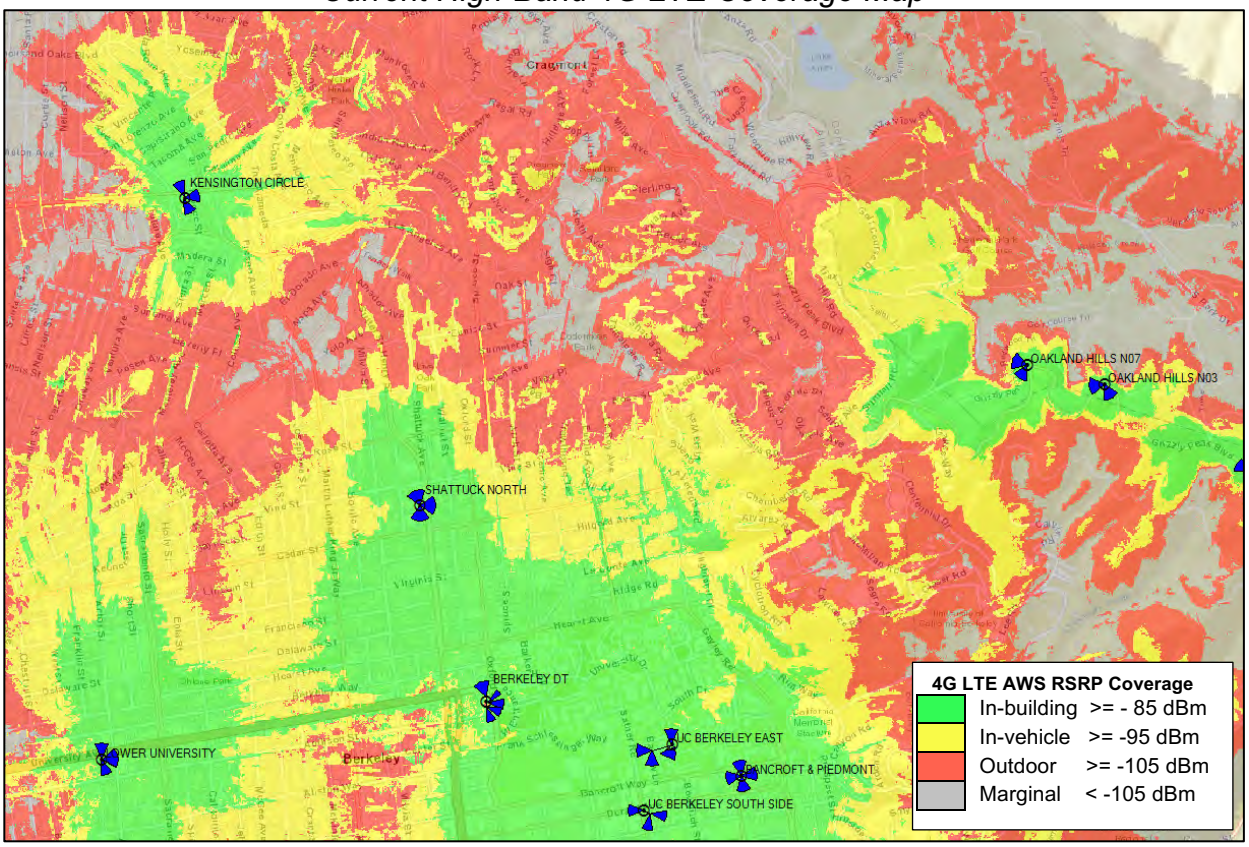
Coverage maps depict the anticipated level of signal, and therefore the projected LTE coverage provided by a wireless facility at a given location. Consistent with the above drive test map showing the actual, measured service levels, the following 4G LTE coverage map shows a lack of high-band service in the north Berkeley hills. There is a lack of in-building coverage and barely any in-vehicle coverage, with the area receiving only outdoor or marginal coverage levels.

Verizon Wireless uses a 4G LTE RF link budget to calculate the maximum allowable path loss (MAPL). The link budget takes into account free space loss, fading and interference margins, and equipment receiver sensitivity to calculate the MAPL. A combination of the transmit power out of the antennas and the MAPL determine the receive signal threshold required for outdoor coverage. Adding vehicle body losses to the calculation determines the receive signal threshold required for in-vehicle coverage. Similarly, adding the building penetration losses to the calculation determines the receive signal threshold required for in-building coverage.

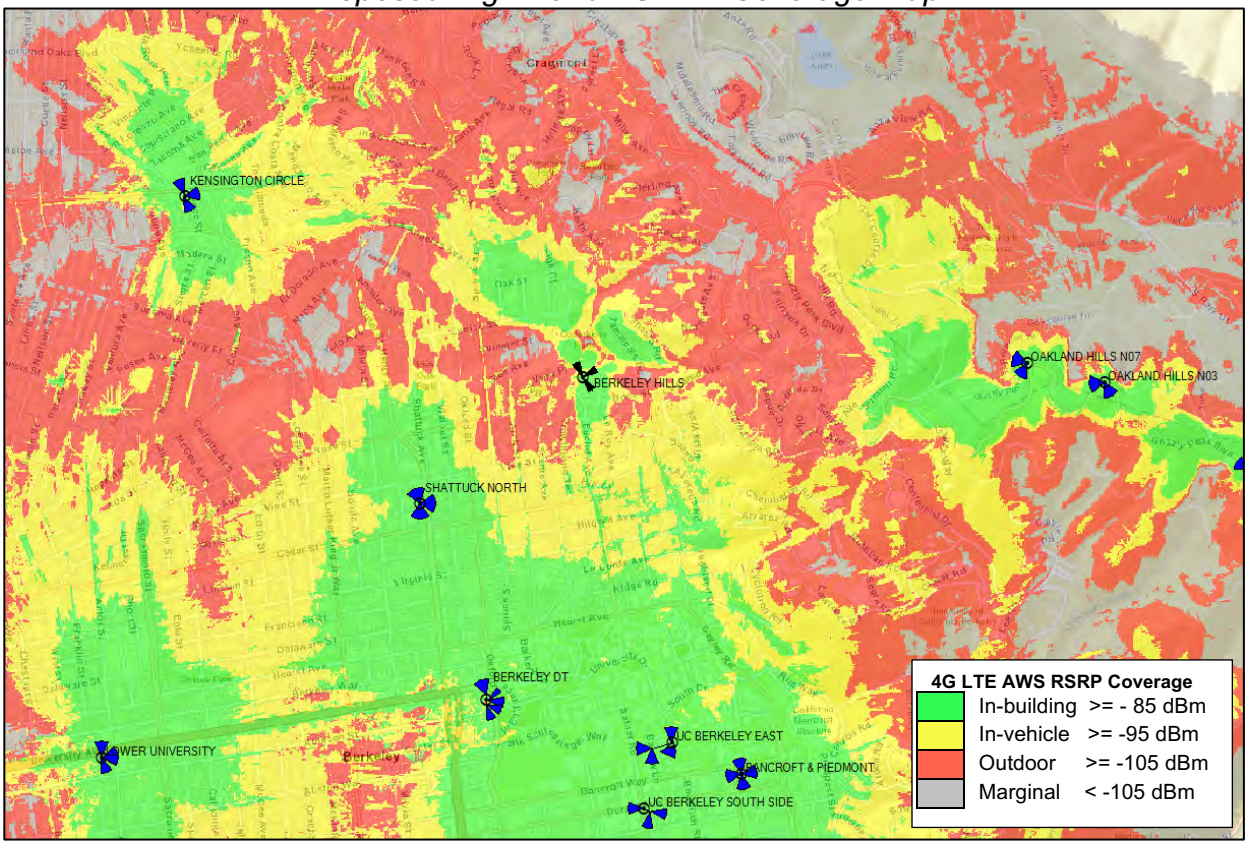
Located near the center of the gap, the Proposed Facility will provide new reliable 4G LTE service coverage to the gap area, including areas near Euclid Avenue between Keith Avenue and Vine Lane. In total, the Proposed Facility will provide improved service coverage to an area of 1.6 square miles and a population of 2,420 residents.

See Coverage Maps on Following Page

Current High-Band 4G LTE Coverage Map



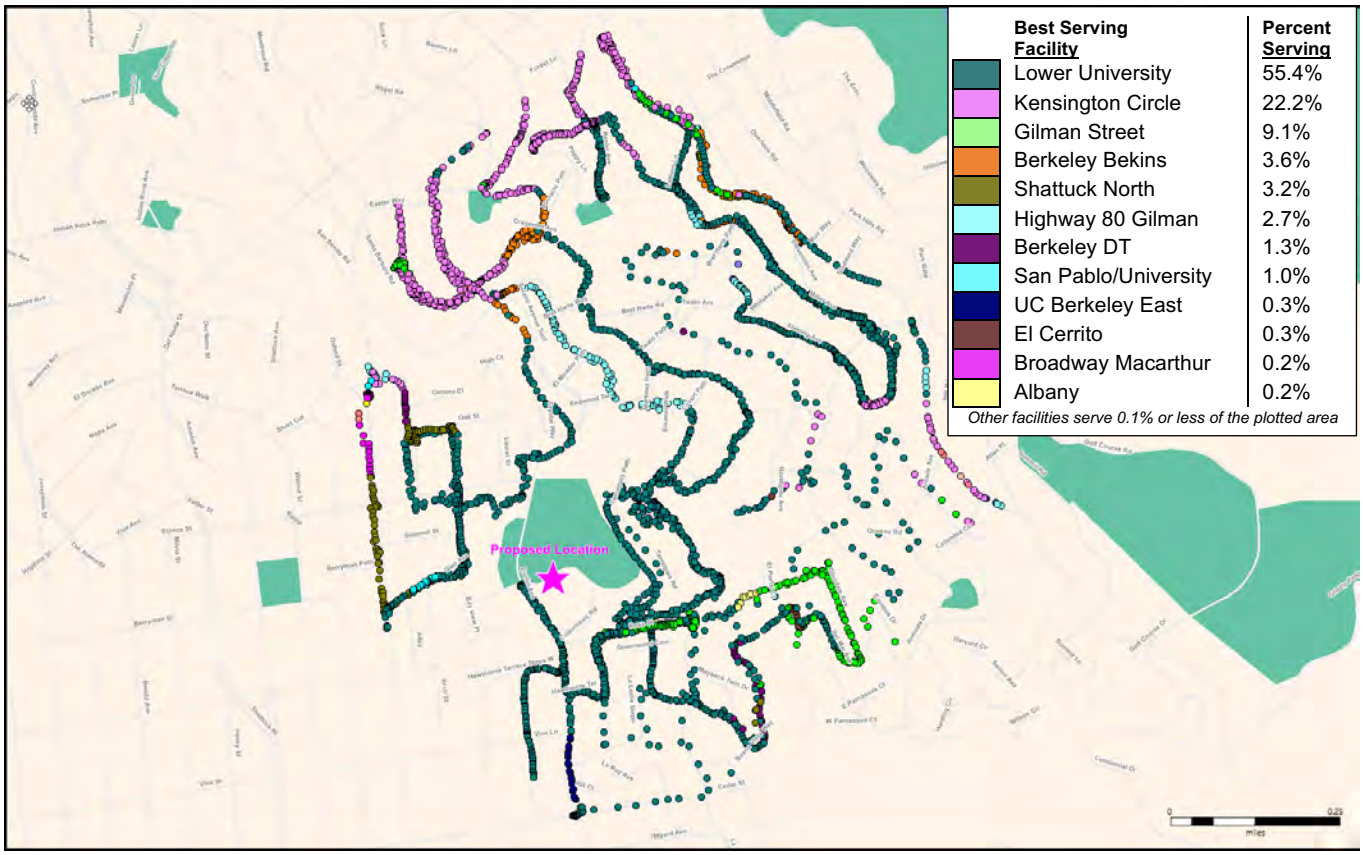
Proposed High-Band 4G LTE Coverage Map



Drive Test - Best Serving Facility

As described above, the specified gap area receives inadequate service from distant Verizon Wireless macro facilities. The following drive test map depicts which Verizon Wireless facility is serving a particular location by providing the strongest signal to customer handsets. Signal from each facility is depicted in a different color. The percentage of the plotted area served by each facility is shown in the legend.

Drive Test Result – Best Serving Facility



Over half of the area plotted is served principally by the Lower University facility 1.6 miles southwest of the Proposed Facility (shown in dark green). As explained below, that facility has reached capacity exhaustion. The Lower University facility serves much of the gap area, though weakly, because it has a good line-of-sight to the hills to the east. The vertical dimension of the beam emitted from an antenna increases in height with greater distance, so signal from the Lower University facility easily reaches elevated terrain in the distant hills to its east, spreading across a broad area. In contrast, the Shattuck North facility is close to the hills, and its signal immediately encounters nearby low-elevation terrain that impedes it from extending to the higher terrain beyond.

The best serving facility map shows scattered service from other facilities throughout the gap area, intermixed with signal from the Lower University facility. This demonstrates a lack of reliable dominant signal, which compromises system

performance for Verizon Wireless customers, including those in transit. As explained above, signal from all of the distant facilities is weak in the gap area, further compromising performance. These factors lead to unreliable service for residents, visitors and emergency services personnel, particularly during busy hours.

The Proposed Facility is strategically located to provide consistent dominant signal to the gap area, ensuring reliable service for customer handsets.

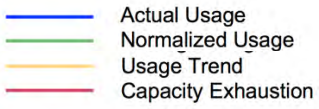
Capacity Gap

As noted above, the Lower University facility that serves more than half of the gap area has reached capacity exhaustion.

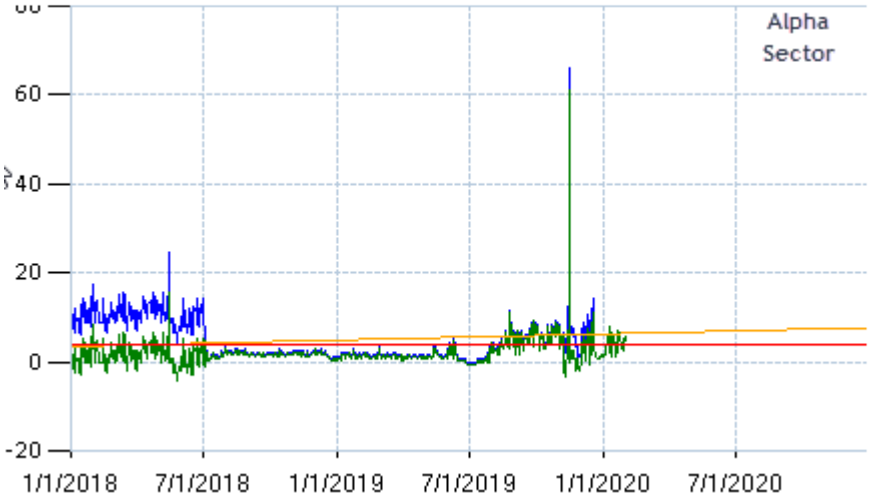
The following capacity chart shows how increased demand has already outstripped the capacity of the Lower University facility's antenna sectors that serve the gap area. The capacity chart depicts the increased usage of this facility through January 2020 as well as predicted usage through late 2020. ASEU (Average Scheduler Eligibility Usage) is a measure of resource management of the facility and shows its ability to schedule the data packets over the radio channel. The ASEU charts show that growth in the number of customers accessing the facility has outstripped its capacity to provide reliable service.

See Capacity Charts on Following Page

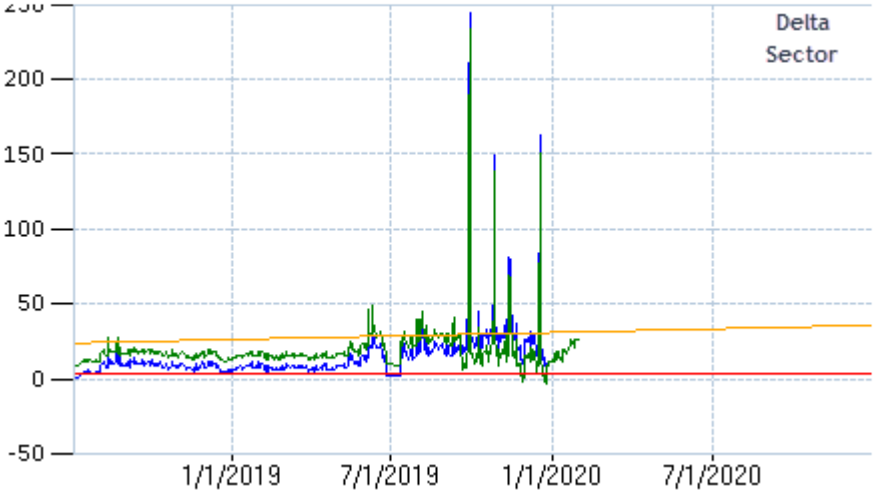
ASEU Capacity Charts
Lower University Facility
East-Facing Antenna Sectors



Alpha Antenna Sector (80 degrees from north)



Delta Antenna Sector (101 degrees from north)



By comparing the trend line of average usage (orange line) with the maximum capacity of a facility (red line), Verizon Wireless RF engineering demonstrates that these Lower University facility antenna sectors reached capacity exhaustion over one year ago. Capacity exhaustion severely compromises the Verizon Wireless network in the entire area served by the exhausted antenna sectors, leading to call failures and slow data speeds, as well as poor call quality and reliability over Verizon Wireless VoLTE technology (the “Capacity Gap”).

At times of high traffic volume, the coverage area of the surrounding Verizon Wireless facilities shrinks to accommodate an increasing number of mobile

devices closer to each facility. As a result, the Coverage Gap area expands and is exacerbated during times of high customer usage. The contraction of coverage during times of high usage has become more relevant as the demand for wireless services has increased rapidly over time. In North America, mobile data traffic increased 44 percent during the year 2016.[1]

The Proposed Facility is strategically located to provide new dominant signal to the gap area, which will relieve the overburdened Lower University facility so it can devote its network capacity to customers closer to its location. This will improve overall network performance in Berkeley, and provide new reliable service within the gap area.

As noted, the gap area generally receives weak signal in only the low-band 700 MHz and 850 MHz frequencies, with little to no service in the high-band PCS and AWS frequencies. In addition to low-band service, the Proposed Facility will provide new high-band PCS and AWS service, which provides greater data capacity to customers.

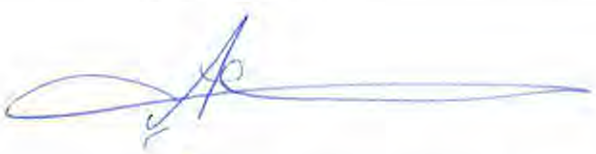
Conclusion

As cellular networks mature, the network must be supplemented with more sites closer to customers, in large measure due to the increase in usage of the network. The LTE technology used by Verizon Wireless to provide 4G service requires facilities closer to customers, and this technology cannot be provided by the existing, distant facilities serving the gap area. These coverage and capacity challenges have resulted in the Significant Gap in Verizon Wireless 4G LTE coverage and network capacity in the north Berkeley hills. Verizon Wireless must deploy the Proposed Facility to provide reliable 4G LTE service to customers and to avoid further degradation of its network in the area of the Significant Gap.

Please feel free to contact me with any questions or comments regarding Verizon Wireless's proposed facility.

Respectfully submitted,

Amr Kharaba
RF Design Engineer
Network Engineering Department
Verizon Wireless



[1] *Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2016-2021 White Paper,* updated March 28, 2017.

TELECOM LAW FIRM PC

ATTACHMENT 5C

WIRELESS PLANNING MEMORANDUM
RE: Alternatives Analysis and Justification Statement

TO: Rincon Consultants, Inc.
FROM: Dr. Jonathan L. Kramer
DATE: May 7, 2020
ADDRESS: East Bay Municipal Utility District ("**EBMUD**")
Berryman Reservoir, Berkeley, California

CLIENT: Rincon's Client – City of Berkeley, California
CARRIER: Verizon
LOC. NO: 273566
LOCATION ID: BERKELEY HILLS
RINCON #: 19-07869

I. SUMMARY

Telecom Law Firm, PC ("**TLF**") is subcontractor to the lead contractor for the City of Berkeley ("**City**"), Rincon Consultants, Inc. ("**Rincon**"). TLF is a telecommunications law firm retained by local governments. TLF does not work for the wireless industry.

TLF has carefully reviewed the alternatives site analysis and RF justification statements provided by Verizon into the public record for this case.

Verizon's justification statement and its alternatives analysis reasonably demonstrate that: (a) there are underserved areas within the claimed gap area that are likely to be subject to reducing service levels if a new nearby cell site is not constructed, and (b) among the alternative sites identified by Verizon, the Berryman Reservoir site is most able to serve the claimed gap area with the least visual impact on the community.

II. PROJECT DESCRIPTION

In May 2019, Verizon submitted a wireless application to the City to construct and operate a new wireless site, specifically a 50-foot-tall Monopine, at the East Bay Municipal Utility District ("**EBMUD**") Berryman Reservoir in Berkeley, California. Verizon proposes to construct the Monopine north of the existing water tank on the property.

- See Figure 1 for Verizon's proposed project description;
- See Figure 2 for the overall location of the proposed Monopine and associated base station equipment;
- See Figure 3 for the proposed location of the proposed Monopine and antenna azimuths;

- See Figure 4 for the proposed antenna layout within the canopy of the proposed Monopine; and
- See Figure 5 for an elevation view of the proposed Monopine.

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

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

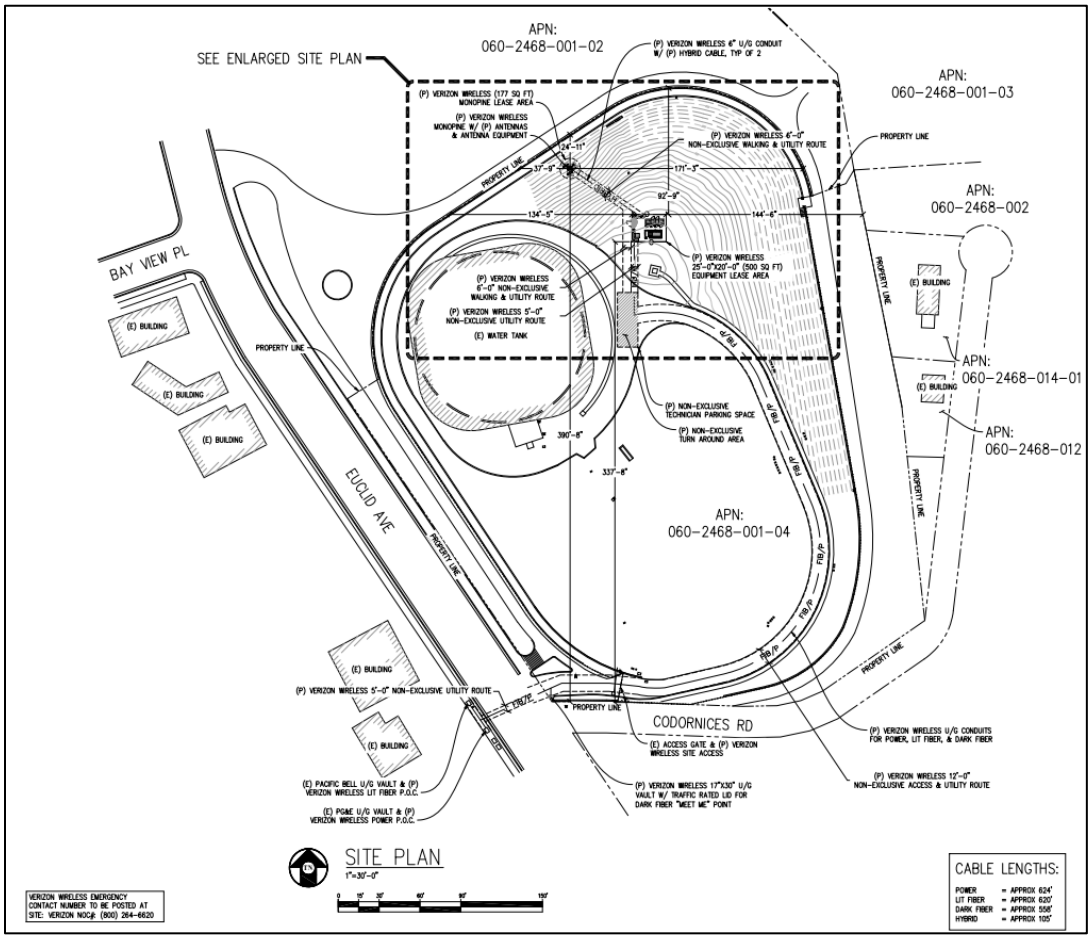


Figure 2: Overall location of the Monopine and associated equipment (Source: Plans, Page A-1).

Figure 3: Approximate (i) location of Monopine and (ii) azimuth orientations for the three proposed antenna sectors (Source: Google Maps; Annotated by Dr. Kramer).

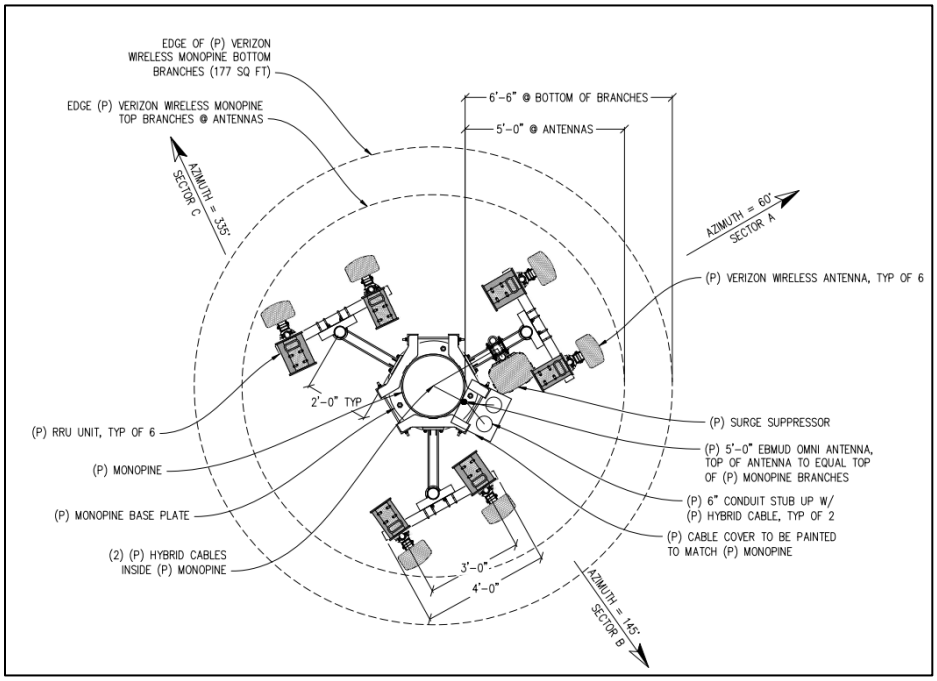


Figure 4: Antenna Plan (Source: Plans, Page A-4).

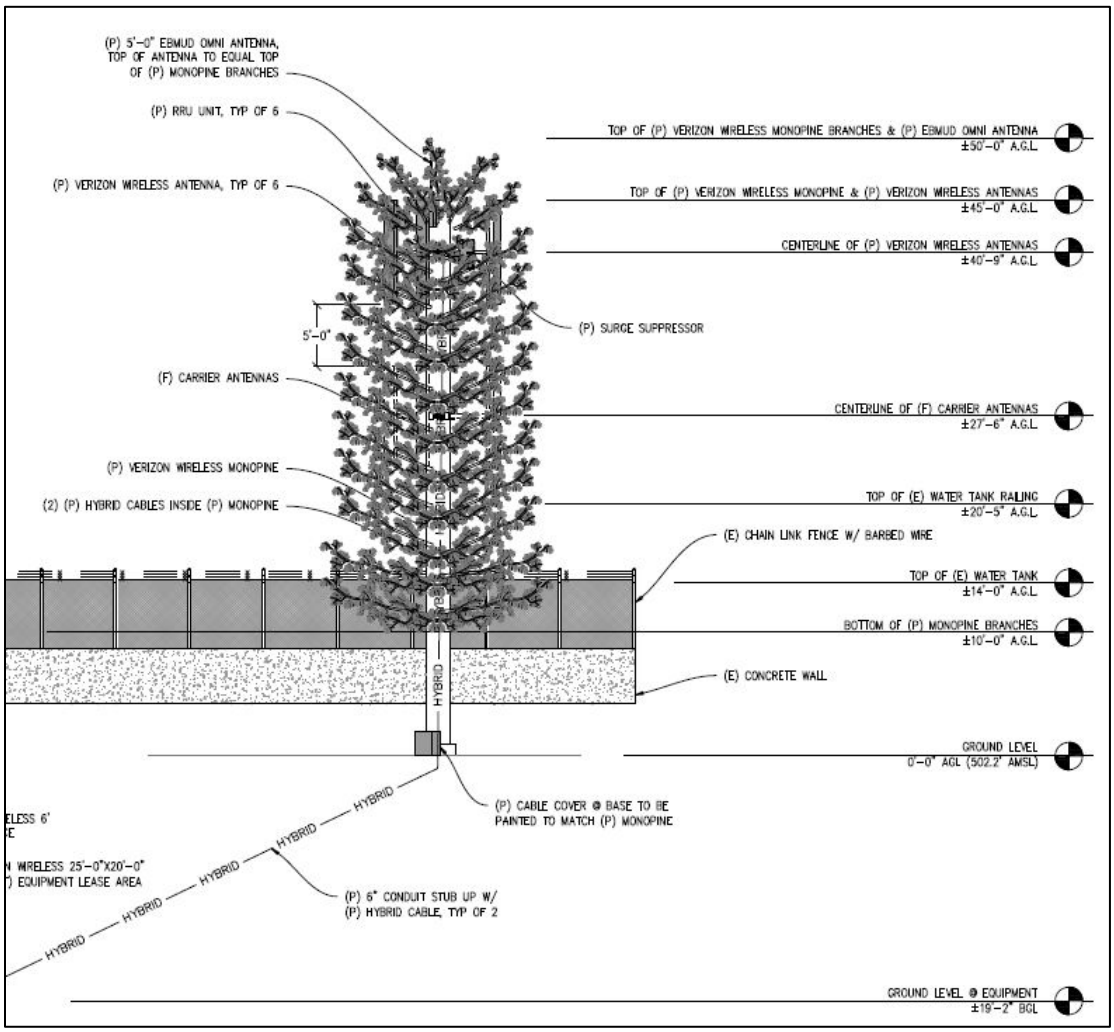


Figure 5: Overall height and design of Monopine (Elevation view; Source: Plans Page A5).

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III. ALTERNATIVES ANALYSIS

The City, through Rincon, requested that TLF review Verizon's submitted alternatives analysis, prepared conducted by Ridge Communications, Inc. and compiled by Mackenzie & Albritton LLP and dated March 5, 2020 ("**Alternatives Analysis**").

***Review of Microcell Network*.....**
***Façade- and Roof-Mounted Facilities*.....**
1. Congregation Beth Israel .....
2. Oxford Elementary School .....
3. Jane Goodall Institute .....

***Freestanding Tower Facilities*.....**
4. Proposed Facility – Berryman Reservoir
5. Codornices Park.....
6. Berkeley Rose Garden .....
7. Glendale-La Loma Park.....
8. PG&E Ridge Substation .....
9. Summit Reservoir .....
10. Bay Tree Reservoir .....

Figure 6: List of ten alternative sites analysis (Source: Alternatives Analysis).

The next sections analyze each of the alternatives as well as cross-compare them with the proposed Monopine.

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1. **Alternative No. 1: "CONGREGATION BETH ISRAEL"- See Figure 7**
   Address: 1301 Oxford Street
   Elevation: 320 Feet
   Zoning: R-1 Residential

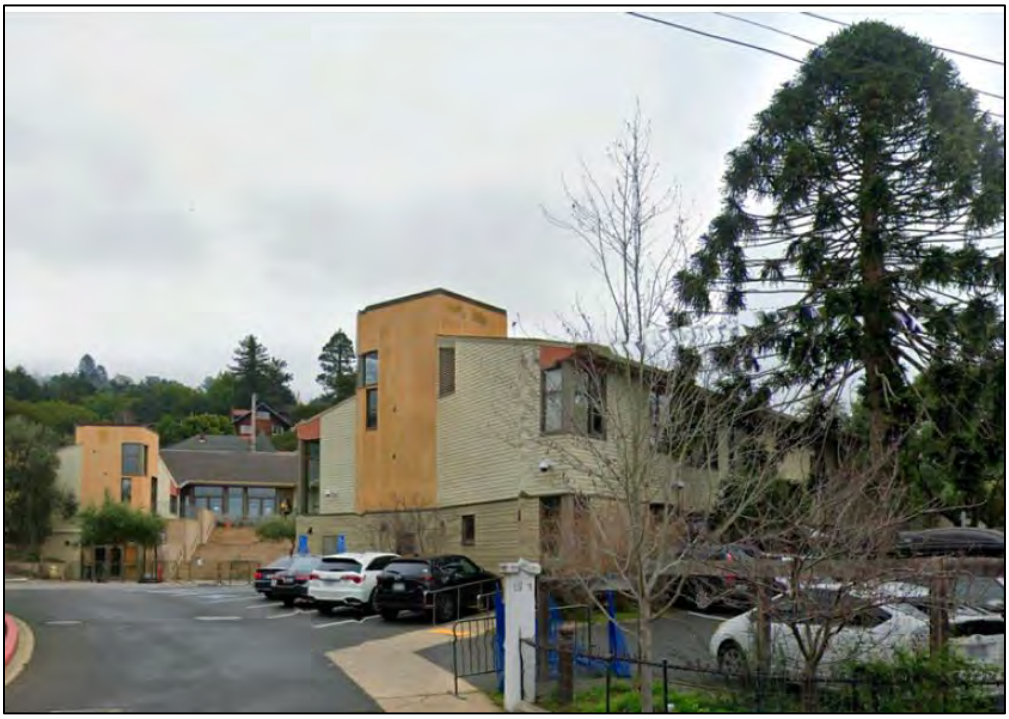

Figure 7: "Congregation Beth Israel" (actually Congregation Beth El).
(Source: Alternatives Analysis).

Alternative No. 1, Congregation Beth El (mislabeled by Verizon as Congregation Beth Israel) is surrounded primarily by single family residences.

Figure 8a depicts a close-in view of Verizon's projected coverage map of the High-Band 4G LTE Coverage that would be provided by a facility located at Congregation Beth El. Figure 8a can be compared to Figure 8b, the projected Verizon coverage from the proposed Berryman Reservoir site at the same scale.

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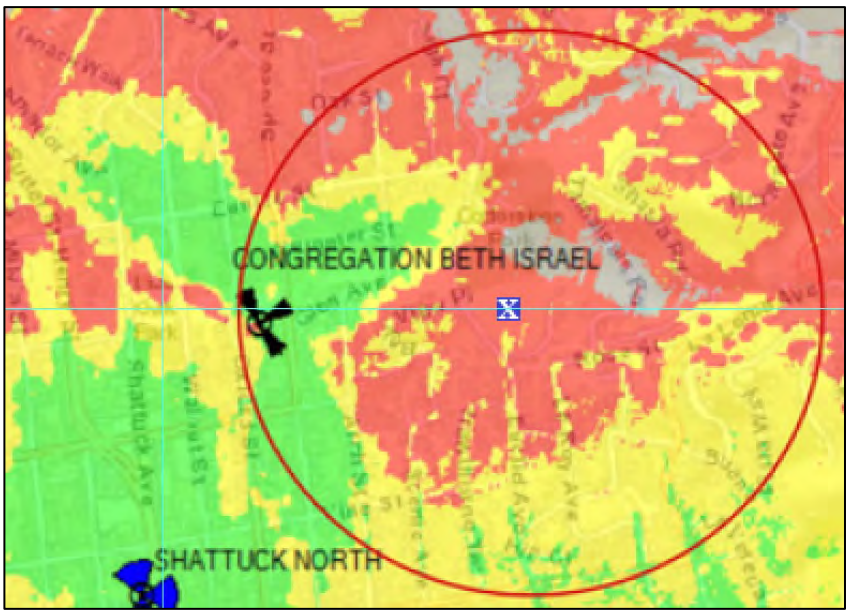

Figure 8a: Estimated coverage from Alt 1 site. The white "X" shows the approximately of the Berryman Reservoir.

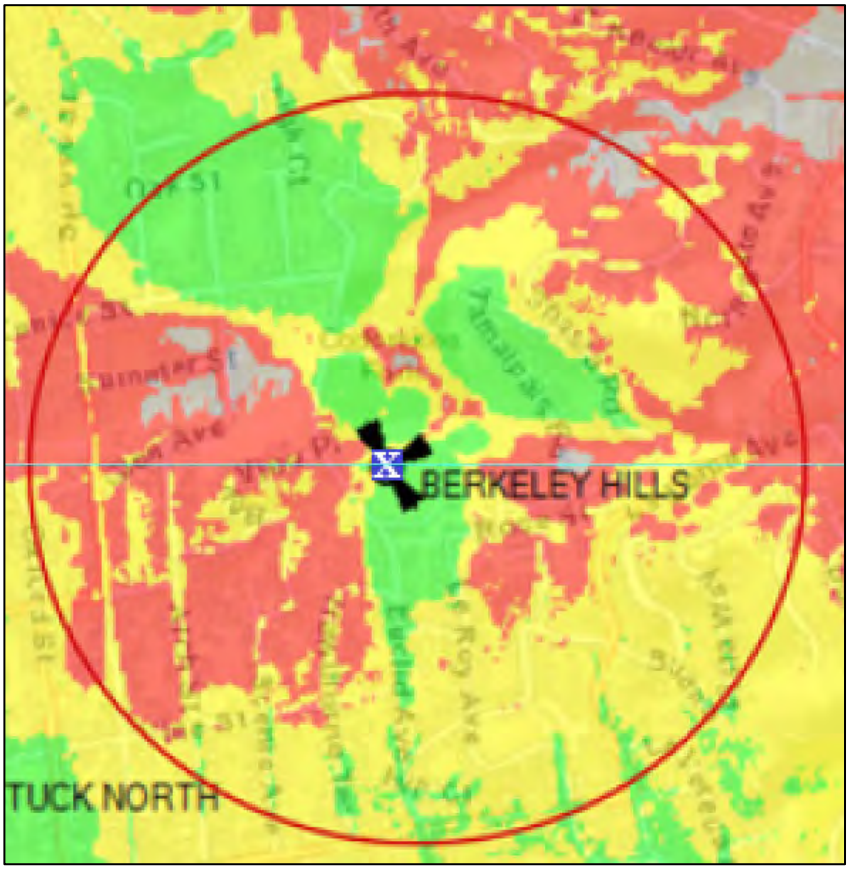

Figure 8b: Estimated coverage from the Berryman Reservoir candidate site (white "X").

From the estimated coverage maps in Figures 8a and 8b it is seen the projected signal coverage from Alt 1 would be mainly to the west portion of the Verizon-claimed gap area, and that the candidate site at the Berryman Reservoir, which is substantially higher in elevation above sea level would provide substantially greater 'fill in' of the claimed gap area. As the elevation rises from west to east, the estimated signal from Alt 1 is attenuated or shadowed by the terrain.

This alternative location is immediately adjacent to residential uses. Moreover, a site at Alt 1 would be substantially closer to residences than Verizon's candidate site at the Berryman Reservoir. The residential uses near Alt 1 are denser—both in proximity to each other and the religious center—than compared to those near the Berryman Reservoir.

From the perspective of improving signal coverage in Verizon's claimed gap area with less impact on community aesthetics, the Berryman Reservoir site is materially superior to Alt. 1.

2. **Alternative No. 2: "OXFORD ELEMENTARY SCHOOL"- See Figure 9**
   Address: 1301 Oxford Street
   Elevation: 380 Feet
   Zoning: R-1 Residential

Figure 9: Oxford Elementary School (Source: Alternatives Analysis).

TLF notes that the Alternatives Analysis indicated that the Berkeley Unified School District responded to Verizon that the District is not interested in hosting a cell site at

this location. To the extent that this representation is true, this alternative should be considered not potentially available and therefore not a viable alternative candidate to the proposed site at the Berryman Reservoir.

Additionally, Verizon has misidentified the location of the school as being the same as that of Verizon's misidentified "Congregation Beth Israel" (correctly, Congregation Beth El). The correct address for Oxford Elementary School is 1130 Oxford Street.

Notwithstanding the lack of landlord interest, it is extremely unlikely that a site at this school would provide substantially equal or more coverage to Verizon's claimed gap area, much less more or even equally effective as the proposed Berryman Reservoir site. These factors strongly suggest that a site at the school would suffer from the similar technical concerns presented by a facility were it to be placed at Congregation Beth El.

Finally, this alternative location is immediately adjacent to residential uses, which would not be the case at the proposed Berryman Reservoir site.

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3. Alternative No. 3: "JANE GOODALL INSTITUTE"- See Figure 10

Address: 1581 Leroy Avenue
Elevation: 540 Feet
Zoning: R-1 Residential

Figure 10: Jane Goodall Institute (Source: Alternatives Analysis).

We note that Verizon misidentifies the address of this location as "1581 Leroy Avenue." The correct address is 1581 Le Roy Avenue.

This alternative location is immediately adjacent to residential uses, which is not the case at the Berryman Reservoir.

Figure 11a depicts a close-in coverage map of the High-Band 4G LTE Coverage Provided by a Facility at the Jane Goodall Institute compared to Figure 11b, the coverage from proposed site at the same close-in scale.

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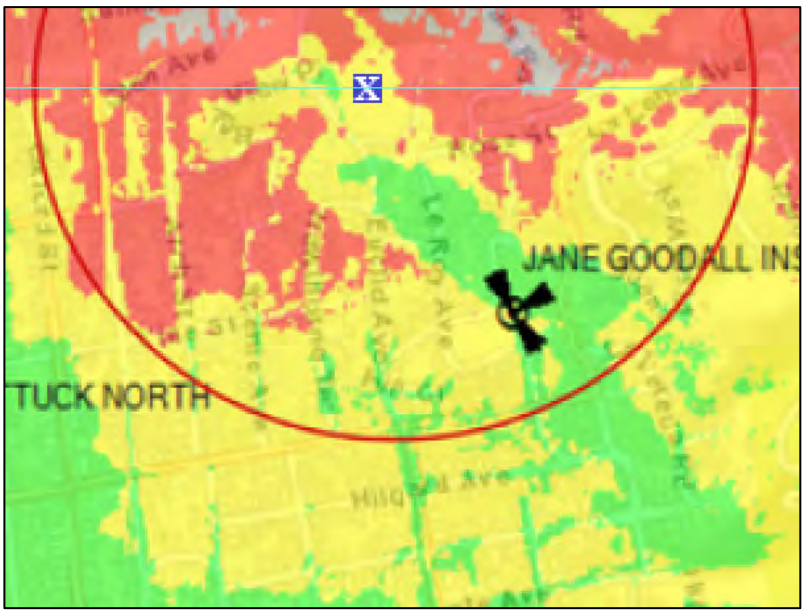

Figure 11a: Estimated coverage from Alt 3 site. The white "X" shows the approximately of the Berryman Reservoir

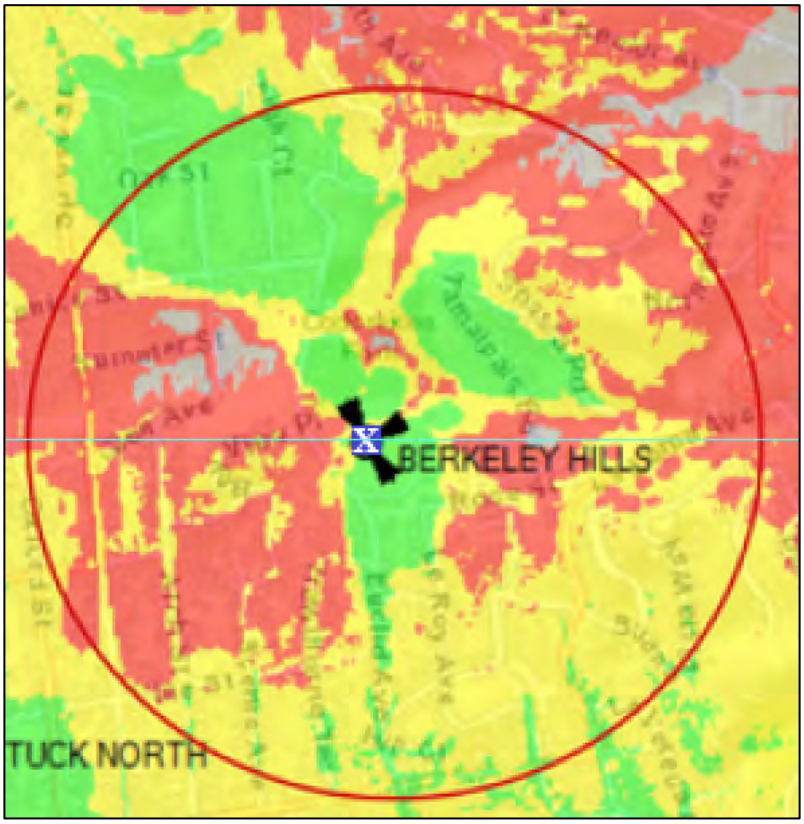

Figure 11b: Estimated coverage from the Berryman Reservoir candidate site (white "X").

From the estimated coverage maps in Figures 11a and 11b it is seen the coverage from Alt 3 would be mainly to a small southernly portion of the Verizon-claimed gap area, and that the candidate site at the Berryman Reservoir, which is lower than Alt. 3 would provide substantially greater 'fill in' of the claimed gap area.

Moreover, a site at Alt 3 would be closer to more residences than Verizon's candidate site at the Berryman Reservoir. The residential uses near Alt 3 are denser—both in proximity to each other and the Jane Goodall Institute—than compared to those near the reservoir. Alt 3 appears to be potentially superior to Alt 1 due to slightly less dense development nearby and a larger property with more concealment opportunities, but not to the candidate site at the reservoir.

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4. BERRYMAN RESERVOIR (Primary Candidate)

Address: 0 Euclid

Elevation: 500 Feet

Zoning: R-1 Residential

This is the primary candidate site. The projected coverage from this site is shown in Figure 12, below:

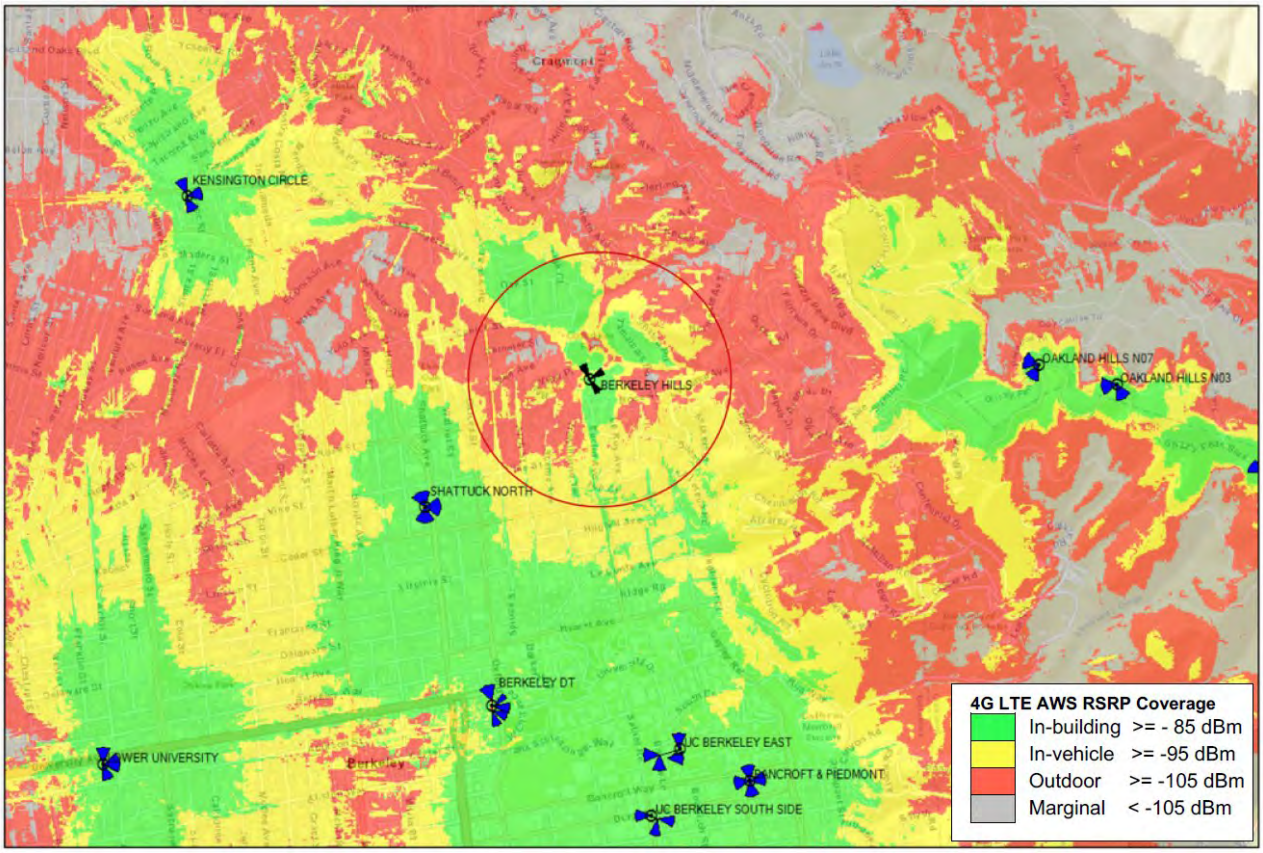

Figure 12: Estimated coverage from proposed candidate site at the Berryman Reservoir.

In relation to the other alternatives identified by Verizon, the proposed site provides the most estimated signal coverage within Verizon's claimed gap area, show as the red circle on the estimated coverage map.

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TLF notes that the Berryman Reservoir is located immediately south of Codornices Park, a City owned public park, which is discussed in the next section.

TLF has analyzed publicly available photographs taken within and above Codornices Park to assess whether a wireless site located at the Berryman Reservoir would be "readily visible" from that public park.

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Figure 13a shows a flyover view of Codornices Park looking south to Berryman Reservoir. Note the stand of mature trees identified by the white arrow between Codornices Park and Berryman Reservoir.

Figure 13a: Flyover view looking south over Cordornices Park to the Berryman Reservoir (Source: Bing "Birds Eye" view; annotated by Dr. Kramer).

A second stand of mature trees, also located inside Cordornices Park just south of the sandy play area and the Basketball court, is shown in Figure 13b.

Figure 13b: Flyover view looking south over Cordornices Park to the Berryman Reservoir (Source: Bing "Birds Eye" view; annotated by Dr. Kramer).

The City of Berkeley Municipal Code Section 23F.04.010 ("Definitions") defined the term "readily visible" as follows:

> "A wireless telecommunications facility is readily visible if it can be seen from street level or from the main living area of a legal residence in a residential district or from a public park by a person with normal vision, and distinguished as an antenna or other component of a wireless telecommunication facility, due to the fact that it stands out as a prominent feature of the landscape, protrudes above or out from the building or structure ridgeline, or is otherwise not sufficiently camouflaged or designed to be compatible with the appurtenant architecture or building materials. For purposes of this definition, "main living area" means the living and dining and similar areas of a dwelling, but not bedrooms, bathrooms or similar areas."

The directly relevant portion of the Municipal Code just cited is: "A wireless telecommunications facility is readily visible if it can be seen …from a public park by a person with normal vision, and distinguished as an antenna or other component of a wireless telecommunication facility, due to the fact that it stands out as a prominent feature of the landscape... "

Assessing the physical layout of Cordornices Park, including the stands of mature trees, and the proposed wireless site monopine tree camouflage for the trunk and antennas of the proposed site, TLF believes that Verizon's proposed site at the Berryman Reservoir will not be 'readily visible" within the meaning of Berkeley Municipal Code Section 23C.17.050(B) incorporating the relevant definition in Berkeley Municipal Code Section 23F.04.010.

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5. Alternative No. 5: "CODORNICES PARK"- See Figure 14

Address: 1201 Euclid Avenue
Elevation: 500 Feet
Zoning: R-1 Residential

Figure 14: Codornices Park (Source: Alternatives Analysis).

Alt. 5 is located immediately north of the proposed candidate site.

The Alternative Analysis provided by Verizon for this site indicates that "[t]his [alternative] cannot be considered a less intrusive alternative to the Proposed Facility." TLF agrees, and refers the reader to Berkeley Municipal Code Section 23C.17.050(B), which says in relevant part, "No wireless communications facilities shall be sited on or above a ridgeline or at any other location readily visible from a public park, unless the Zoning Adjustments Board makes the applicable findings required in Section 23C.17.100." If this alternative were selected, the cell site would be readily visible from within the park.

Verizon elected not to provide a proposed coverage map for a site located at Codornices Park, but for all useful purposes it would be essentially identical to the proposed coverage from the proposed candidate site at Berryman Reservoir.

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6. **Alternative No. 6: "BERKELEY ROSE GARDEN"- See Figure 15.**
   Address: 1200 Euclid Avenue
   Elevation: 420-480 Feet
   Zoning: R-1 Residential

Figure 15: Berkeley Rose Garden (Source: Alternatives Analysis).

Alt 6 is located directly west of Cordornices Park across Euclid Avenue, and just northwest of the proposed candidate site. Alt 6 has closely adjacent homes.

Verizon's Alternative Analysis for this site indicated that "A very tall facility within the Rose Garden park would be readily visible to park users. This cannot be considered a less intrusive alternative to the Proposed Facility". TLF agrees.

A wireless site at Alt 6 is visually counterintuitive as it would place a faux tree structure in an area reserved to preserve and present living flora.

Alt 6 location is immediately adjacent to residential uses, which is not the case at the Berryman Reservoir.

Verizon elected not to provide a proposed coverage map for a site located at the Berkeley Rose Garden Park, but for all useful purposes it would be essentially identical to the proposed coverage from the proposed candidate site at Berryman Reservoir.

Based on the multiple stands of mature trees visually isolating the Berkeley Rose Garden from the Berryman Reservoir, TLF concludes that the proposed wireless site at Berryman Reservoir will not be "readily visible" from the Berkeley Rose Garden, a public park, but that a cell site within the Rose Garden would be "readily visible" to the public from within the park.

7. Alternative No. 7: "GLENDALE LA LOMA PARK"- See Figure 16

Address: 1310 La Loma Avenue
Elevation: 780-840 Feet
Zoning: R-1 Residential

Figure 16: Glendale La Loma Park (Source: Alternatives Analysis).

The Alternative Analysis for this site indicated that: "…the Code discourages facilities visible from a public park. As noted, a tower facility at the western edge within this park would be readily visible to park users. This cannot be considered a less intrusive alternative to the Proposed Facility."

Verizon's Alternative Analysis for this site indicated that "a tower facility at the western edge within [Glendale-La Loma Park] would be readily visible to park users. This cannot be considered a less intrusive alternative to the Proposed Facility." TLF agrees , but notes that based on the distance from and mature trees between multiple stands of mature trees and existing residential structures visually separating Glendale La Loma Park from the Berryman Reservoir, the proposed wireless site at Berryman Reservoir will not be "readily visible" at the Glendale La Loma Park.

Verizon elected not to provide a proposed coverage map for a site located at the Glendale La Loma Park, but for all useful purposes it would be like the proposed coverage from the proposed candidate site at Berryman Reservoir.

Alt 7 is immediately adjacent to residential uses, which is not the case at the Berryman Reservoir.

8. **Alternative No. 8: "PG&E RIDGE SUBSTATION"-See Figure 17**
   Address: 1313 Glendale Avenue
   Elevation: 855 Feet
   Zoning: R-1 Residential

Figure 17: PG&E Substation (Source: Alternatives Analysis).

Verizon's Alternative Analysis for this site indicated that "[a] wireless facility placed on the one story building could not serve the gap because ridges north and south would block signal [sic]; a tower facility would be required. The only area of the property potentially viable for placement of a new tower foundation and equipment area is the small parking lot, where a tower would be within 50 feet of homes. A new tower facility at this location would present substantial visual impact as viewed."

TLF has reviewed this alternative site using topographic maps and agrees with Verizon that the local topography is unfavorable to a rooftop cell site this location. Moreover, the apparent limited space in the adjacent parking area would be too small for a macrocell site, and even if so, would require the removal of trees in that lot.

Moreover, this site is immediately adjacent to residential uses, which is not the case at the Berryman Reservoir.

9. **Alternative No. 9: "SUMMIT RESERVOIR"- See Figure 18**
   Address: Summit Road (N37.884227, W122.246064)
   Elevation: 1,340 Feet
   Zoning: City of Oakland

Figure 18: Summit Reservoir (Source: Alternative Analysis).

Figure 19 depicts a coverage map of the High-Band LTE Coverage Provided by the Facility at Summit Reservoir in relation to the area of the Berryman Reservoir (marked with the white "X".

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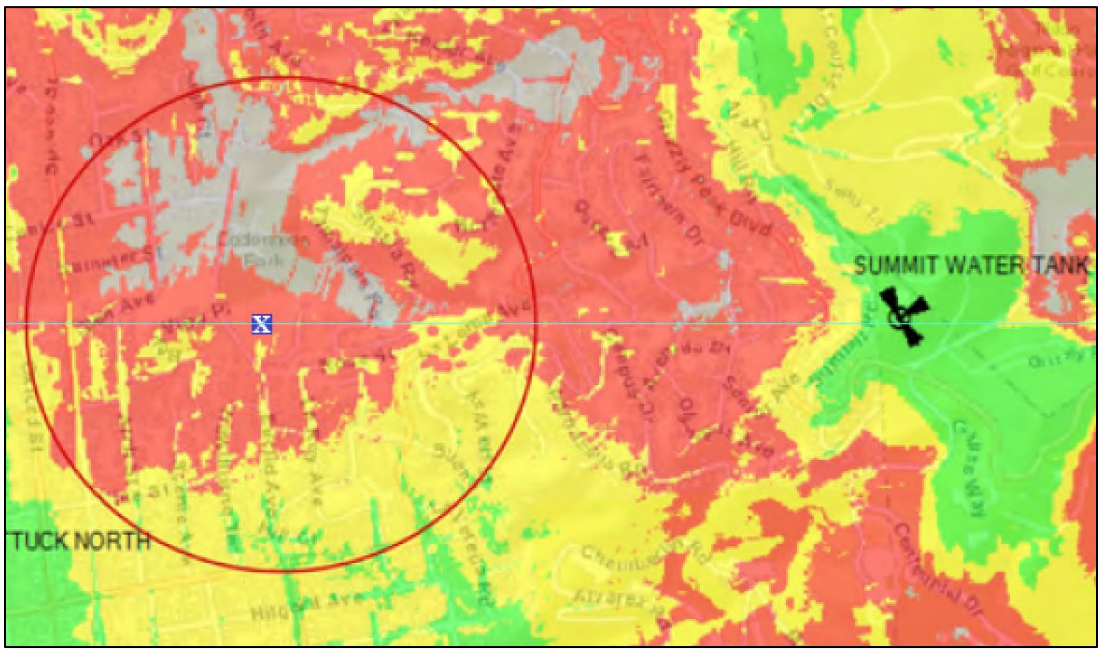

Figure 19: Emissions from Summit Reservoir (Source: Alternatives Analysis; annotated by Dr. Kramer).

Verizon reports that "[d]ue to inability [of the Summit Reservoir] to serve the Significant Gap, this is not a feasible alternative to the Proposed Facility."

TLF agrees. The topography between the Summit alternative and the area of Verizon's claimed gap prevents the Summit site from being considered as a viable alternative. No signals from this alternative would provide any benefit to the area claimed by Verizon to be in a service gap.

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10. Alternative No. 10: "BAY TREE RESERVOIR" -See Figure 20

Address: Bay Tree Lane
Elevation: 1,150 Feet
Zoning: R-1 Residential

Figure 20: Bay Tree Reservoir (Source: Alternatives Analysis).

Figure 21 depicts a predicted coverage map of the High-Band LTE Coverage Provided by the Facility at Bay Tree Reservoir.

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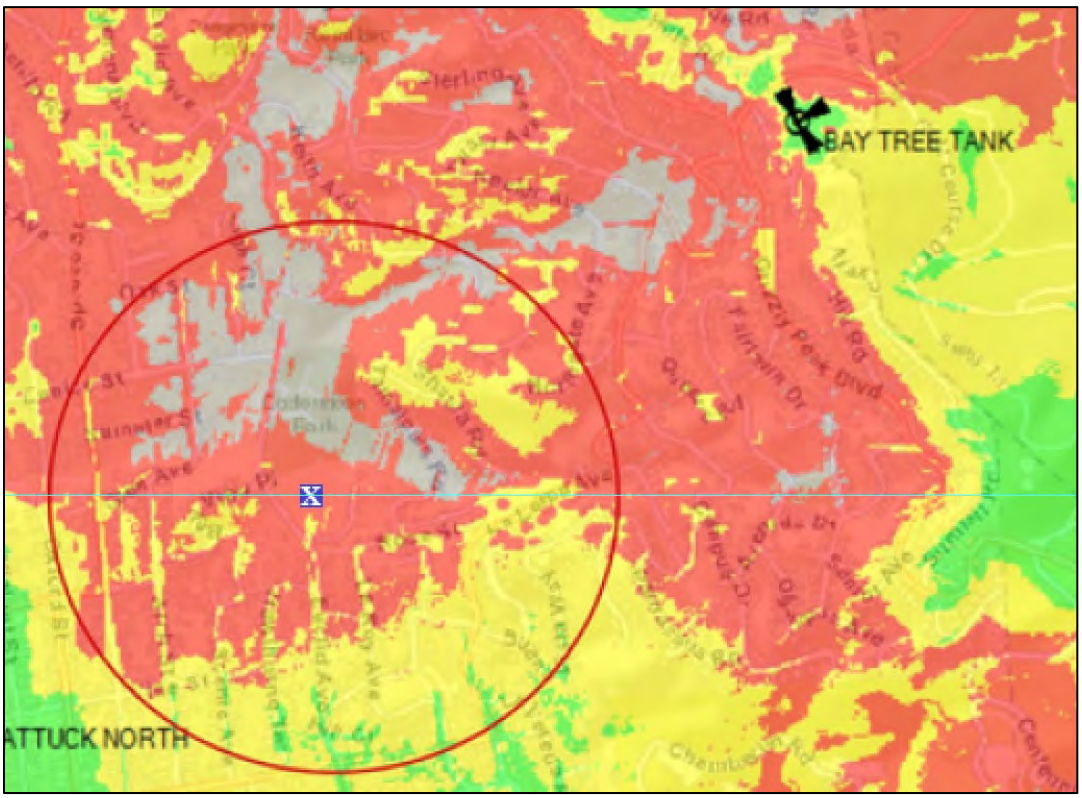

Figure 21: Emissions from Bay Tree Reservoir (Source: Alternatives Analysis; annotation by Dr. Kramer).

Verizon reports that its "…RF engineers determined that a facility at this location cannot serve the Significant Gap. As shown in the [] coverage map, a facility at this location of the same height as the Proposed Facility would not provide any new coverage to the identified gap area." TLF agrees. The Bay Tree Reservoir would afford no coverage whatsoever to the gap area claimed by Verizon. As such, this is not a viable alternative to the proposed Berryman Reservoir site.

A. Conclusion as to Alternative Sites

It is TLF's conclusion that none of the alternative sites identified by Verizon offer any realistic possibility to be a viable alternative to the proposed Berryman Reservoir site. Moreover, of the sites identified by Verizon, the Berryman Reservoir site is the location best suited to reducing Verizon's claimed gap, with the least visual intrusion, and the greatest distance from the site to the most nearby residential uses.

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IV. RADIO FREQUENCY JUSTIFICATION STATEMENT ANALYSIS

The City also requested that TLF review and comment on Verizon's March 5, 2020 Radio Frequency ("**RF**") statement ("**RF Justification Statement**"). As an initial observation, Verizon is presently proposing a 4G network upgrade, rather than a 5G network deployment.

The RF Justification Statement indicated that on December 17, 2019 Verizon conducted a drive test through the Berkeley streets in the claimed gap area to measure the then-existing 4G LTE signal strengths. See Figure 22 for the drive test results.

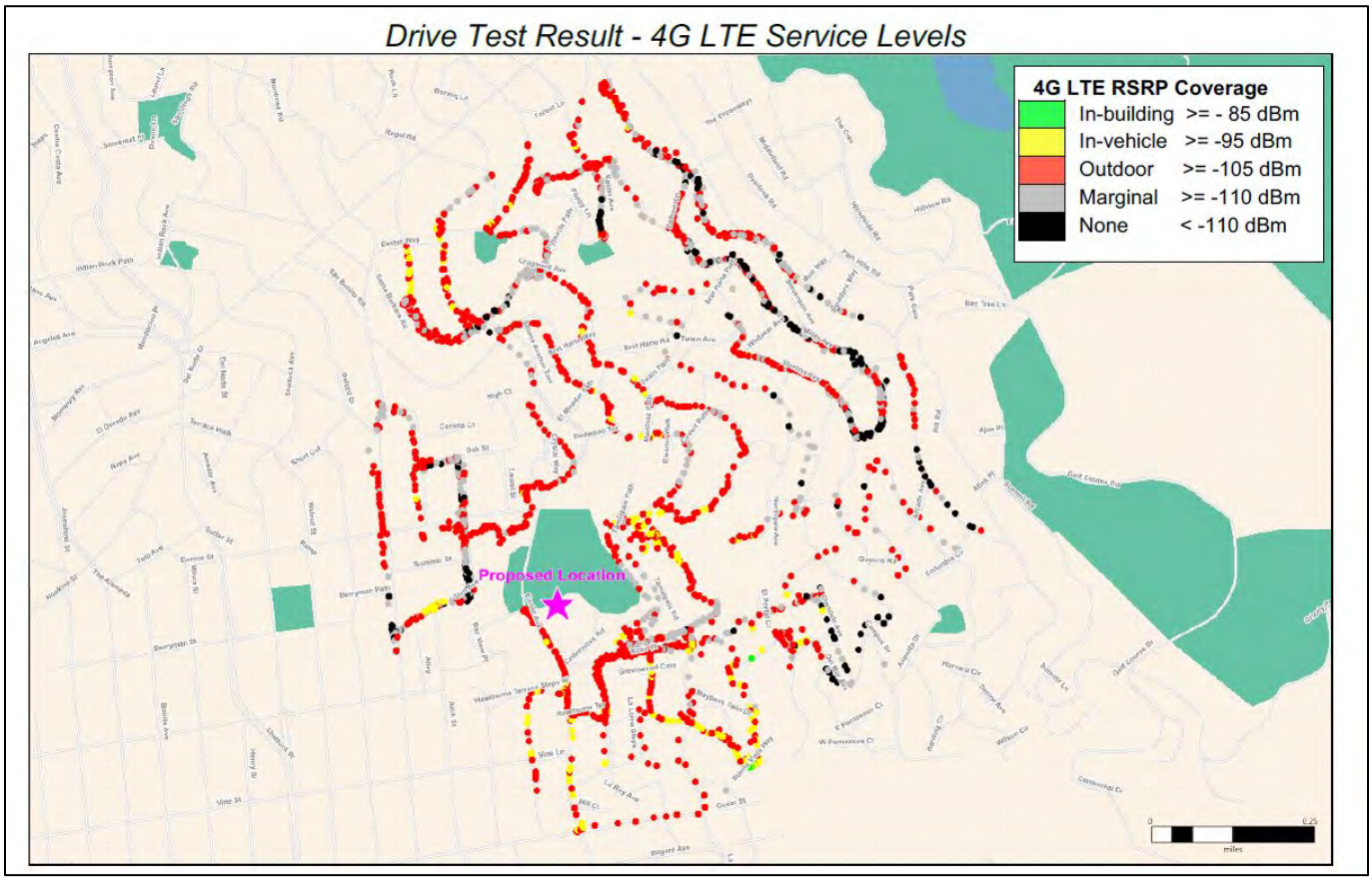

Figure 22: Drive Test Results (Source: RF Justification Statement).

The dot-plotted results shown in Figure 22 are a usual and customary means of expressing signal strength at a given location. The type of dot-map is produced by connecting a cellular receiver's signal strength measurements coupled with a GPS receiver's location data into a computer while driving on the street segments shown with dots. The data are later analyzed and printed to scale on a local street map, all as shown in Figure 22.

In additional to the signal strength gradients shown in Figure 22, Verizon supplied those objective level bands with written descriptions of what each color means to Verizon. The chart that Verizon provided to accomplish that task is show below in Figure 23:

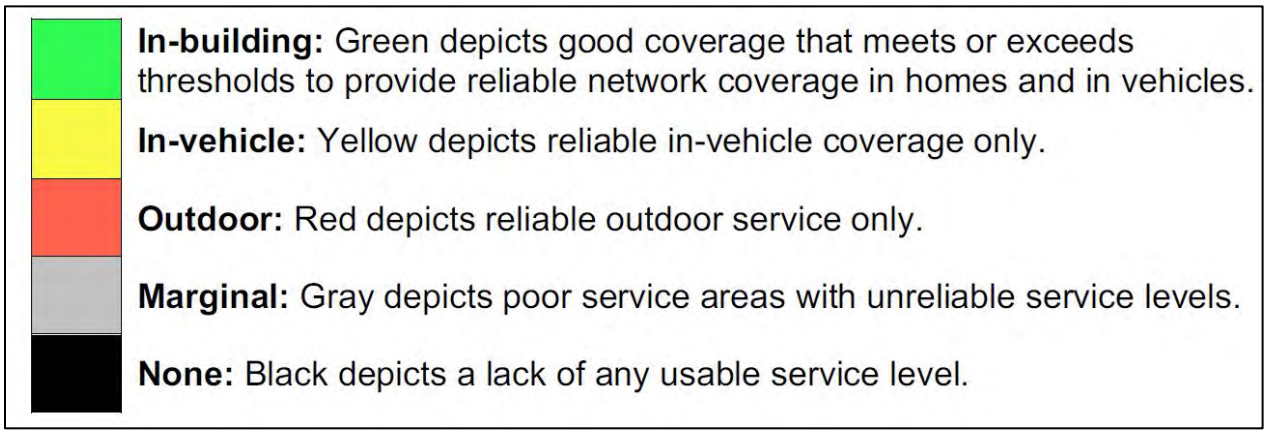

Figure 23: Coverage Thresholds (Source: RF Justification Statement).

Note that the levels and descriptions shown above are solely selected by Verizon. They are not set or otherwise regulated by the FCC or any State of California agency, and each wireless company is free to select its own levels and descriptions.

Verizon's RF Justification Statement indicated that it uses PCS and AWS to provide over 70% of its 4G LTE services throughout the City of Berkeley. See Figure 24 for the bands of services, frequencies, LTE bandwidth and the percentage of the total bandwidth within the area of the City of Berkeley.

Verizon Wireless Capacity by Band

Band	FCC Designation	Frequency	LTE Bandwidth	% of total bandwidth
700 MHz	UHF Low Band	700 MHz	22 MHz	19.64 %
850 MHz	Cellular	850 MHz	10 MHz	8.93 %
PCS	Personal Communications Service	1900 MHz	20 MHz	17.86 %
AWS	Advanced Wireless Service	2100 MHz	60 MHz	53.57 %

Figure 24: Percentage of total bandwidth in the area by band (Source: RF Justification Statement).

The RF Justification Statement provided the coverage maps of the existing high-band 4G LTE and the proposed high-band 4G LTE. See Figure 25.

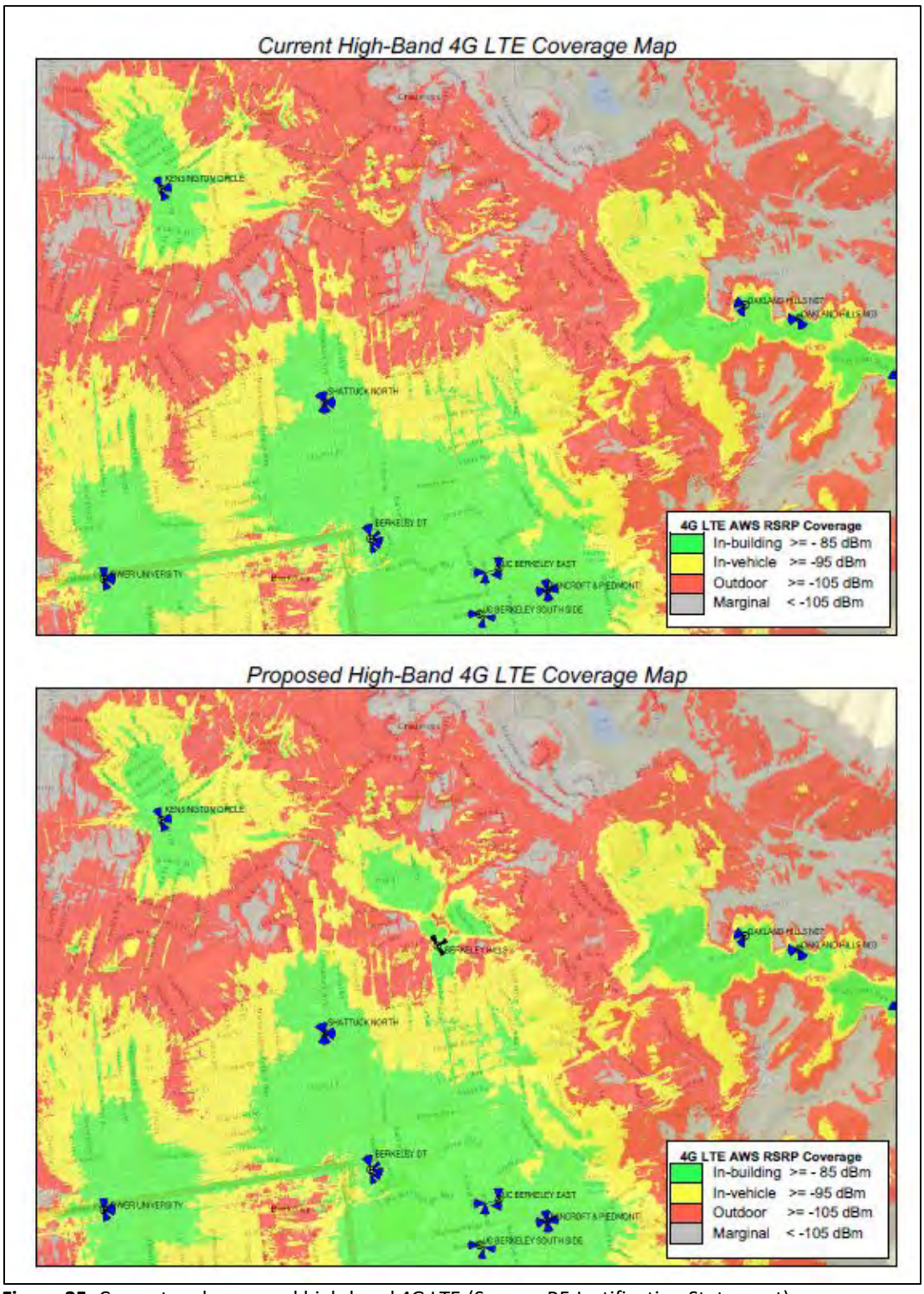

Figure 25: Current and proposed high-band 4G LTE (Source: RF Justification Statement).

As may be deduced by looking at the before-and-after maps jointly shown in Figure 25, many "in-building" coverage gaps will remain presuming that the proposed site is constructed. That is common for evolving wireless network.

The RF Justification Statement included a drive test map depicting different but relevant data. Specifically, the "Best Serving Facility" map, produced by the same drive test described above, lists which cell site was received at a particular location. See Figure 26.

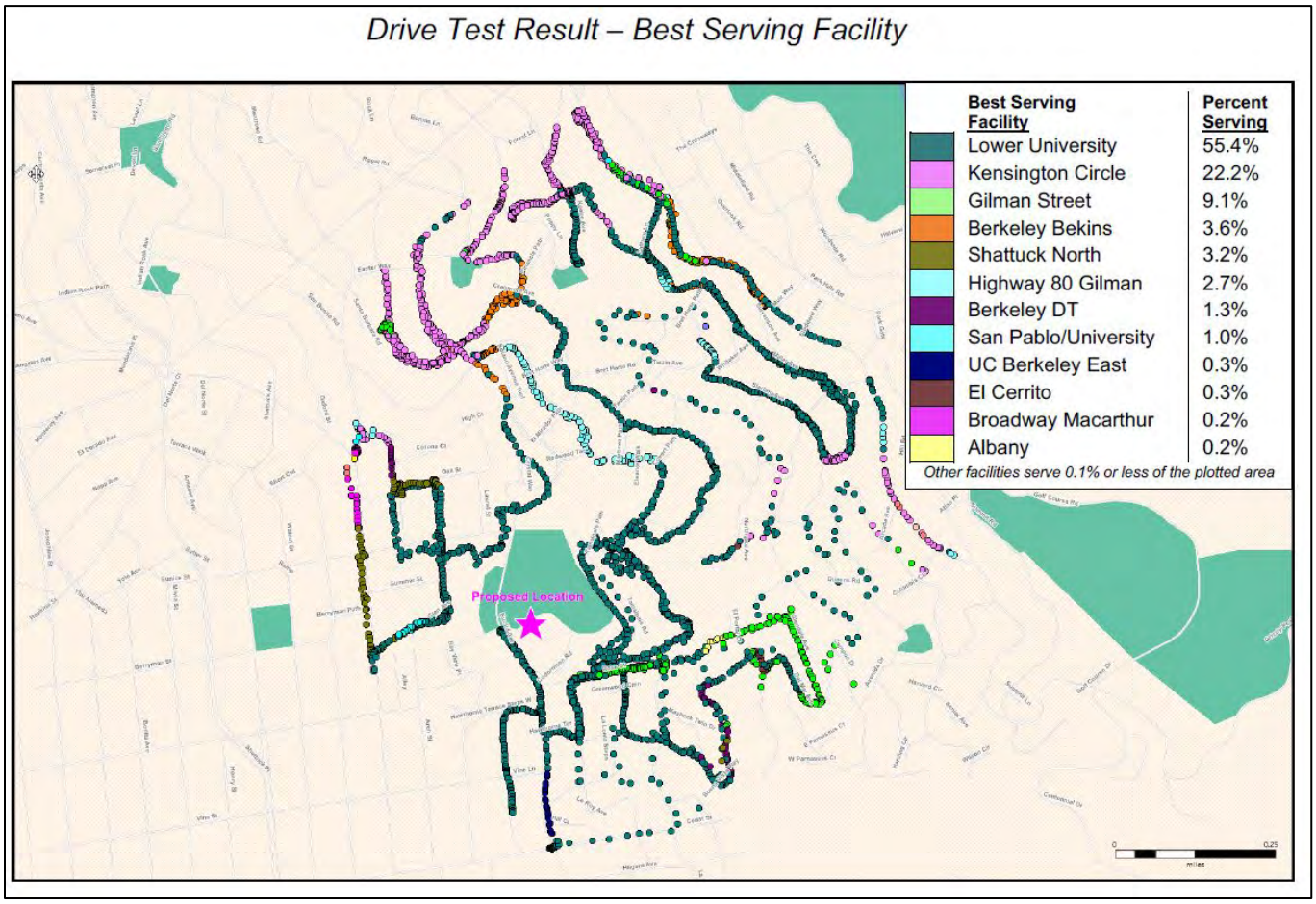

Figure 26: Drive test results for Macros services specific areas (Source: RF Justification Statement).

The information displayed in Figure 26 is helpful because it shows twelve cell sites are currently serving the claimed gap area measured by Verizon. Of the twelve serving cell sites, one site ("Lower University" serves over 50 percent of the claimed gap area. In total, the highest four sites serve over 90 percent of the claimed gap area, but in total this map also shows that cellular users in the area are likely to be "bounced" from one cell site to another to another, rather than connected to and staying with a single dominant area cell site signal source as would be the case

with the Berryman Reservoir site if built. Staying on a single dominant area cell site is preferred from a network management standpoint, and also promotes greater data throughput (which for this purpose equates to higher data transfer speeds).

Finally, Verizon's RF Justification Statement also includes a chart regarding the availability capacity at the Lower University site (the dominant site serving the claimed gap area). Verizon relies on the data in the chart to show that the site has reached its capacity limit. See Figure 27.

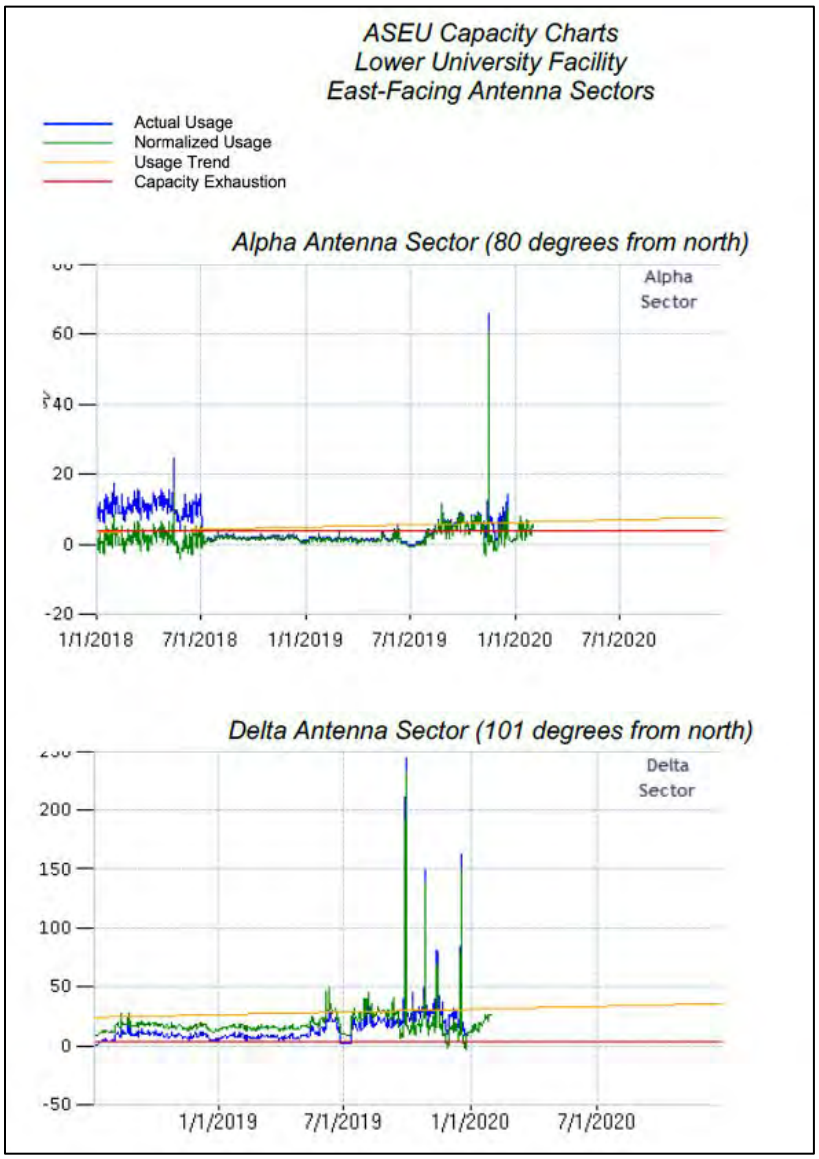

Figure 27: Capacity Gaps 80 degrees and 101 degrees (Source: RF Justification Statement).

Whether the Local University site has reached its capacity limit is a metric not regulated by the FCC; rather this type of capacity exhaustion determination is left to each of the wireless carriers.

In conclusion regarding Verizon's RF Justification Statement, there are areas within the claimed gap that have adequate Verizon signal strength to provide personal wireless services, but other areas that do not. Exacerbating this, the currently dominant serving cell site has, according to Verizon, reached its capacity limit. Failing to add another cell site to more centrally and closely serve the claimed gap area may lead to lower data throughput speeds and potentially some undisclosed degradation(s) on the ability of Verizon customers (and those customers of other carriers that roam on Verizon's network) to make and receive calls in the claimed gap area.

/TLF

Administrative Record
ZAB Appeal:
0 Euclid Avenue
(Berryman Reservoir)
Use Permit #ZP2018-0236

This attachment is on file and available for review at the City Clerk Department, or can be accessed from the City Council Website. Copies of the attachment are available upon request.

City Clerk Department
2180 Milvia Street
Berkeley, CA 94704
(510) 981-6900

or from:

The City of Berkeley, City Council's Web site
http://www.cityofberkeley.info/citycouncil/

NOTICE OF PUBLIC HEARING – BERKELEY CITY COUNCIL
BERKELEY UNIFIED SCHOOL DISTRICT BOARD ROOM,
1231 ADDISON STREET
PUBLIC PARTICIPATION BY REMOTE VIDEO ONLY

APPEAL OF ZAB DECISION: DENIAL OF USE PERMIT #ZP2018-0236, 0 EUCLID AVENUE (BERRYMAN RESERVOIR)

Notice is hereby given by the City Council of the City of Berkeley that on **TUESDAY, JULY 7, 2020** at **6:00 P.M.** a public hearing will be conducted to consider an appeal of the decision by the Zoning Adjustments Board to deny 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.

A copy of the agenda material for this hearing will be available on the City's website at www.CityofBerkeley.info as of **JUNE 30, 2020. Once posted, the agenda for this meeting will include a link for public participation using Zoom video technology.**

For further information, please contact Layal Nawfal, Land Use Planning, 510-781-7424 or Lnawfal@cityofberkeley.info

Written comments should be mailed or delivered directly to the City Clerk, 2180 Milvia Street, Berkeley, CA 94704, or council@cityofberkeley.info in order to ensure delivery to all Councilmembers and inclusion in the agenda packet.

Communications to the Berkeley City Council 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 the City Council, 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 City Clerk. 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 City Clerk at 981-6900 or clerk@cityofberkeley.info for further information.

_____
Mark Numainville, City Clerk

Mailed: June 23, 2020

NOTICE CONCERNING YOUR LEGAL RIGHTS*: If you object to a decision by the City Council to approve or deny(Code Civ. Proc. §1094.6(b)) or approve (Gov. Code 65009(c)(5) an appeal, the following requirements and restrictions apply: 1) Pursuant to Code of Civil Procedure Section 1094.6, no lawsuit challenging a City decision to deny or approve a Zoning Adjustments Board decision may be filed more than 90 days after the date the Notice of Decision of the action of the City Council is mailed. Any lawsuit not filed within that 90-day period will be barred. 2) In any lawsuit that may be filed against a City Council decision to approve or deny a Zoning Adjustments Board decision, the issues and evidence will be limited to those raised by you or someone else,*

orally or in writing, at a public hearing or prior to the close of the last public hearing on the project.

If you challenge the above 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 City of Berkeley at, or prior to, the public hearing. Background information concerning this proposal will be available at the City Clerk Department and posted on the City of Berkeley webpage prior to the public hearing.