Exhibit K

Letter from Applicant to Planning Commission

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March 12, 2021

VIA EMAIL AND FEDEX

Chairperson Kathy Bray
Commissioners David Criner,
Debra McKenzie, Peter Vang,
Brad Hardie and Monica Diaz
Planning Commission
City of Fresno
2600 Fresno Street
Fresno, California 93721

Re: Verizon Wireless Response to Appeal of Application P20-01589
Telecommunications Facility, 5747 North Palm Avenue
Planning Commission Agenda, March 17, 2021

Dear Chairperson Bray and Commissioners:

We write on behalf of Verizon Wireless to urge you to uphold the approval by the Planning and Development Director of a wireless facility camouflaged as a eucalyptus tree in a commercial zone (the "Approved Facility"). The District 2 Councilmember, Mike Karbassi, filed an appeal to provide an opportunity for the public to voice their opinion on the Approved Facility at a public meeting. However, the Councilmember did not raise any particular objection.

Verizon Wireless has provided substantial evidence to confirm that the Approved Facility satisfies all City requirements for approval of a wireless facility. The Approved Facility will fill a significant gap in Verizon Wireless service in the northwest Fresno area, providing reliable service for residents, visitors and emergency service personnel. As we explain, denial would violate the federal Telecommunications Act, because there is no substantial evidence to support a denial, and it would lead to a prohibition of service. We urge you to reject the appeal and uphold the Director's approval.

I. The Project

The Approved Facility has been thoughtfully designed to minimize any impact on the surrounding area. The District 2 Project Review Committee approved the proposal at its meeting of December 15, 2020.

Verizon Wireless proposes to conceal its panel antennas within an 80-foot freestanding facility camouflaged as a eucalyptus tree. The antennas will be concealed within faux foliage and branches, and branches will extend beyond and above the antennas, providing a realistic crown. Antennas will be covered with leaf socks for further concealment. The treepole and associated network equipment will be placed within an existing 600-square foot concrete block enclosure next to a commercial building, along with a standby generator to provide continued service during emergencies. The existing concrete block wall is 10 feet 8 inches high, but Verizon Wireless will remove the roof of the enclosure and replace it with fencing fabric. Utilities serving the Approved Facility will be routed underground.

Photosimulations of the Proposed Facility are attached as Exhibit A. A report by Dtech Communications, attached as Exhibit B, verifies that the Approved Facility will comply with Federal Communications Commission ("FCC") radio frequency exposure guidelines. A noise study by Bollard Acoustical Consultants, Inc., attached as Exhibit C, confirms that the Approved Facility will comply with the City's noise limits.

II. The Approved Facility Meets All Requirements for Approval.

As confirmed by the Director's decision, the Approved Facility satisfies all City requirements for approval. Wireless facilities are allowed in the CC–community commercial zone, and a camouflaged treepole is one of the design options that the Director may approve, consistent with the City's policy governing wireless facilities (the "Wireless Policy"). *Policy and Procedure No. 33, Wireless Telecommunication Facilities*, § 2(G). Its height is the minimum required to serve the significant gap in Verizon Wireless service in the vicinity, and to allow the faux branches above the antennas to provide camouflage. There will be additional space available on the treepole should another wireless carrier seek to collocate its antennas on the Approved Facility, which would minimize the number of facilities in the area.

The Approved Facility also satisfies the findings for a conditional use permit. Fresno Code of Ordinances § 15-5306. Of note, radio frequency exposure from the Approved Facility will be well under the FCC's public limits, and the facility will be secure within the cinder block enclosure, posing no adverse impact to public health safety, or welfare. In fact, the Approved Facility will provide an important public benefit through improved connectivity for residents, visitors and emergency response personnel. With its camouflaged design and placement next to a shopping mall in a commercial zone, well away from roadways, it poses no detriment to the surrounding improvements. In sum, the Approved Facility satisfies all City requirements for approval.

III. There is Substantial Evidence for Approval, and No Substantial Evidence To Support a Denial.

Denial of a wireless facility application must be based on substantial evidence. 47 U.S.C. §332(c)(7)(B)(iii). As interpreted by federal courts, this means that a local government's decision to deny a wireless facility application must be based on

requirements set forth in the local code and supported by evidence in the record. *See Metro PCS, Inc. v. City and County of San Francisco,* 400 F.3d 715, 725 (9th Cir. 2005) (denial of application must be "authorized by applicable local regulations and supported by a reasonable amount of evidence.") While a local government may regulate the placement of wireless facilities based on aesthetics, mere generalized concerns or opinions about aesthetics or compatibility with a neighborhood do not constitute substantial evidence upon which a local government can deny a permit. *See City of Rancho Palos Verdes v. Abrams*, 101 Cal. App. 4th 367, 381 (2002).

As set forth above, Verizon Wireless has provided substantial evidence to show that the Approved Facility complies with all City requirements for approval. Among other evidence, architectural plans confirm compliance with City design standards, and the photosimulations show the camouflaged treepole design of Verizon Wireless's facility. Reports by independent consultants confirm that radio frequency exposure will comply with FCC guidelines, and noise will comply with City regulations.

In his brief appeal letter, Councilmember Karbassi did not raise any objection to the Approved Facility, but expressed his wish for the public to have an opportunity to voice their opinion at a public meeting. As a result, Verizon Wireless must reserve its due process right to challenge the Councilmember's appeal in the event of a denial, based on previously-unidentified grounds.

Prior to the Director's decision, a public notice of the application was sent to nearby property owners within 1,000 feet of the subject property. The residential properties west of the Approved Facility are within unincorporated Fresno County. Several residents submitted letters for the Director's consideration, raising concerns over radio frequency emissions, property values, and aesthetics.

The federal Telecommunications Act bars the City from considering the environmental effects of radio frequency emissions because the Approved Facility will comply with the FCC's radio frequency exposure guidelines. *See* 47 U.S.C. § 332(c)(7)(B)(iv). According to the Dtech Communications radio frequency exposure report, the maximum calculated exposure for anyone at ground level or on an adjacent roof will be 0.5 percent—or 200 times below—the FCC's general population limit.

Speculation over impact on property values is generally a proxy for concern over radio frequency emissions, and similarly preempted by the Telecommunications Act. Federal courts have barred efforts to circumvent preemption of health concerns through proxy concerns such as property values. *See, e.g., AT&T Wireless Servs. of Cal. LLC v. City of Carlsbad,* 308 F. Supp. 2d 1148, 1159 (S.D. Cal. 2003) ("Thus, direct or indirect concerns over the health effects of RF emissions may not serve as substantial evidence to support the denial of an application"); *Calif. RSA No. 4, d/b/a Verizon Wireless v. Madera County,* 332 F. Supp. 2d 1291, 1311 (E.D. Cal. 2003).

The residents' personal concerns over aesthetics of the Approved Facility do not uncover any conflict with the Wireless Policy. As noted, the City may require an

alternate design for a wireless facility such as a faux tree, and Verizon Wireless designed the Approved Facility to be fully camouflaged as a eucalyptus. Wireless Policy § 2(G). While residents noted that there are two existing wireless towers in the vicinity, they are 240 and 350 yards away from Approved Facility, far beyond the minimum facility separation of 100 yards required by the Wireless Policy. Wireless Policy § 2(I).

In sum, there is no evidence—let alone the substantial evidence required by federal law—to support a denial of the Approved Facility. In contrast, Verizon Wireless has provided ample evidence to support approval. The appeal must be rejected.

IV. Denial Would Constitute an Unlawful Prohibition of Service.

A local government's denial of a wireless facility permit violates the "effective prohibition" clause of the federal Telecommunications Act if the wireless provider can show two things: (1) that it has a "significant gap" in service; and (2) that the proposed facility is the "least intrusive means," in relation to the land use values embodied in local regulations, to address the gap. *See T-Mobile USA, Inc. v. City of Anacortes,* 572 F.3d 987 (9th Cir. 2009).

If a provider proves both elements, the local government *must* approve the facility, even if there is substantial evidence to deny the permit under local land use provisions (which there is not in this case). This is because the provider has met the requirements for federal preemption; i.e., denial of the permit would "have the effect of prohibiting the provision of personal wireless services." 47 U.S.C. § 332(c)(7)(B)(1)(ii); *T-Mobile v. Anacortes,* 572 F.3d at 999. For wireless carriers to establish a prohibition case, federal law does not require that a proposed facility be the "only" alternative, but rather that no feasible alternative is less intrusive. *See Metro PCS, Inc. v. San Francisco,* 400 F.3d at 734-35.

A. Verizon Wireless Has Demonstrated a Significant Gap in Service.

As confirmed in the *Statement of Verizon Wireless RF Engineer Walt Kohls*, attached as Exhibit D, Verizon Wireless has identified a significant gap in its LTE service in the northwest Fresno area. There is a broad gap in in-building LTE coverage in the area, which includes residential neighborhoods as well as commercial developments. Reliable in-vehicle coverage is lacking along major roadways and local streets in the gap area. Further, accelerated 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.

B. The Approved Facility is the Least Intrusive Means To Fill the Significant Gap in Service.

To address the significant gap, Verizon Wireless evaluated the local commercial area and seven specific alternatives, including collocation with existing facilities, as

described in the Alternatives Analysis attached as Exhibit E. Verizon Wireless discounted alternatives that are infeasible or do not have a willing landlord. The Alternatives Analysis confirms that the Approved Facility is the least intrusive feasible means to provide wireless service to the significant gap.

In sum, Verizon Wireless has identified a significant gap in service, and has shown that the Approved Facility is the least intrusive means to address it, based on the values expressed in City regulations. Under these circumstances, Verizon Wireless has established that denial of the Approved Facility would constitute an unlawful prohibition of service.

Conclusion

Verizon Wireless has worked diligently to identify the ideal location and design for a camouflaged wireless facility to serve a significant gap in service in the northwest Fresno area. The Approved Facility complies with the City's Wireless Policy and meets the findings for approval of a conditional use permit. With this letter, Verizon Wireless has provided the *Statement of Verizon Wireless Radio Frequency Design Engineer* and an Alternatives Analysis, which confirm a significant gap in service, and that the Approved Facility is the least intrusive means to fill that gap. Together, these documents provide the evidence required under federal law to confirm that approval is necessary to avoid a prohibition of service.

Bringing improved Verizon Wireless service to the area is essential for reliable communications with emergency services providers, and to the health, safety, and welfare of residents and visitors. We strongly encourage you to affirm the approval by the District 2 Project Review Committee and Planning Director, and reject the appeal.

Very truly yours,

Paul B. Albritton

cc: Douglas Sloan, Esq.
Thomas Veatch

Schedule of Exhibits

Exhibit A: Photosimulations
Exhibit B: Radio Frequency Exposure Report by Dtech Communications
Exhibit C: Noise Study by Bollard Acoustical Consultants, Inc.
Exhibit D: Statement of Verizon Wireless Radio Frequency Design Engineer Walt Kohls
Exhibit E: Alternatives Analysis

Exhibit A

Existing

Proposed

AdvanceSim
Photo Simulation Solutions
Contact (925) 202-8507

view from W. Morris Avenue looking east at site

verizon

269392 Sierra & N. Palm
5747 N. Pal, Avenue, Fresno, CA
Photosims Produced on 10-15-2019

Existing

Proposed

AdvanceSim
Photo Simulation Solutions
Contact (925) 202-8507

view from W. Bullard Avenue looking south at site

verizon

269392 Sierra & N. Palm
5747 N. Pal, Avenue, Fresno, CA
Photosims Produced on 10-15-2019

Existing

Proposed

AdvanceSim
Photo Simulation Solutions
Contact (925) 202-8507

view from N. Palm Avenue looking southwest at site

verizon

269392 Sierra & N. Palm
5747 N. Pal, Avenue, Fresno, CA
Photosims Produced on 10-15-2019

Existing

Proposed

AdvanceSim
Photo Simulation Solutions
Contact (925) 202-8507

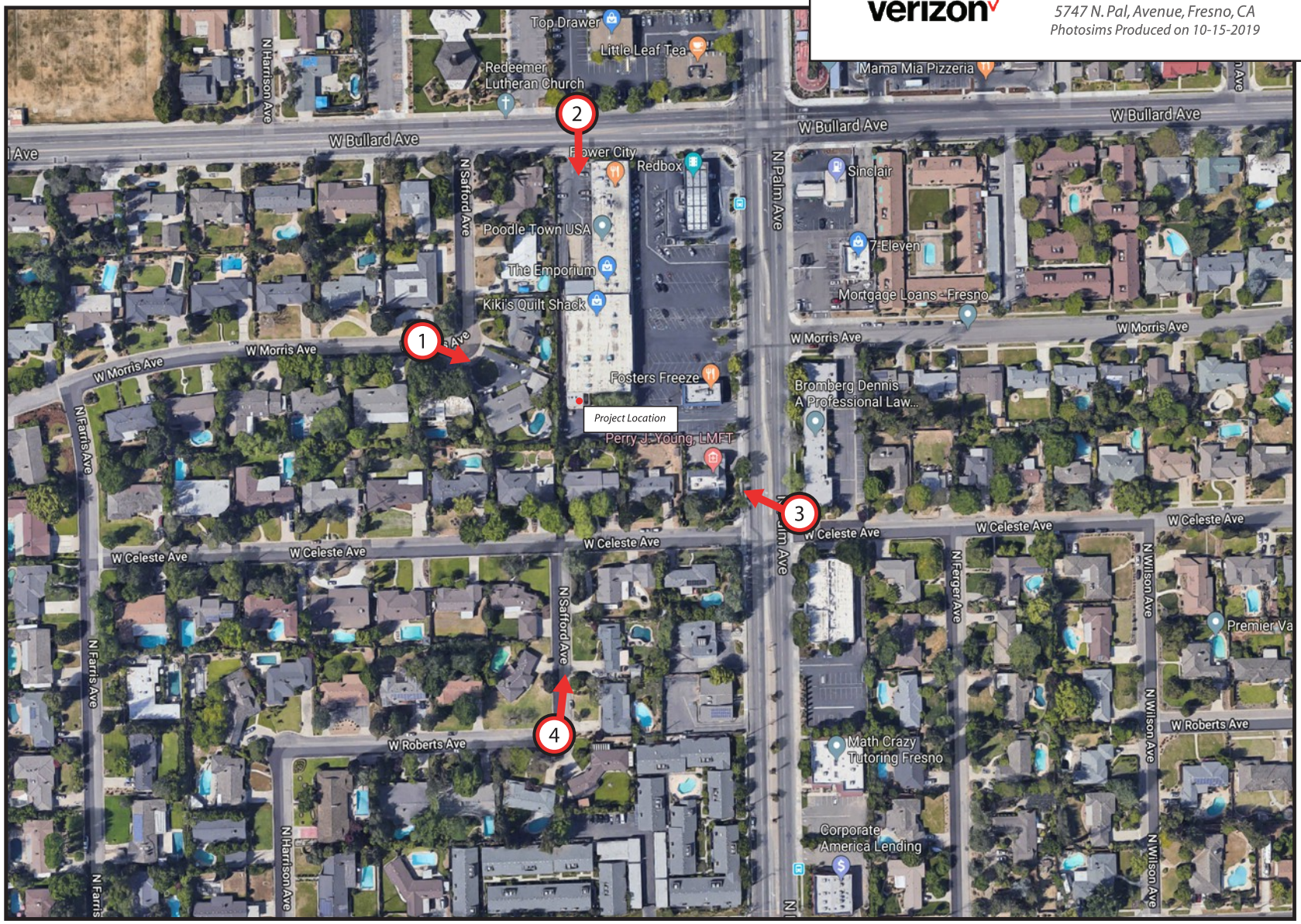
view from W. Roberts Street looking north at site

verizon

269392 Sierra & N. Palm
5747 N. Pal, Avenue, Fresno, CA
Photosims Produced on 10-15-2019

verizon

269392 Sierra & N. Palm
5747 N. Pal, Avenue, Fresno, CA
Photosims Produced on 10-15-2019



AdvanceSim
Photo Simulation Solutions
Contact (925) 202-8507

Shot Point Map

Dtech communications

Exhibit B

YOUR RF SAFETY PARTNER

RADIO FREQUENCY ELECTROMAGNETIC FIELDS EXPOSURE REPORT

Prepared for Verizon

c/o Complete Wireless Consulting

Site Name: Sierra & N Palm
Site Type: Mono-Eucalyptus

Located at:

5747 N Palm Avenue
Fresno, CA 93704
Latitude: 36.8217 / Longitude: -119.8094

Report Date: 1/22/2020
Report By: Christopher Stollar, P.E.

Based on FCC Rules and Regulations, Verizon is compliant.

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY

Dtech Communications, LLC ("Dtech") has been retained by Complete Wireless Consulting, contractors to Verizon, to determine whether its wireless communications facility complies with the Federal Communications Commission ("FCC") Radio Frequency ("RF") Safety Guidelines. This report contains a computer-simulated analysis of the Electromagnetic Fields ("EMF") exposure resulting from the facility. The analysis also includes assessment of existing wireless carriers on site, where information is provided. The table below summarizes the results at a glance:

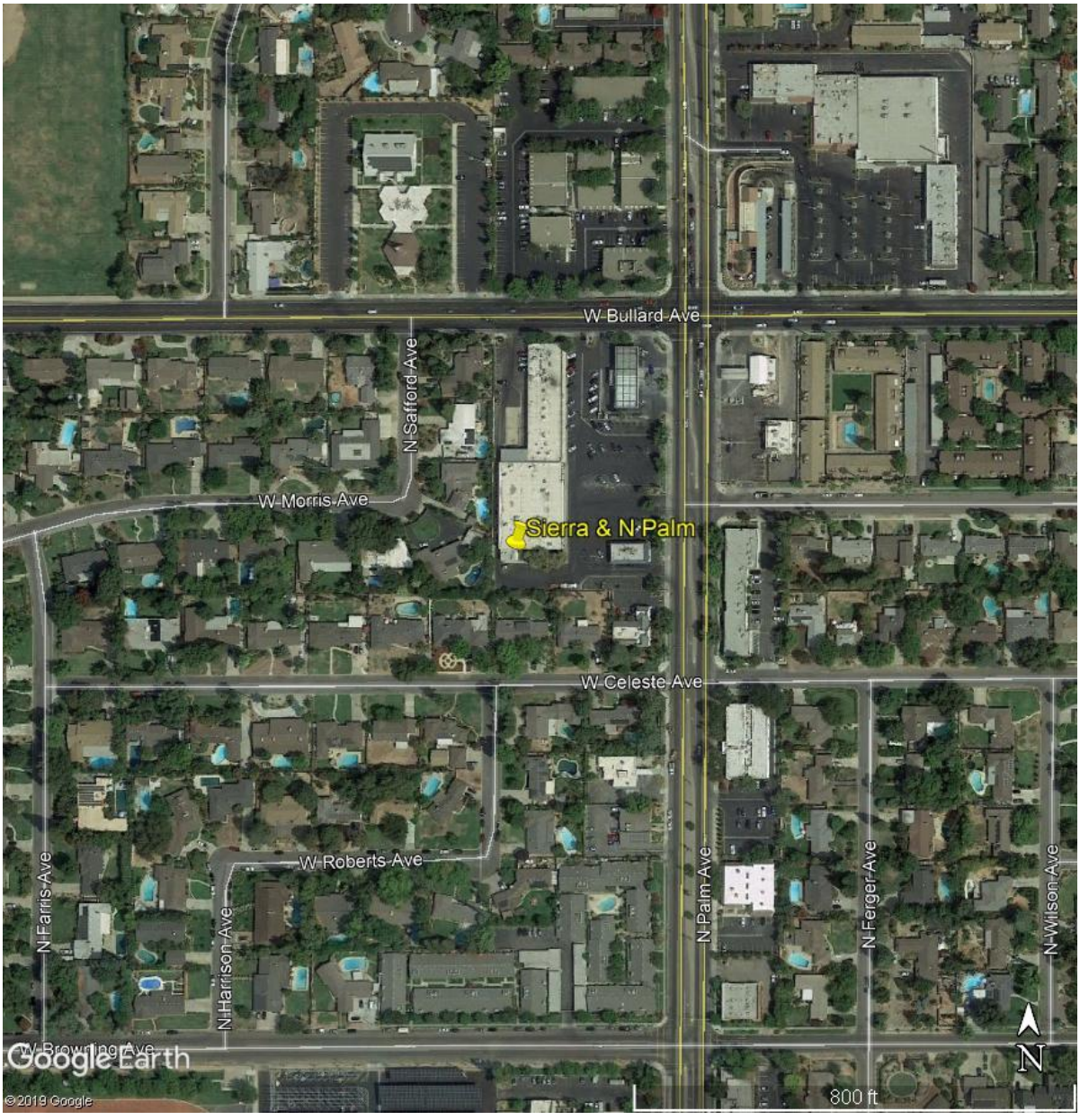
Table 1: EMF Summary

Verizon	Summary
Access Type	Gate
Access to antennas locked	Optional
RF Sign(s) @ access point(s)	None
RF Sign(s) @ antennas	None
Barrier(s) @ sectors	NA
Max EMF level for Verizon on Ground	0.5% General Population
Max EMF level for Verizon on Adjacent Roof	0.5% General Population (0.1% Occupational)
Min Clearance Distance from Face of Verizon's Antennas	42 Feet

2.0 SITE DESCRIPTION

The wireless telecommunication facility is located on the ground. The facility consists of 1 wireless carrier(s) or operator(s): Verizon. The antennas are typically grouped into sectors pointing in different directions to achieve the desired areas of coverage. Verizon's antennas are mounted on a mono-eucalyptus tower and connected to the equipment via coaxial cables.

2.1 Site Map



2.2 Antenna Inventory

Technical specifications in the table below are provided by our clients and/or gathered from physical field surveys where applicable and/or possible. Conservative estimates are used where information is not provided or available.

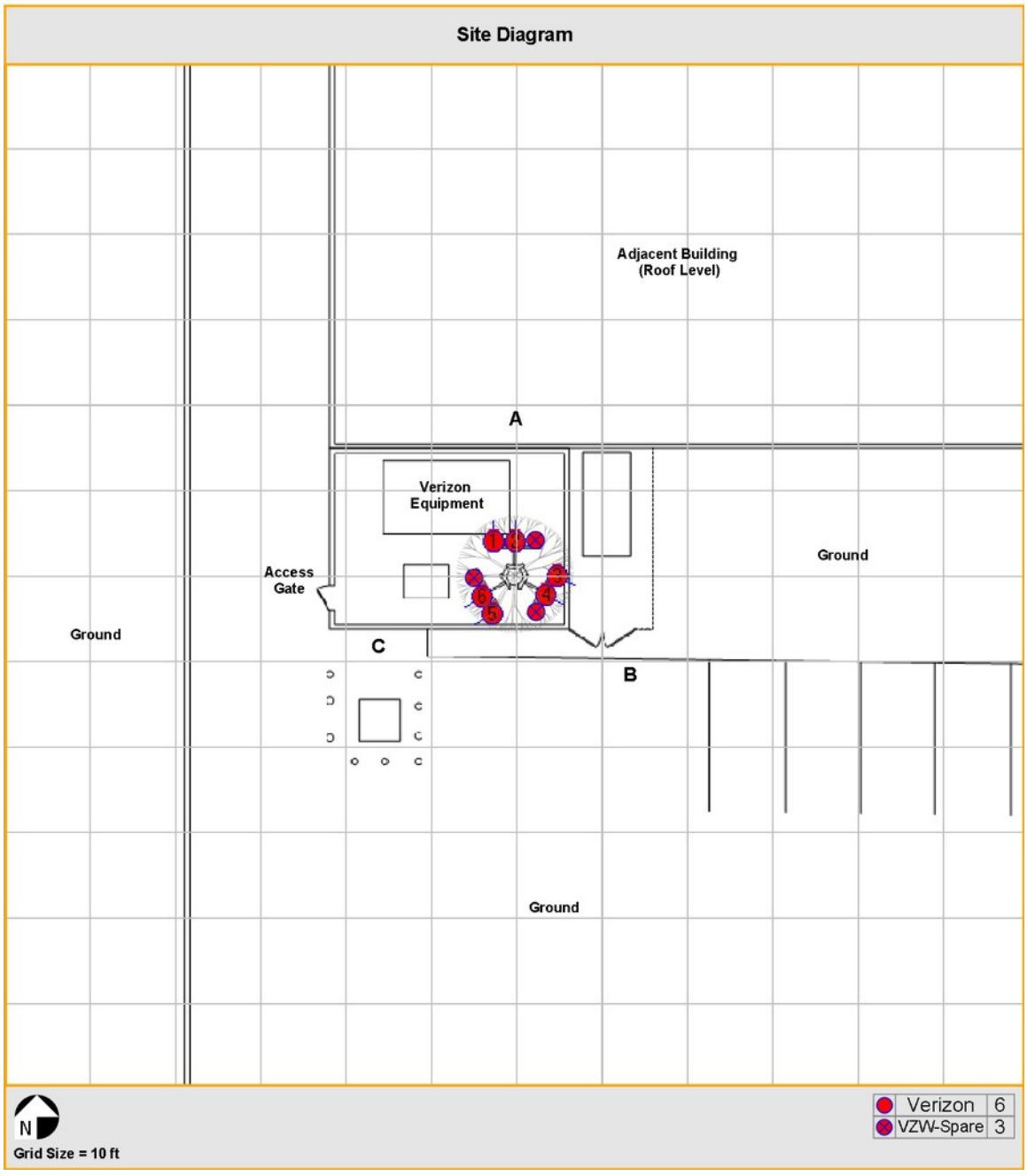
Table 2: Site Technical Specifications

Antenna ID	Operator	Antenna Mfg	Antenna Model	Type	Frequency (MHz)	Orientation (°T)	Horizontal BWdth (°)	Antenna Aperture (ft)	Antenna Gain (dBd)	Total Input Power (Watts)	Total ERP (Watts)	Bottom Tip Height Above Ground (Z) (ft)	Bottom Tip Height Above Adj Roof (Z) (ft)	Bottom Tip Height Antenna Level (Z) (ft)
A1	Verizon	Commscope	NHH-65C-R2B	Panel	746	0	65	8.0	13.2	71	1479	64.0	44.0	0.0
A1	Verizon	Commscope	NHH-65C-R2B	Panel	880	0	62	8.0	13.5	71	1596	64.0	44.0	0.0
A1	Verizon	Commscope	NHH-65C-R2B	Panel	2120	0	62	8.0	15.8	142	5409	64.0	44.0	0.0
A2	Verizon	Commscope	NHH-65C-R2B	Panel	746	0	65	8.0	13.2	71	1479	64.0	44.0	0.0
A2	Verizon	Commscope	NHH-65C-R2B	Panel	880	0	62	8.0	13.5	71	1596	64.0	44.0	0.0
A2	Verizon	Commscope	NHH-65C-R2B	Panel	1965	0	66	8.0	15.2	142	4657	64.0	44.0	0.0
B1	Verizon	Commscope	NHH-65C-R2B	Panel	746	120	65	8.0	13.2	71	1479	64.0	44.0	0.0
B1	Verizon	Commscope	NHH-65C-R2B	Panel	880	120	62	8.0	13.5	71	1596	64.0	44.0	0.0
B1	Verizon	Commscope	NHH-65C-R2B	Panel	2120	120	62	8.0	15.8	142	5409	64.0	44.0	0.0
B2	Verizon	Commscope	NHH-65C-R2B	Panel	746	120	65	8.0	13.2	71	1479	64.0	44.0	0.0
B2	Verizon	Commscope	NHH-65C-R2B	Panel	880	120	62	8.0	13.5	71	1596	64.0	44.0	0.0
B2	Verizon	Commscope	NHH-65C-R2B	Panel	1965	120	66	8.0	15.2	142	4657	64.0	44.0	0.0
C1	Verizon	Commscope	NHH-65C-R2B	Panel	746	240	65	8.0	13.2	71	1479	64.0	44.0	0.0
C1	Verizon	Commscope	NHH-65C-R2B	Panel	880	240	62	8.0	13.5	71	1596	64.0	44.0	0.0
C1	Verizon	Commscope	NHH-65C-R2B	Panel	2120	240	62	8.0	15.8	142	5409	64.0	44.0	0.0
C2	Verizon	Commscope	NHH-65C-R2B	Panel	746	240	65	8.0	13.2	71	1479	64.0	44.0	0.0
C2	Verizon	Commscope	NHH-65C-R2B	Panel	880	240	62	8.0	13.5	71	1596	64.0	44.0	0.0
C2	Verizon	Commscope	NHH-65C-R2B	Panel	1965	240	66	8.0	15.2	142	4657	64.0	44.0	0.0

3.0 ANALYSIS

3.1 Site Diagram

Figure 1: Site Diagram - Plan (bird's eye) view



3.2 Emission Predictions

Figure 2: Plan (bird's eye) view map of results compared to FCC's General Population MPE (Maximum Permissible Exposure) Limits. White represents areas where exposure levels are calculated to be at or below 5%; Green- between 5% & 100% (below MPE limits); blue, yellow & red – greater than 100% (exceeds MPE limits). Individuals can safely occupy areas in white and green for indefinite amount of time; whereas areas in blue, yellow & red must be restricted to RF trained personnel who has been made fully aware of potential for exposure, has control and knows how to reduce their exposure with the use of personal protection equipment or has the ability to power down the transmitters.

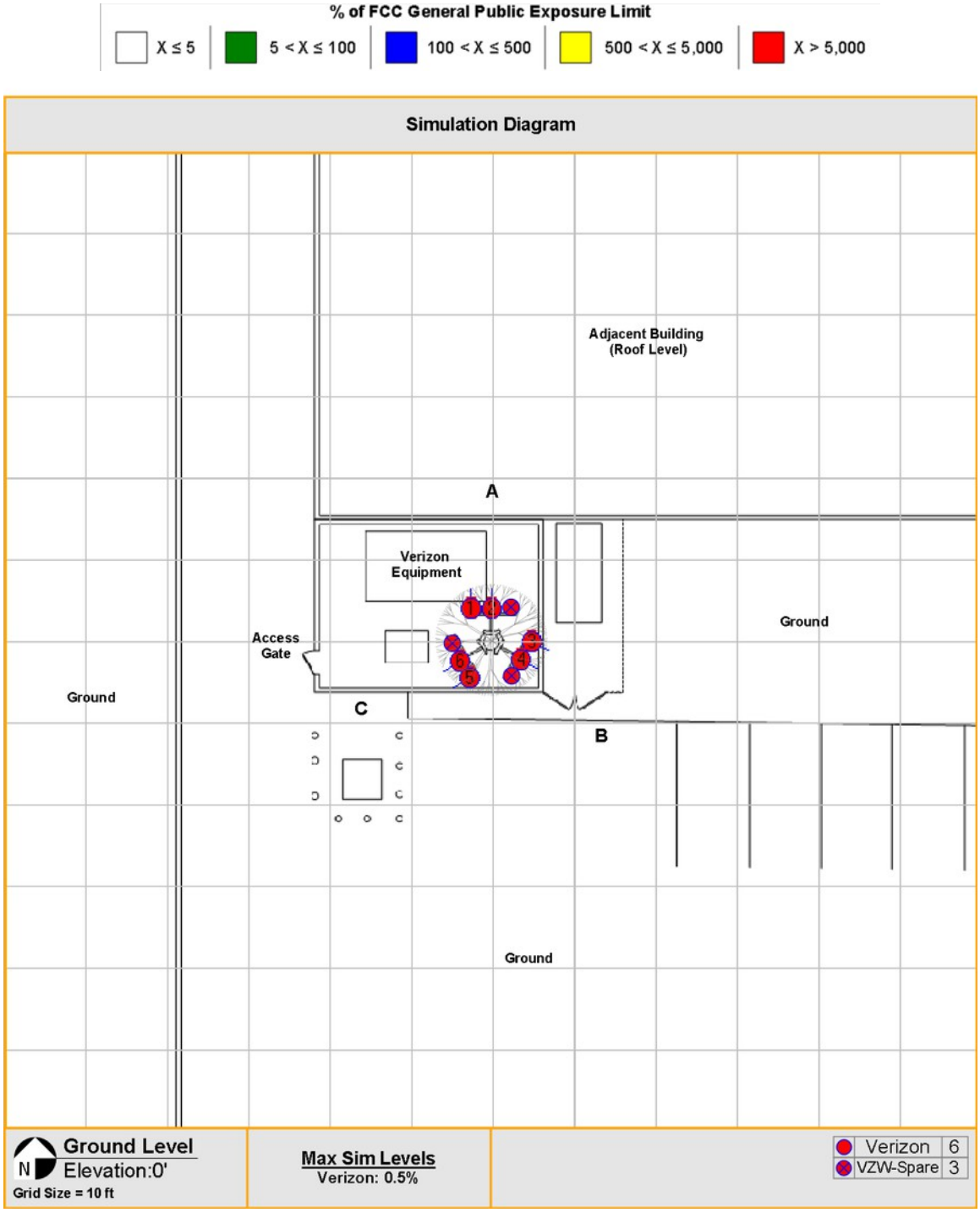


Figure 3: Plan (bird's eye) view map of results compared to FCC's General Population MPE (Maximum Permissible Exposure) Limits. White represents areas where exposure levels are calculated to be at or below 5%; Green- between 5% & 100% (below MPE limits); blue, yellow & red – greater than 100% (exceeds MPE limits). Individuals can safely occupy areas in white and green for indefinite amount of time; whereas areas in blue, yellow & red must be restricted to RF trained personnel who has been made fully aware of potential for exposure, has control and knows how to reduce their exposure with the use of personal protection equipment or has the ability to power down the transmitters.

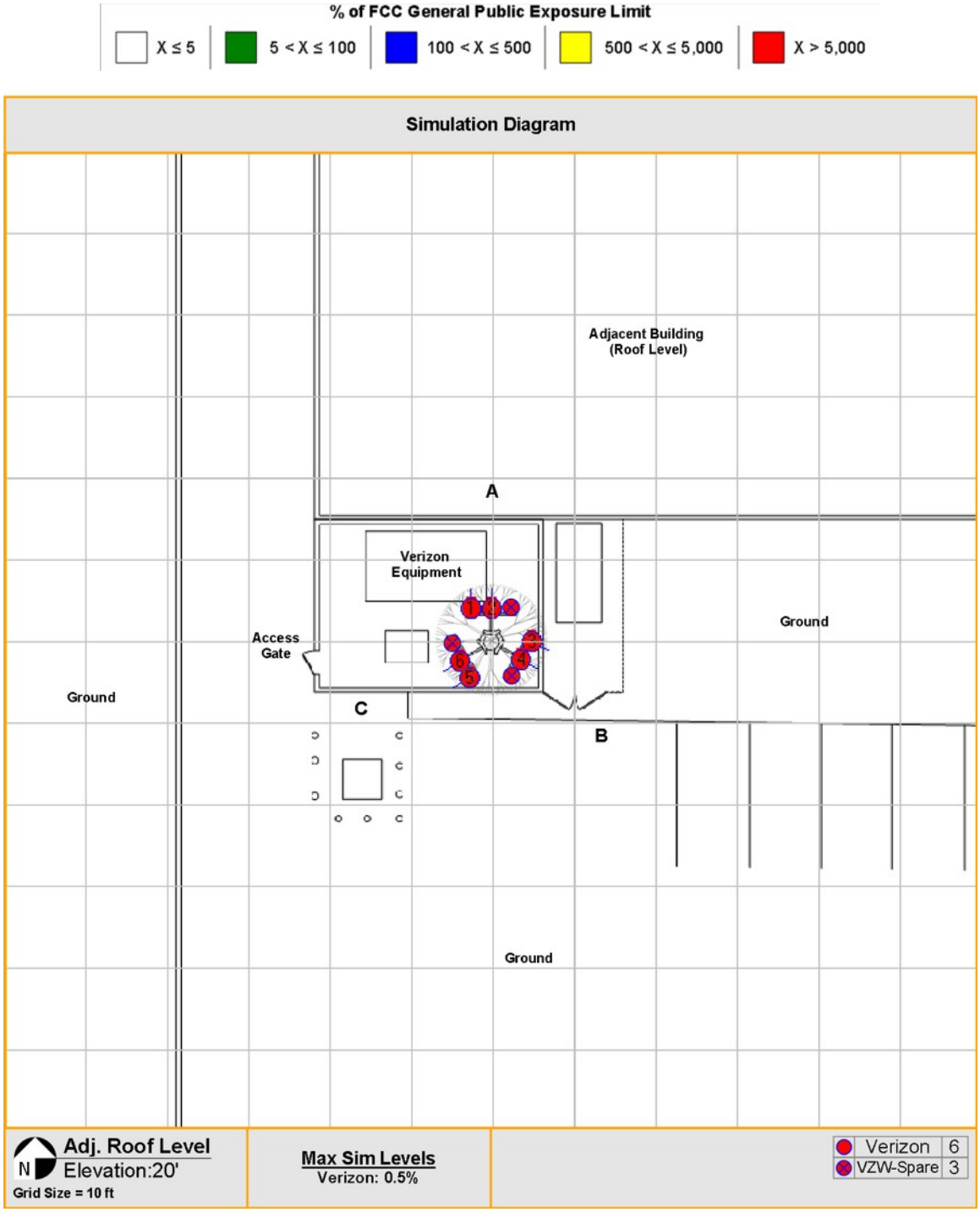
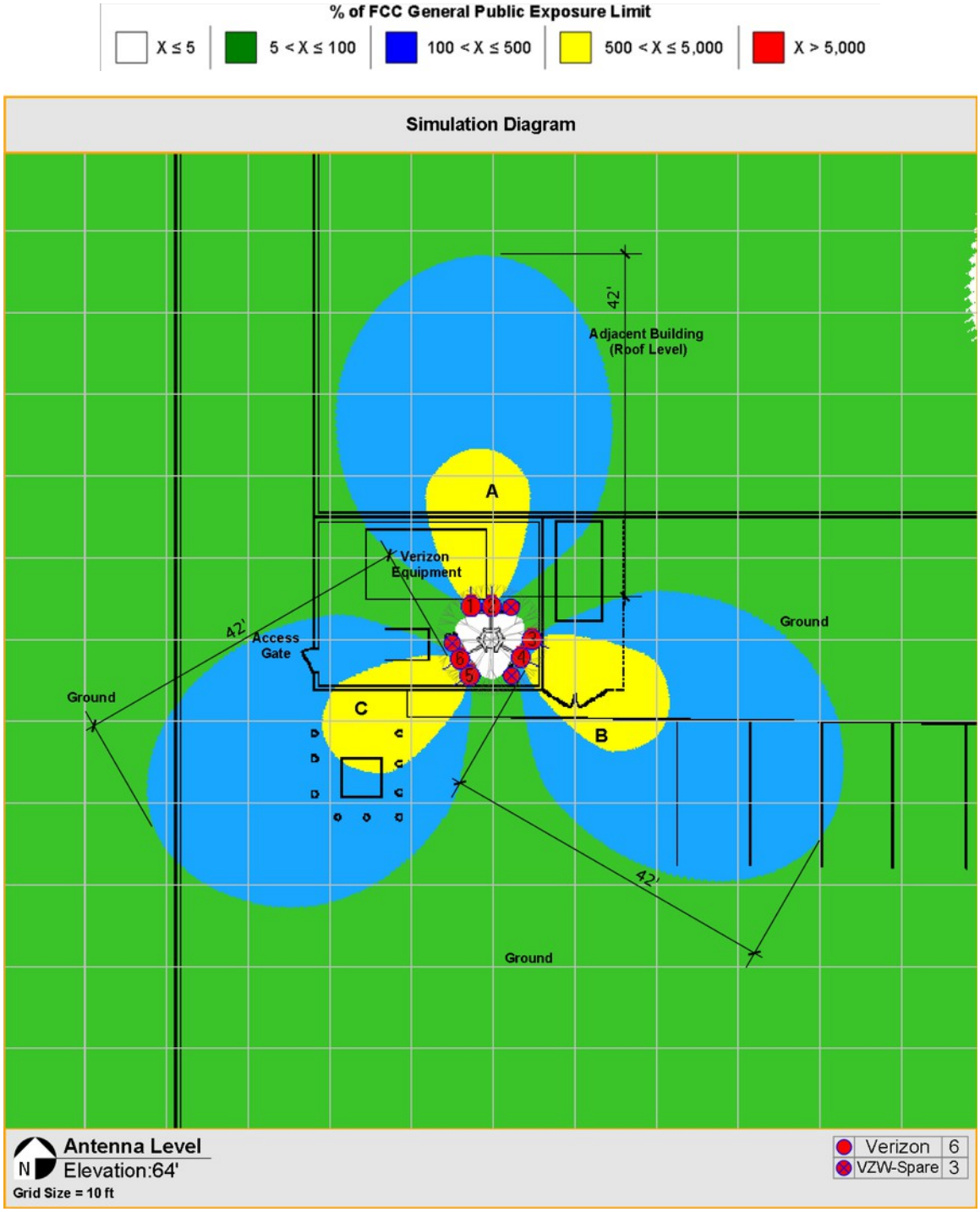


Figure 4: Plan (bird's eye) view map of results compared to FCC's General Population MPE (Maximum Permissible Exposure) Limits. White represents areas where exposure levels are calculated to be at or below 5%; Green- between 5% & 100% (below MPE limits); blue, yellow & red – greater than 100% (exceeds MPE limits). Individuals can safely occupy areas in white and green for indefinite amount of time; whereas areas in blue, yellow & red must be restricted to RF trained personnel who has been made fully aware of potential for exposure, has control and knows how to reduce their exposure with the use of personal protection equipment or has the ability to power down the transmitters.



4.0 CONCLUSION

4.1 Results

For a person standing in accessible areas on the ground and adjacent roof, calculations for Verizon's site resulted in exposure levels below the FCC's most stringent General Population MPE Limits (see figure 2 - 3).

At antenna elevation, the highest calculated exposure level is above the FCC's General Population MPE Limits near the Verizon antennas (see figure 4). The overexposed (yellow and blue) areas extend 42-feet from the front face of the Verizon antennas. From the provided drawings, there are no other buildings or surrounding structures at antenna elevation within 42-feet of the Verizon antennas. Beyond 42-feet, exposure levels are predicted to be below the FCC's most stringent General Population MPE Limits.

The antennas are mounted on a tall tower and therefore not accessible by the general public. It is presumed that Verizon employees and contractors are aware of the transmitting antennas and will take appropriate precautions when working near them.

4.2 Recommendation(s)

Further actions are not required.

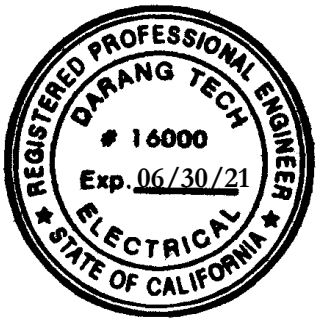
4.3 Statement of Compliance

Based on the above results, analysis and recommendation(s), it is the undersigned's professional opinion that Verizon's site is compliant with the FCC's RF Safety Guidelines.

4.4 Engineer Certification

This report has been prepared by or under the direction of the following Registered Professional Engineer: Darang Tech, holding California registration number 16000. I have reviewed this report and believe it to be both true and accurate to the best of my knowledge.

Darang Tech, P.E.



Appendix A: Background

Dtech uses the FCC's guidelines described in detail in Office of Engineering & Technology, Bulletin No. 65 ("OET-65") "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields". The table below summarizes the current Maximum Permissible Exposure ("MPE") safety limits classified into two groups: General population and Occupational.

Table 3: FCC MPE Limits (from OET-65)

Frequency (Mhz)	General Population/ Uncontrolled MPE (mW/cm^2)	Averaging Time (minutes)	Occupational/ Controlled MPE (mW/cm^2)	Averaging Time (minutes)
30 - 300	0.2	30	1.0	6
300 - 1500	Frequency (Mhz)/1500 (0.2 – 1.0)	30	Frequency (Mhz)/300 (1.0 – 5.0)	6
1500 - 100,000	1.0	30	5.0	6

General population/uncontrolled limits apply in situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment, and may not be fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public always fall under this category when exposure is not employment-related.

Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment, and those persons have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits, as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

It is important to understand that the FCC guidelines specify *exposure* limits not *emission* limits. For a transmitting facility to be out of compliance with the FCC's RF safety guidelines an area or areas where levels exceed the MPE limits must, first of all, be in some way *accessible* to the public or to workers. When accessibility to an area where excessive levels is appropriately restricted, the facility or operation can certify that it complies with the FCC requirements.

Appendix B: Measurement and/or Computer Simulation Methods

Spatial averaging measurement technique is used. An area between 2 and 6 feet, approximately the size of an average human, is scanned in single passes from top to bottom in multiple planes. When possible, measurements were made at very close proximity to the antennas and inside the main beam where most of the energy is emitted. The spatial averaged values were recorded.

Dtech uses an industry standard power density prediction computer Model[1] to assess the worse-case, cumulative EMF impact of the surrounding areas of the subject site. The Model does not take into account losses due to buildings. Its methodologies are conservative enough to account for typical down-tilts deployed in wireless communications. In addition, the analysis is performed at 100% duty cycle-all transmitters are active at all times and transmitting at maximum power. For purposes of a cumulative study, nearby transmitters are included where possible. The result is a surrounding area map color-coded to percentages of the applicable FCC's MPE Limits. A result higher than 100% exceeds the Limits.

Appendix C: Limitations

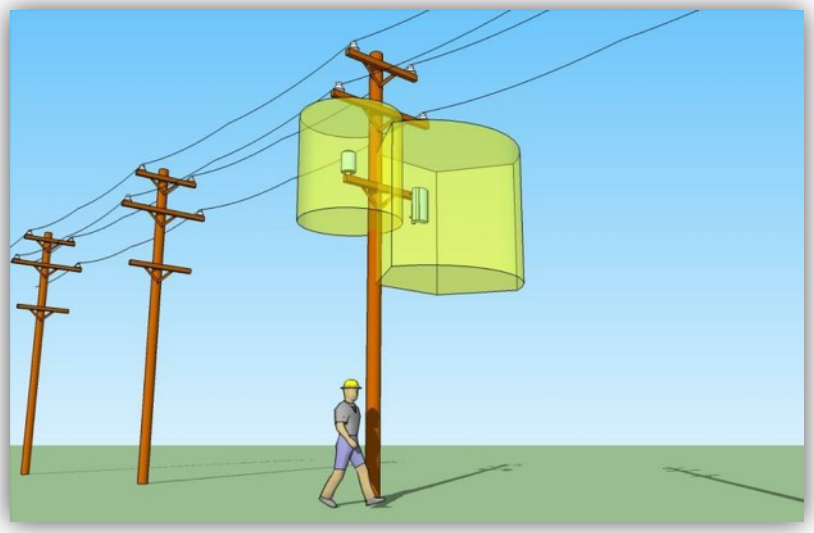
The conclusions in this document rendered by Dtech are based solely upon the information collected during the site survey and/or furnished by our Client which Dtech believes is accurate and correct. Dtech, however, has no responsibility should such Client provided information prove to be inaccurate or incorrect. Third party specification estimates used for cumulative computer simulation purposes, where applicable, are based on common industry practices and our best interpretation of available information. Data, results and conclusions in this document are valid as of its date. However, as mobile technologies continuously change, these data, results and conclusions may also be at variance with such future changes. Dtech has no responsibility to update its survey or report to account for such future technology changes. This document was prepared for the use of our Client only and cannot be utilized by any third party for any purpose without Dtech's written consent. Dtech shall have no liability for any unauthorized use of this document and any such unauthorized user shall defend, indemnify and hold Dtech and its owners, directors, officers and employees harmless from and against any liability, claim, demand, loss or expense (including reasonable attorney's fees) arising from such unauthorized use.

[1] Dtech uses Roofmaster(tm) 2015 Version 15.7.2.18 per Verizon's direction.

Appendix D: AntennaView®

Dtech Communications offers a unique, online tool (AntennaView®) to train, identify and inform individuals of site-specific HotZones – areas that may potentially exceed the FCC's Safety Limits. AntennaView® is an online, interactive training tool that will educate nontechnical people in about ten minutes. It is a site-specific, RF safety training program that requires the end user to sign an online agreement thereby limiting the liability to the landlord and carriers. Some of the advantages include:

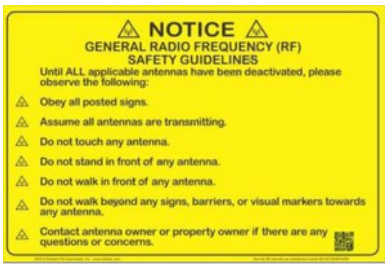
- Virtual walk-through in 3-D with corresponding photographs
- Site-specific, interactive, simple to understand
- Delivers pertinent information i.e. HotZones (areas that may potentially exceed FCC safety limits), site owners and contact numbers.
- User online agreement = accountability



We invite you to take a quick tour at www.AntennaView.com and see how easy to understand and informative AntennaView® is.

Under Article 47 CFR § 1.1307(b), the FCC & OSHA mandates wireless operators/facility owners to have an RF survey completed including a safety plan and training to ensure that their tenants, employees and contractors who work in or around RF sites are aware of the potential risks posed by RF radiation. Most cell sites are located on building rooftops where HVAC contractors, window washers, painters, etc. routinely work and generally do not know what antennas even look like. Dtech Communications can help with ongoing FCC/OSHA compliance and provide practical training that is easy to understand by anyone regardless of their technical background.

Appendix E: Verizon's RF Advisory Signs



GUIDELINES Sign

NOC INFORMATION Sign

NOTICE Sign

CAUTION Sign

WARNING Sign

Exhibit C

Environmental Noise Assessment

Sierra & N. Palm Verizon Cellular Facility

Fresno, California

BAC Job # 2019-210

Prepared For:

Complete Wireless Consulting

Attn: Kim Le
2009 V Street
Sacramento, CA 95818

Prepared By:

Bollard Acoustical Consultants, Inc.

Dario Gotchet, Consultant

October 10, 2019

BOLLARD
Acoustical Consultants

Introduction

The Sierra & N. Palm Verizon Wireless Unmanned Telecommunications Facility Project (project) proposes the installation of cellular equipment within a lease area located at 5747 North Palm Avenue in Fresno, California (APN: 416-083-26). The outdoor equipment cabinets and an emergency standby diesel generator have been identified as the primary noise sources associated with the project. The project site location and equipment layout plan are shown on Figures 1 and 2, respectively. The studied site drawings are dated September 10, 2019.

Bollard Acoustical Consultants, Inc. has been contracted by Complete Wireless Consulting, Inc. to complete an environmental noise assessment regarding the proposed project cellular equipment operations. Specifically, the following assessment addresses daily noise production and exposure associated with operation of the project outdoor equipment cabinets and emergency generator.

Please refer to Appendix A for definitions of acoustical terminology used in this report. Appendix B illustrates common noise levels associated with various sources.

Criteria for Acceptable Noise Exposure

2025 Fresno General Plan

The Noise Element (Chapter 4) of the 2025 Fresno General Plan provides regulations regarding noise levels produced by stationary (non-transportation) noise sources, such as those proposed by the project. The primary objective of the Noise Element is to prescribe policies that lead to the preservation and enhancement of the quality of life for the residents of City of Fresno by securing and maintaining an environment free from hazardous and annoying noise. Those standards have been reproduced and are summarized below in Table 1.

Table 1
Maximum Allowable Noise Exposure for Stationary Noise Sources[1]

Noise Level Descriptor	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly L_{eq}, dB	50	45
Maximum Level (L_{max}), dB	70	60

[1] As determined at the outdoor activity areas of noise-sensitive uses.
Source: City of Fresno General Plan, Noise Element, Policy H-1-k – Table 9

Project Noise Generation

As discussed previously, there are two project noise sources which are considered in this evaluation; the equipment cabinet cooling systems and the emergency generator. The evaluation of potential noise impacts associated with the operation of each noise source is evaluated separately as follows:

Legend

- Proposed Verizon Cellular Facility Lease Area
- Parcel Boundaries (Approximate)
- Existing 6-Foot Tall CMU Wall

N

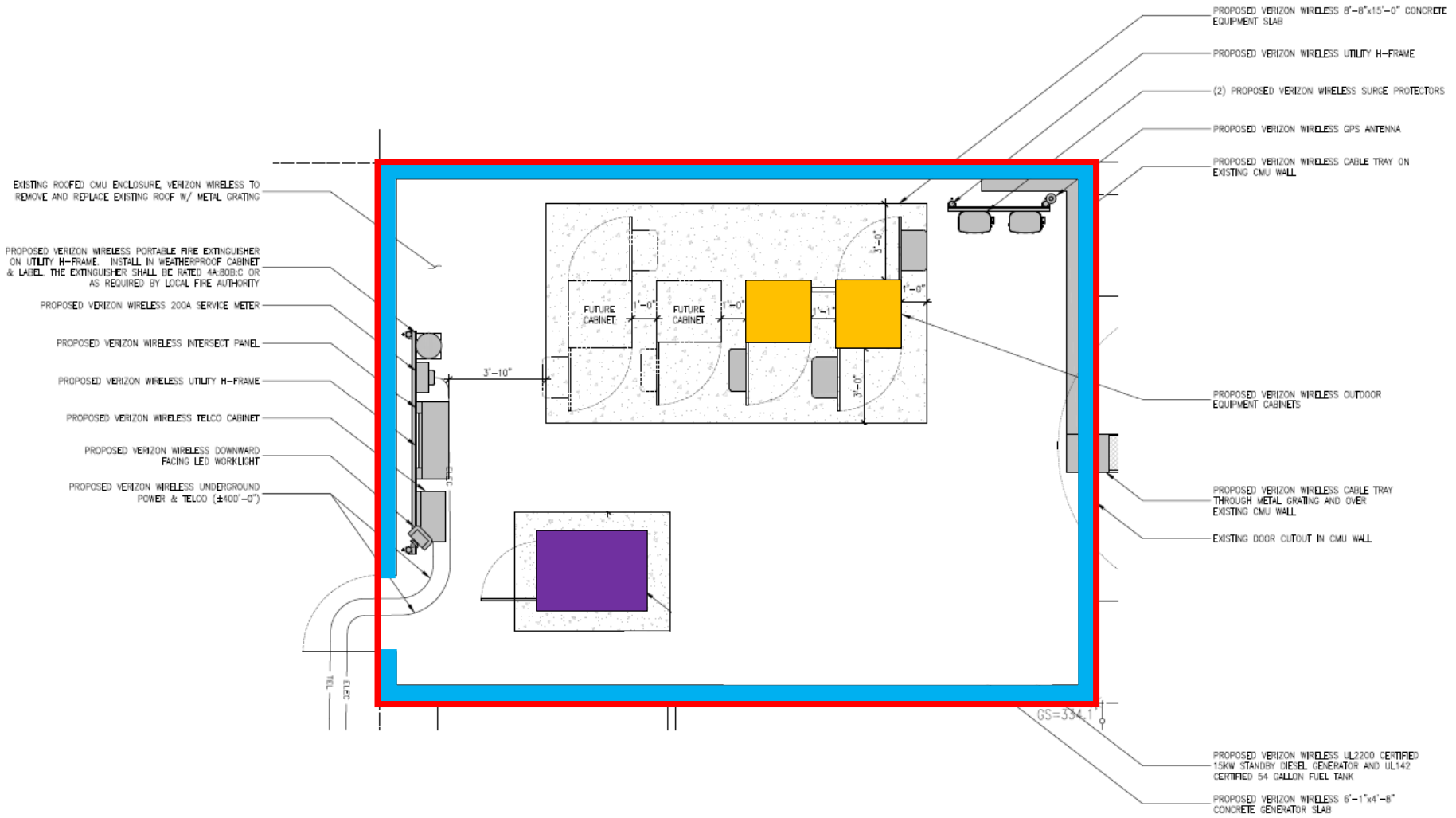
Scale (Feet)

0 50 100

Sierra & N. Palm
Verizon Cellular Facility
Fresno, California

Proposed Cellular Facility Lease Area
& Nearest Noise-Sensitive Uses

Figure 1



Legend

- Proposed Verizon Cellular Facility Lease Area
- Proposed Equipment Cabinets
- Proposed Emergency Generator
- Existing 11-Foot Tall CMU Wall

N

Scale (Feet)

0 5 10

Sierra & N. Palm
Verizon Cellular Facility
Fresno, California

Proposed Project Equipment Layout Plan

Figure 2

Equipment Cabinet Noise Sources and Reference Noise Levels

The project proposes the installation of two (2) equipment cabinets within the equipment lease area illustrated on Figure 1. Based on the equipment layout plan, the cabinets assumed for the project are as follows: one (1) Charles Industries 48V Power Plant and one (1) miscellaneous cabinet cooled by a McLean Model T-20 air conditioner. The cabinets and their respective reference noise levels are provided in Table 2. The manufacturer's noise level data specification sheets for the proposed equipment cabinets are provided as Appendix C.

Table 2
Reference Noise Level Data of Proposed Equipment Cabinets

Equipment	Number of Cabinets	Reference Noise Level, dB	Reference Distance, feet
Charles Industries 48V Power Plant	1	60	5
McLean T-20	1	66	5
Note: Manufacturer specification sheets provided as Appendix C.			

Generator Noise Source and Reference Noise Level

The project also proposes the installation of an emergency standby diesel generator within the lease area to maintain cellular service during emergency power outages. Based on the project site drawings, the generator assumed for the project is Generac Industrial Power Systems Model SDC20 (20 kW) emergency diesel standby generator. It is assumed that the proposed generator will be equipped with the Level 2 Acoustic Enclosure resulting in a reference noise level of 65 dB at a distance of 23 feet. The manufacturer's noise level data specification sheet for the proposed generator and acoustical enclosure is provided as Appendix D.

The generator which is proposed at this site would only operate during emergencies (power outages) and brief daytime periods for periodic maintenance/lubrication. According to the project applicant, testing of the generator would occur twice per month on weekdays only, during daytime hours, for a duration of approximately 15 minutes. The emergency generator would not operate at night, except during power outages. It is expected that nighttime operation of the project emergency generator would be exempt from the city's exterior noise exposure criteria due to the need for continuous cellular service provided by the project equipment.

Predicted Facility Noise Levels at Nearest Noise-Sensitive Uses

According to the City of Fresno Public Viewer, the project parcel is commercially zoned. However, the adjacent parcels to the south and west and zoned residential, which would be considered noise-sensitive. Pursuant to footnote 1 of Table 1, the Fresno County General Plan noise level limits are to be applied at the outdoor activity areas of noise-sensitive uses.

The proposed cellular equipment maintains various distances from the outdoor activity areas (backyards) of the adjacent residences. Those distances were scaled using the provided site plans dated September 10, 2019. Assuming standard spherical spreading loss (-6 dB per doubling of distance), project-equipment noise exposure at the outdoor activity areas of the nearest residences was calculated and the results of those calculations are presented in Table 3.

The results presented in Table 3 take into consideration the shielding provided by an existing 11-foot tall CMU wall along the perimeter of the cellular equipment compound, as indicated in Figure 2. Barrier insertion loss calculation worksheets are provided as Appendix E.

Table 3
Summary of Project-Related Noise Exposure at Nearest Noise-Sensitive Uses

APN[1]	Distance from Equipment to Outdoor Activity Area on Parcel (feet)[2]		Predicted Equipment Noise Levels (dBA)[3]	
	Cabinets	Generator	Cabinets, L_{eq}	Generator, L_{max}
416-083-07	45	35	37	49
416-083-15	90	78	32	43
416-083-14	80	72	32	42
416-083-13	115	118	29	40

[1] Parcel boundaries are illustrated on Figure 1.
[2] Distances were scaled from the proposed equipment to the outdoor activity areas of the nearest residences using the provided project site drawings and the City of Fresno Public Viewer measurement tool. Locations of the outdoor activity areas were conservatively assumed to be 10 feet into the backyard of the parcels.
[3] Predicted equipment noise levels take into consideration the shielding provided by an existing 11-foot tall CMU noise barrier along the perimeter of the equipment compound, as indicated in Figure 2. Barrier insertion loss calculation worksheets are provided as Appendix E.

Because the proposed equipment cabinets could potentially be in operation continuously during nighttime hours, the operation of the equipment cabinets would be subject to the Fresno General Plan *nighttime* noise level standard of 45 dB L_{eq} (Table 1). As shown in Table 3, the predicted equipment cabinet noise levels of 29-37 dB L_{eq} at the outdoor activity areas (backyards) of the nearest noise-sensitive uses (residences) would satisfy the General Plan 45 dB L_{eq} nighttime noise level standard. In addition, it is expected that an existing 6-foot tall CMU wall along the property boundaries of the adjacent parcels would further reduce equipment noise levels at those locations (existing wall shown in Figure 1). As a result, no further consideration of equipment cabinet noise mitigation measures would be warranted for the project.

Because the project emergency generator would only operate during daytime hours for brief periods required for testing and maintenance, and because generator noise is assumed to be exempt during emergency operations, noise from the generator would be subject to the Fresno General Plan *daytime* noise level standard of 70 dB L_{max} (Table 1). As shown in Table 3, the predicted generator noise levels of 40-49 dB L_{max} at the outdoor activity areas (backyards) of the nearest noise-sensitive uses (residences) would satisfy the General Plan 70 dB L_{max} daytime noise level standard by a wide margin. As mentioned above, it is expected that the existing 6-foot tall CMU wall along the property boundaries of the adjacent parcels would further reduce equipment noise levels at those locations. As a result, no further consideration of emergency generator noise mitigation measures would be warranted for the project.

Conclusions

Based on the equipment noise level data and analyses presented above, project-related equipment noise exposure is expected to satisfy the applicable City of Fresno General Plan noise exposure limits at the closest noise-sensitive uses. As a result, no additional noise mitigation measures would be warranted for this project.

This concludes our environmental noise assessment for the proposed Sierra & N. Palm Verizon Cellular Facility in Fresno, California. Please contact BAC at (916) 663-0500 or dariog@bacnoise.com with any questions or requests for additional information.

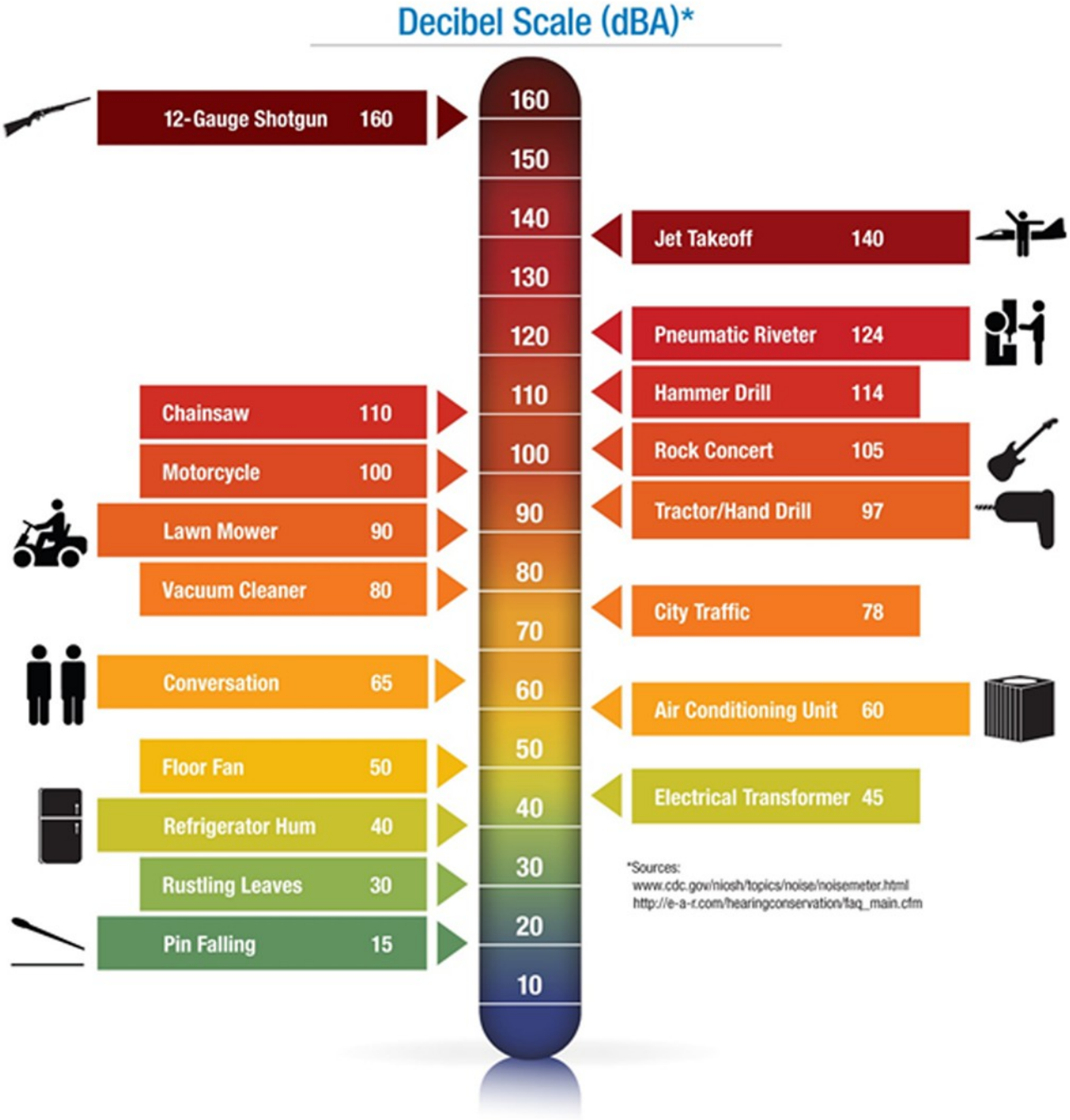
Appendix A

Acoustical Terminology

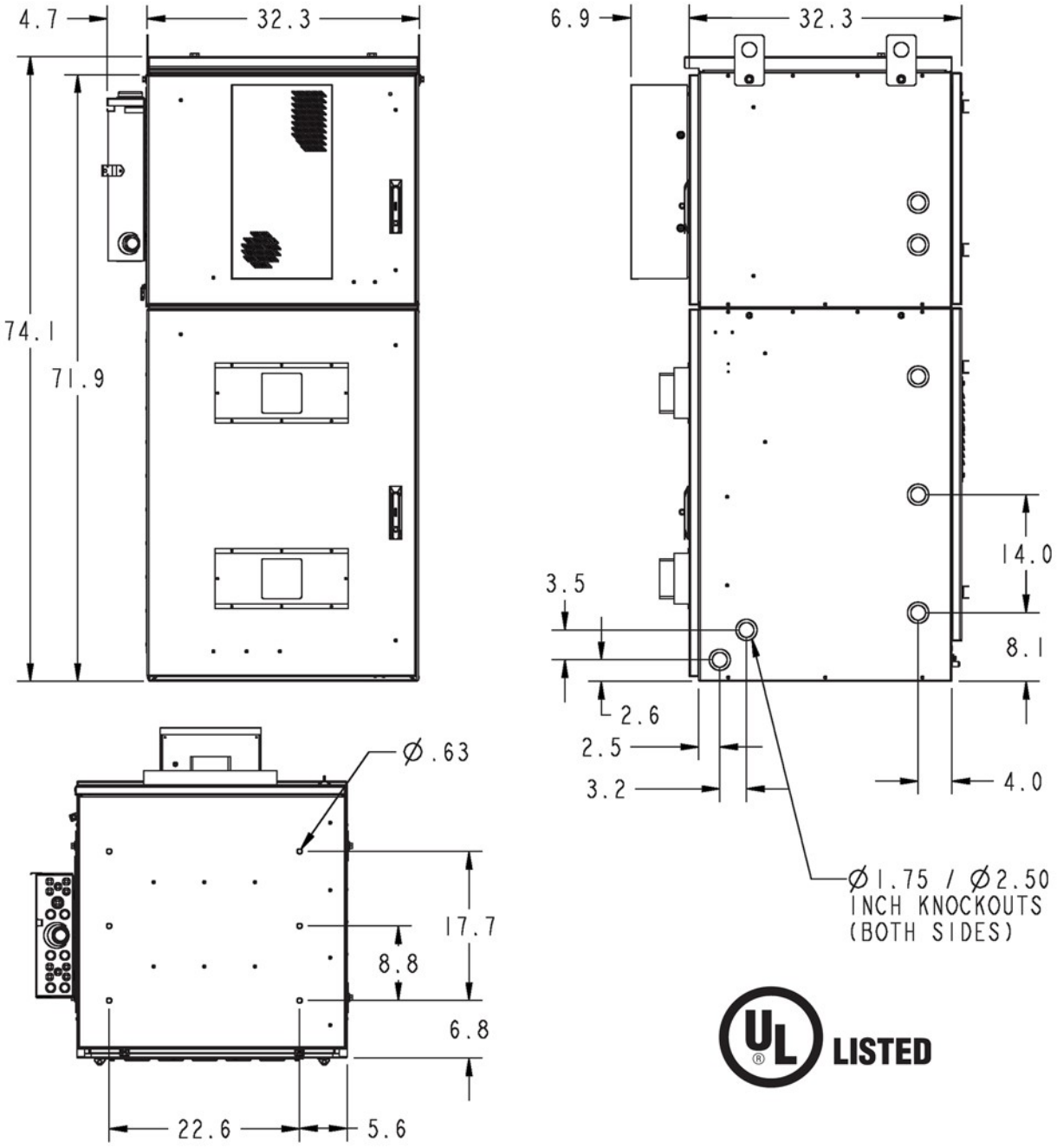
Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
Loudness	A subjective term for the sensation of the magnitude of sound.
Masking	The amount (or the process) by which the threshold of audibility is for one sound is raised by the presence of another (masking) sound.
Noise	Unwanted sound.
Peak Noise	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the Maximum level, which is the highest RMS level.
RT_{60}	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 sabin.
SEL	A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy of the event into a 1-s time period.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.

Appendix B

Typical A-Weighted Sound Levels of Common Noise Sources



Appendix C-1



UL LISTED

WEIGHT WITH BATTERIES:
2296 LBS.
NorthStar NSB-170FT batteries at 128 lbs each, Qty 12

WEIGHT WITHOUT BATTERIES:
760 LBS.

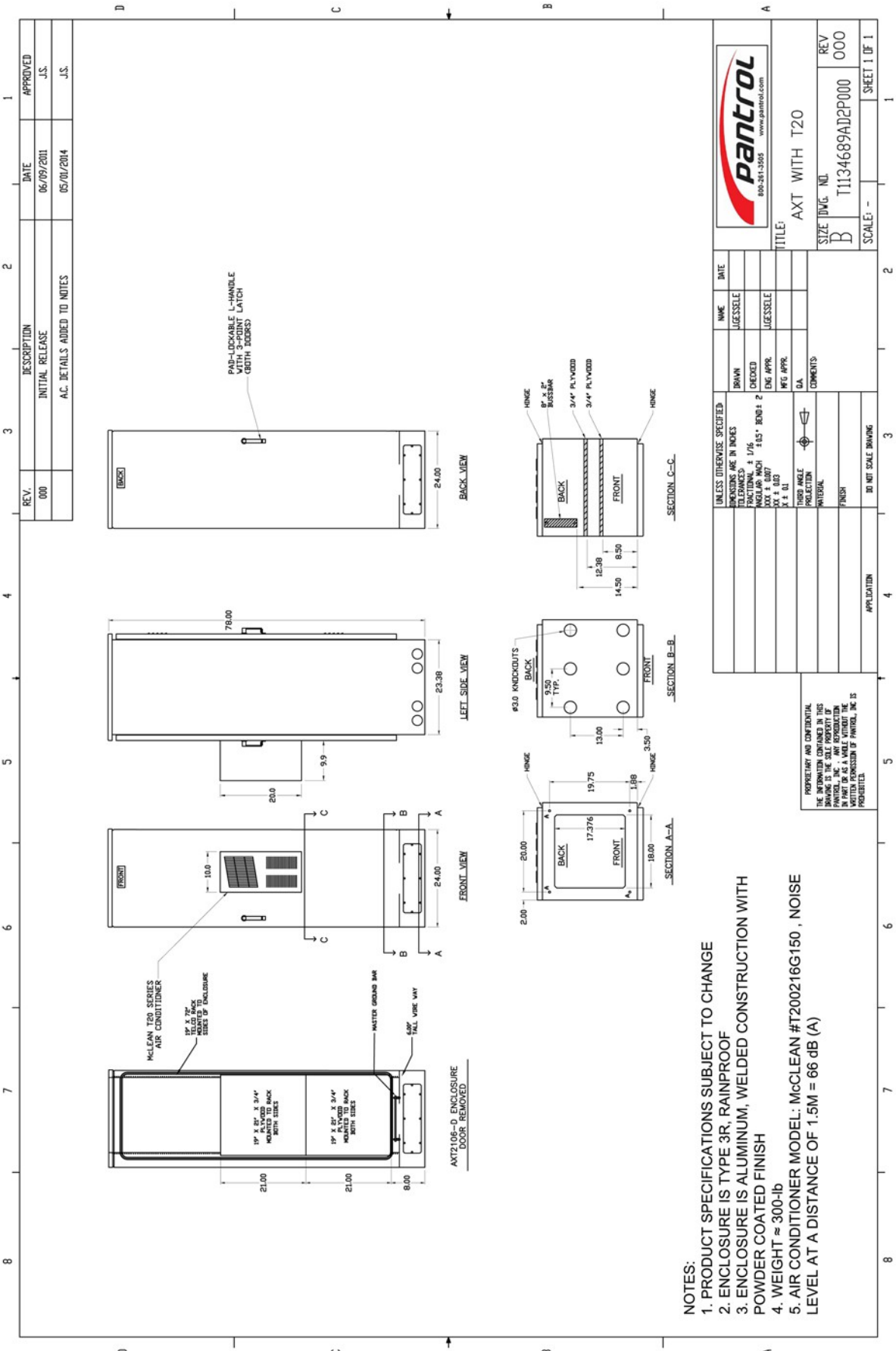
MAX NOISE LEVEL:
55-60dB

CHARLES PART #
CUBE-SS4C215XC1

Charles Industries Ltd.
Telecommunications Group
Charles Center, 5600 Apollo Drive
Rolling Meadows, IL 60008
Telephone: 847-806-6300

Verizon Wireless
Large Site Support Enclosure

Appendix C-2



NOTES:
1. PRODUCT SPECIFICATIONS SUBJECT TO CHANGE
2. ENCLOSURE IS TYPE 3R, RAINPROOF
3. ENCLOSURE IS ALUMINUM, WELDED CONSTRUCTION WITH POWDER COATED FINISH
4. WEIGHT ≈ 300-lb
5. AIR CONDITIONER MODEL: McCLEAN #T200216G150 , NOISE LEVEL AT A DISTANCE OF 1.5M = 66 dB (A)

Appendix D-1

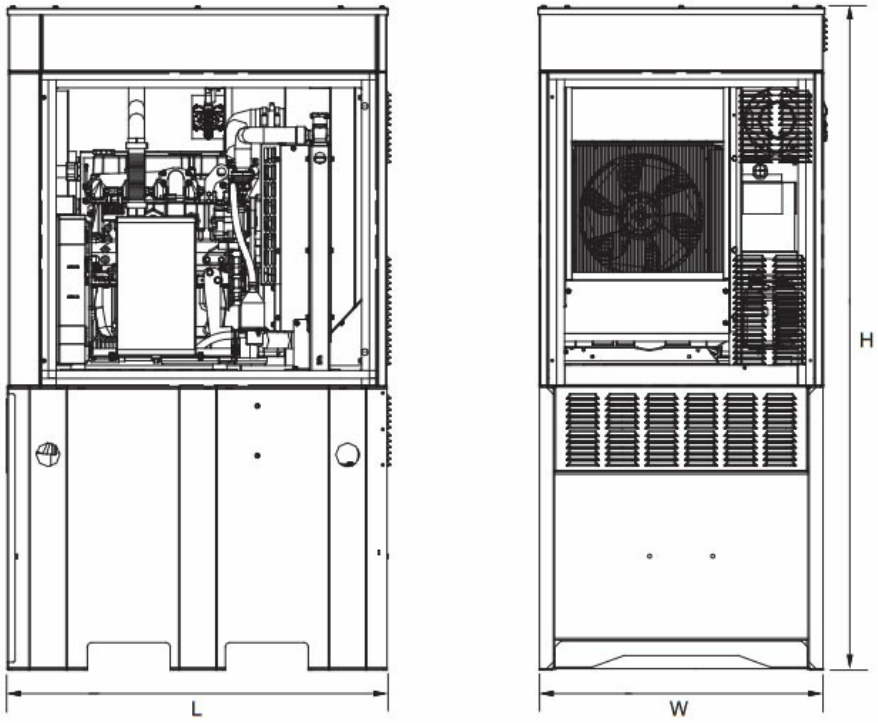
SDC20 | 2.5L | 20 kW - AC

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

DIMENSIONS AND WEIGHTS*



Level 2 Sound Attenuation Enclosure

Run Time Hours	46.7
Usable Capacity Gal (L)	92 (348.2)
L x W x H in (mm)	48 x 36 x 90 (1219.2 x 914.4 x 2286)
Weight lbs (kg)	2400 (1089)
Sound Level	65 dBA

* All measurements are approximate and for estimation purposes only.

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

SPEC SHEET

5 of 5

Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please consult a Generac Power Systems Industrial Dealer for detailed installation drawings.

Generac Power Systems, Inc. | P.O.Box 8 | Waukesha, WI 53189
P: (262) 544-4811

Document No. 10000000844
Rev. F 07/18/16

Appendix D-2

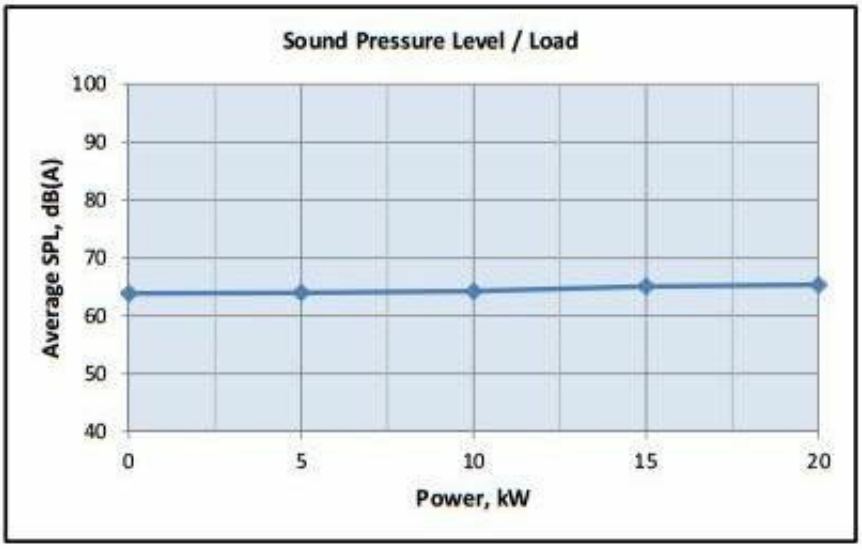
GENERAC

MT-103 Sound Test Results

Work Order #:	18322	**Engine Manufacturer:**	MHI
Model #:	Pilot 1 (TU#236730)	**Engine Disp, L:**	2.5
Enclosure:	0	**No. of Cylinders:**	4
		Fuel Type:	Diesel
		Engine Speed, rpm:	1800
Rated Power, kW:	20	**Exercise Speed, rpm:**	1800
Rated Voltage, V:	240		
Phase:	1	**Technician:**	CG
Power Factor:	1	**Test Date:**	05/23/16
Frequency, Hz:	60	**Test Location:**	Wauk.

All levels dB(A) at 7.0 meters

Mic. Pos.	Exercise	No Load	25% Load	50% Load	75% Load	100% Load
1, Front	n/a	67.0	67.6	67.8	68.1	67.8
2	n/a	63.4	63.4	63.3	64.3	63.9
3, Right	n/a	62.0	61.9	62.1	62.3	62.9
4	n/a	61.3	62.0	62.6	63.2	63.4
5, Rear	n/a	62.0	62.2	62.5	63.4	64.5
6	n/a	63.6	62.9	63.5	64.8	65.9
7, Left	n/a	65.2	65.1	65.4	67.0	67.1
8	n/a	66.3	66.7	66.8	67.6	67.2
Average:	**n/a**	**63.9**	**64.0**	**64.2**	**65.1**	**65.3**



Appendix E-1

Barrier Insertion Loss Calculation

Project Information:

Job Number: 2019-210
Project Name: Sierra & N. Palm Verizon Cellular Facility
Location(s): Fresno, California

Noise Level Data:

Source Description: Equipment Cabinets - Combined
Source Noise Level, Leq (dBA): 48
Source Frequency (Hz): 500
Source Height (ft): 5

Site Geometry:

Receiver Description: Outdoor Activity Area - APN: 416-083-07
Source to Barrier Distance (C_1): 17
Barrier to Receiver Distance (C_2): 28

Pad/Ground Elevation at Receiver: 0
Receiver Elevation: 5
Base of Barrier Elevation: 0
Starting Barrier Height 11

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
11	11	-11.1	36.8	Yes
12	12	-12.1	35.8	Yes
13	13	-13.0	34.9	Yes
14	14	-13.8	34.1	Yes
15	15	-14.5	33.4	Yes
16	16	-14.6	33.3	Yes
17	17	-15.3	32.6	Yes
18	18	-15.9	32.0	Yes
19	19	-16.3	31.6	Yes
20	20	-16.6	31.3	Yes
21	21	-16.9	31.0	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix E-2

Barrier Insertion Loss Calculation

Project Information:

Job Number: 2019-210
Project Name: Sierra & N. Palm Verizon Cellular Facility
Location(s): Fresno, California

Noise Level Data:

Source Description: Equipment Cabinets - Combined
Source Noise Level, Leq (dBA): 42
Source Frequency (Hz): 500
Source Height (ft): 5

Site Geometry:

Receiver Description: Outdoor Activity Area - APN: 416-083-15
Source to Barrier Distance (C_1): 23
Barrier to Receiver Distance (C_2): 67

Pad/Ground Elevation at Receiver: 0
Receiver Elevation: 5
Base of Barrier Elevation: 0
Starting Barrier Height 11

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
11	11	-10.0	31.9	Yes
12	12	-10.7	31.2	Yes
13	13	-11.5	30.4	Yes
14	14	-12.3	29.6	Yes
15	15	-13.0	28.9	Yes
16	16	-13.6	28.3	Yes
17	17	-14.1	27.8	Yes
18	18	-14.6	27.3	Yes
19	19	-14.6	27.3	Yes
20	20	-15.3	26.6	Yes
21	21	-15.9	26.0	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix E-3

Barrier Insertion Loss Calculation

Project Information:

Job Number: 2019-210
Project Name: Sierra & N. Palm Verizon Cellular Facility
Location(s): Fresno, California

Noise Level Data:

Source Description: Equipment Cabinets - Combined
Source Noise Level, Leq (dBA): 43
Source Frequency (Hz): 500
Source Height (ft): 5

Site Geometry:

Receiver Description: Outdoor Activity Area - APN: 416-083-14
Source to Barrier Distance (C_1): 14
Barrier to Receiver Distance (C_2): 66

Pad/Ground Elevation at Receiver: 0
Receiver Elevation: 5
Base of Barrier Elevation: 0
Starting Barrier Height 11

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
11	11	-10.9	32.0	Yes
12	12	-11.7	31.2	Yes
13	13	-12.8	30.1	Yes
14	14	-13.4	29.5	Yes
15	15	-14.1	28.8	Yes
16	16	-14.6	28.3	Yes
17	17	-14.6	28.3	Yes
18	18	-15.3	27.6	Yes
19	19	-15.9	27.0	Yes
20	20	-16.3	26.6	Yes
21	21	-16.6	26.3	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

Appendix E-4

Barrier Insertion Loss Calculation

Project Information:

Job Number: 2019-210
Project Name: Sierra & N. Palm Verizon Cellular Facility
Location(s): Fresno, California

Noise Level Data:

Source Description: Equipment Cabinets - Combined
Source Noise Level, Leq (dBA): 40
Source Frequency (Hz): 500
Source Height (ft): 5

Site Geometry:

Receiver Description: Outdoor Activity Area - APN: 416-083-13
Source to Barrier Distance (C_1): 17
Barrier to Receiver Distance (C_2): 98

Pad/Ground Elevation at Receiver: 0
Receiver Elevation: 5
Base of Barrier Elevation: 0
Starting Barrier Height 11

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
11	11	-10.3	29.4	Yes
12	12	-11.1	28.6	Yes
13	13	-11.9	27.8	Yes
14	14	-12.8	26.9	Yes
15	15	-13.4	26.3	Yes
16	16	-14.0	25.7	Yes
17	17	-14.6	25.1	Yes
18	18	-14.6	25.1	Yes
19	19	-15.3	24.4	Yes
20	20	-15.9	23.8	Yes
21	21	-15.9	23.8	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix E-5

Barrier Insertion Loss Calculation

Project Information:

Job Number: 2019-210
Project Name: Sierra & N. Palm Verizon Cellular Facility
Location(s): Fresno, California

Noise Level Data:

Source Description: Generac SDC20 (20kW) Diesel w/L2 Enclosure
Source Noise Level, Lmax (dBA): 61
Source Frequency (Hz): 500
Source Height (ft): 6

Site Geometry:

Receiver Description: Outdoor Activity Area - APN: 416-083-07
Source to Barrier Distance (C_1): 6
Barrier to Receiver Distance (C_2): 29

Pad/Ground Elevation at Receiver: 0
Receiver Elevation: 5
Base of Barrier Elevation: 0
Starting Barrier Height 11

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
11	11	-12.5	48.9	Yes
12	12	-13.5	47.9	Yes
13	13	-14.4	47.0	Yes
14	14	-14.6	46.8	Yes
15	15	-15.3	46.1	Yes
16	16	-15.9	45.5	Yes
17	17	-16.3	45.1	Yes
18	18	-16.9	44.5	Yes
19	19	-17.1	44.3	Yes
20	20	-17.1	44.3	Yes
21	21	-17.1	44.3	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix E-6

Barrier Insertion Loss Calculation

Project Information:

Job Number: 2019-210
Project Name: Sierra & N. Palm Verizon Cellular Facility
Location(s): Fresno, California

Noise Level Data:

Source Description: Generac SDC20 (20kW) Diesel w/L2 Enclosure
Source Noise Level, Lmax (dBA): 54
Source Frequency (Hz): 500
Source Height (ft): 6

Site Geometry:

Receiver Description: Outdoor Activity Area - APN: 416-083-15
Source to Barrier Distance (C_1): 7
Barrier to Receiver Distance (C_2): 71

Pad/Ground Elevation at Receiver: 0
Receiver Elevation: 5
Base of Barrier Elevation: 0
Starting Barrier Height 11

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
11	11	-11.5	42.9	Yes
12	12	-12.6	41.8	Yes
13	13	-13.5	40.9	Yes
14	14	-14.3	40.1	Yes
15	15	-14.6	39.8	Yes
16	16	-15.3	39.1	Yes
17	17	-15.9	38.5	Yes
18	18	-16.3	38.1	Yes
19	19	-16.6	37.8	Yes
20	20	-16.9	37.5	Yes
21	21	-17.1	37.3	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix E-7

Barrier Insertion Loss Calculation

Project Information:

Job Number: 2019-210
Project Name: Sierra & N. Palm Verizon Cellular Facility
Location(s): Fresno, California

Noise Level Data:

Source Description: Generac SDC20 (20kW) Diesel w/L2 Enclosure
Source Noise Level, Lmax (dBA): 55
Source Frequency (Hz): 500
Source Height (ft): 6

Site Geometry:

Receiver Description: Outdoor Activity Area - APN: 416-083-14
Source to Barrier Distance (C_1): 3
Barrier to Receiver Distance (C_2): 69

Pad/Ground Elevation at Receiver: 0
Receiver Elevation: 5
Base of Barrier Elevation: 0
Starting Barrier Height 11

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
11	11	-13.3	41.8	Yes
12	12	-14.2	40.9	Yes
13	13	-14.6	40.5	Yes
14	14	-15.3	39.8	Yes
15	15	-15.9	39.2	Yes
16	16	-16.3	38.8	Yes
17	17	-16.6	38.5	Yes
18	18	-16.9	38.2	Yes
19	19	-17.1	38.0	Yes
20	20	-17.1	38.0	Yes
21	21	-17.1	38.0	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

Appendix E-8

Barrier Insertion Loss Calculation

Project Information:

Job Number: 2019-210
Project Name: Sierra & N. Palm Verizon Cellular Facility
Location(s): Fresno, California

Noise Level Data:

Source Description: Generac SDC20 (20kW) Diesel w/L2 Enclosure
Source Noise Level, Lmax (dBA): 51
Source Frequency (Hz): 500
Source Height (ft): 6

Site Geometry:

Receiver Description: Outdoor Activity Area - APN: 416-083-13
Source to Barrier Distance (C_1): 7
Barrier to Receiver Distance (C_2): 111

Pad/Ground Elevation at Receiver: 0
Receiver Elevation: 5
Base of Barrier Elevation: 0
Starting Barrier Height 11

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
11	11	-11.3	39.5	Yes
12	12	-12.5	38.3	Yes
13	13	-13.4	37.4	Yes
14	14	-14.1	36.7	Yes
15	15	-14.6	36.2	Yes
16	16	-15.3	35.5	Yes
17	17	-15.3	35.5	Yes
18	18	-15.9	34.9	Yes
19	19	-16.3	34.5	Yes
20	20	-16.6	34.2	Yes
21	21	-16.9	33.9	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

BOLLARD
Acoustical Consultants

Exhibit D

295 Parkshore Drive
Folsom, CA 95630

March 11, 2021

To: City of Fresno Planning Commission

From: Walt Kohls, Radio Frequency Design Engineer
Verizon Wireless Network Engineering Department

Subject: Statement in Support of Verizon Wireless's Proposed Facility
Sierra and North Palm, Fresno

Executive Summary

Verizon Wireless has identified a significant gap in its fourth-generation long-term evolution (LTE) service in the northwest Fresno area, to include the area generally south of West Sierra Avenue, east of North West Avenue, north of West Barstow Avenue, and west of North Maroa Avenue. This area includes the Bullard High School campus and the adjacent neighborhoods. This area currently receives inadequate LTE service coverage from the existing Verizon Wireless Bullard cell site 1 mile west of the Proposed Facility, the Fig Garden cell site 1 mile south, the East Sierra cell site 1.5 miles northeast, and the Ingram cell site 1.60 miles north.

Due to the distance from existing facilities, there is a gap in reliable LTE in-building and in-vehicle service coverage in the northwest Fresno area, with pockets receiving no reliable service levels. Further, accelerated growth in voice and data usage by Verizon Wireless customers has increased the demand on the existing Verizon Wireless network in a manner that will compromise network accessibility and reliability.

To meet this increased local demand, Verizon Wireless is deploying efficient high-speed fourth-generation LTE technology. Within the Fresno area, 65 percent of Verizon Wireless's LTE bandwidth is in the mid-band AWS (2100 MHz) and PCS (1900 MHz) frequencies, with 35 percent in low-band frequencies (700 and 850 MHz). Higher frequencies mean greater data capacity. However, the higher-band frequencies do not travel as far as low-band frequencies, and require sites closer together and closer to the end user to provide reliable LTE service. Verizon Wireless designs our networks to ensure that mid-band frequencies can provide adequate capacity as well as coverage.

We describe below the significant gap in coverage and capacity that Verizon Wireless seeks to remedy (the "Significant Gap"). To provide reliable LTE service and avoid further degradation of Verizon Wireless service in the northeast Fresno area, the Significant Gap must be remedied through construction of a new stealth tower at the proposed Bullard and North Palm location (the "Proposed Facility").

Coverage Gap

Verizon Wireless is experiencing a gap in its LTE in-building service coverage in the northwest Fresno area, notably in residential areas west and east of North Palm Avenue. This includes a lack of reliable LTE in-building coverage in areas in and around the Bullard High School campus and along a commercial stretch of North Palm Avenue.

Portions of this area lack reliable LTE in-vehicle service, including a 1.7-mile stretch of West Bullard Avenue between North Teilman Avenue and North Maroa Avenue, and a 1.2 mile-stretch of North Palm Avenue between West Herndon Avenue and West Browning Avenue. There are also significant coverage issues along West Sierra Avenue between North Teilman Avenue and North Maroa Avenue.

The Proposed Facility will provide new reliable LTE in-building coverage to these areas, as well as new reliable in-vehicle service along those roadways where sufficient coverage is lacking. In total, the Proposed Facility will provide reliable LTE in-building and in-vehicle service to an area of 3.14 square miles, and a population of 13,103 residents in 5,845 households.

A graphic description of the LTE coverage gap is shown on the following coverage map, followed by a map showing the improved coverage to be provided by the Proposed Facility. The coverage maps have been prepared using the AWS frequency band. AWS frequencies carry the majority of our traffic and show a more detailed representation of "real world coverage."

Referenced signal receive power (RSRP) is a measurement of signal level in decibels (dBm), which is a negative number that decreases due to distance and other factors.

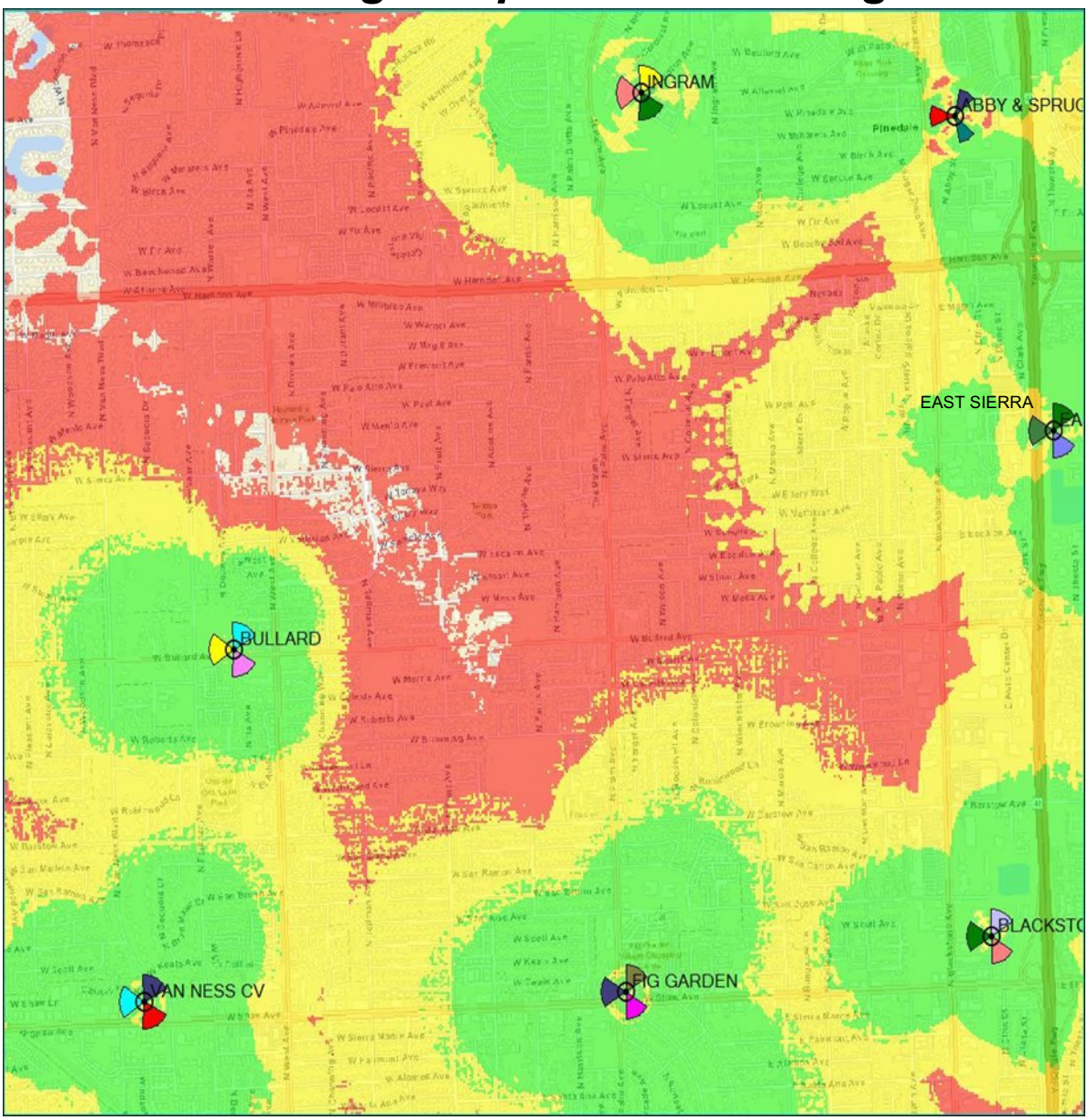
The LTE RSRP coverage thresholds are:

In-building >= -75 dBm. Green depicts good coverage that meets or exceeds thresholds for reliable network coverage in homes and vehicles.

In-vehicle >= -85 dBm. Yellow depicts reliable in-vehicle coverage only.

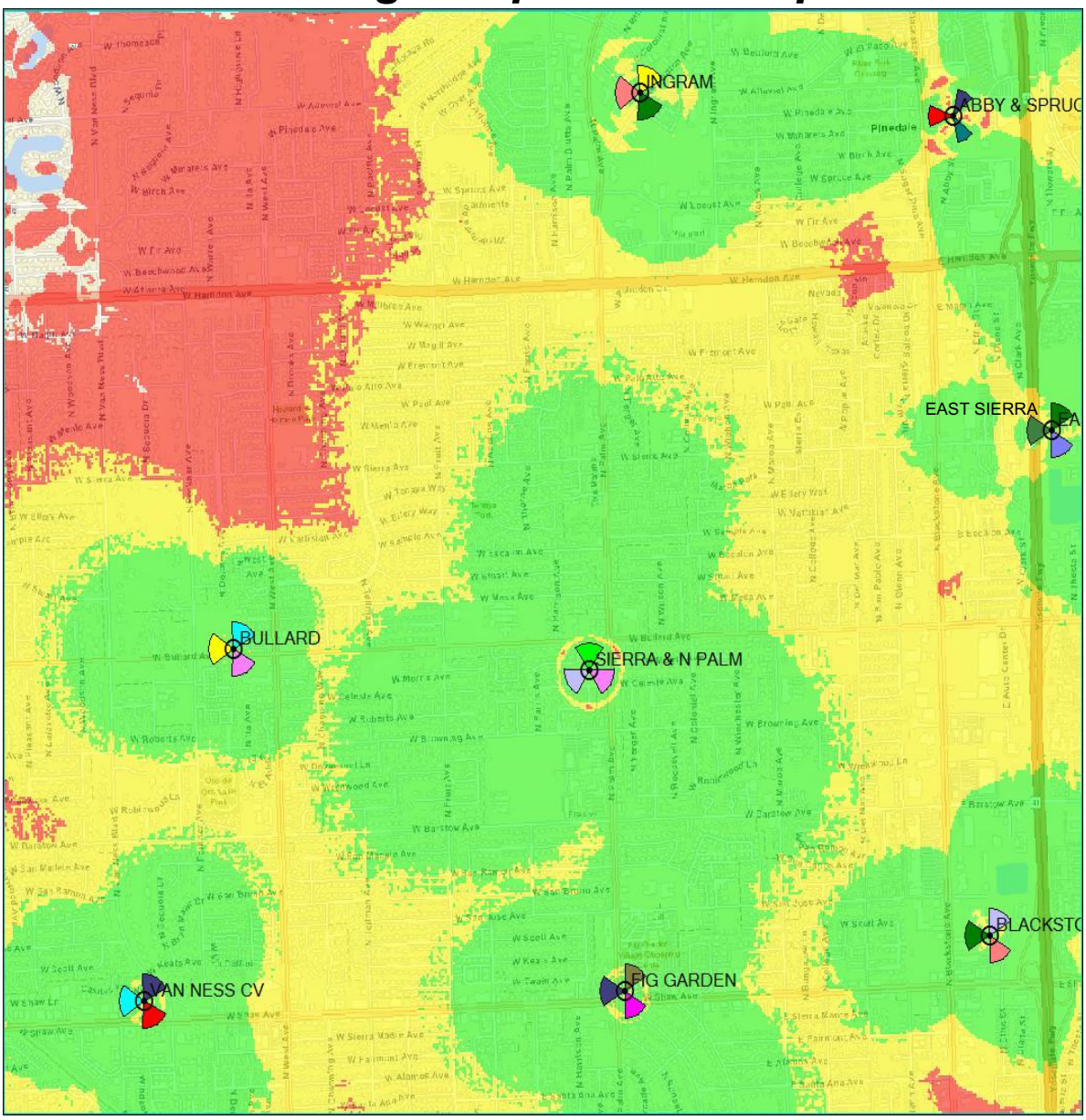
Outdoor >= -95 dBm. Red depicts reliable outdoor service only.

AWS Coverage Map – With Existing Sites



In-Building >=-75 dBm
In-Vehicle >=-85 dBm
Outdoor >=-95 dBm

AWS Coverage Map – With Proposed Site



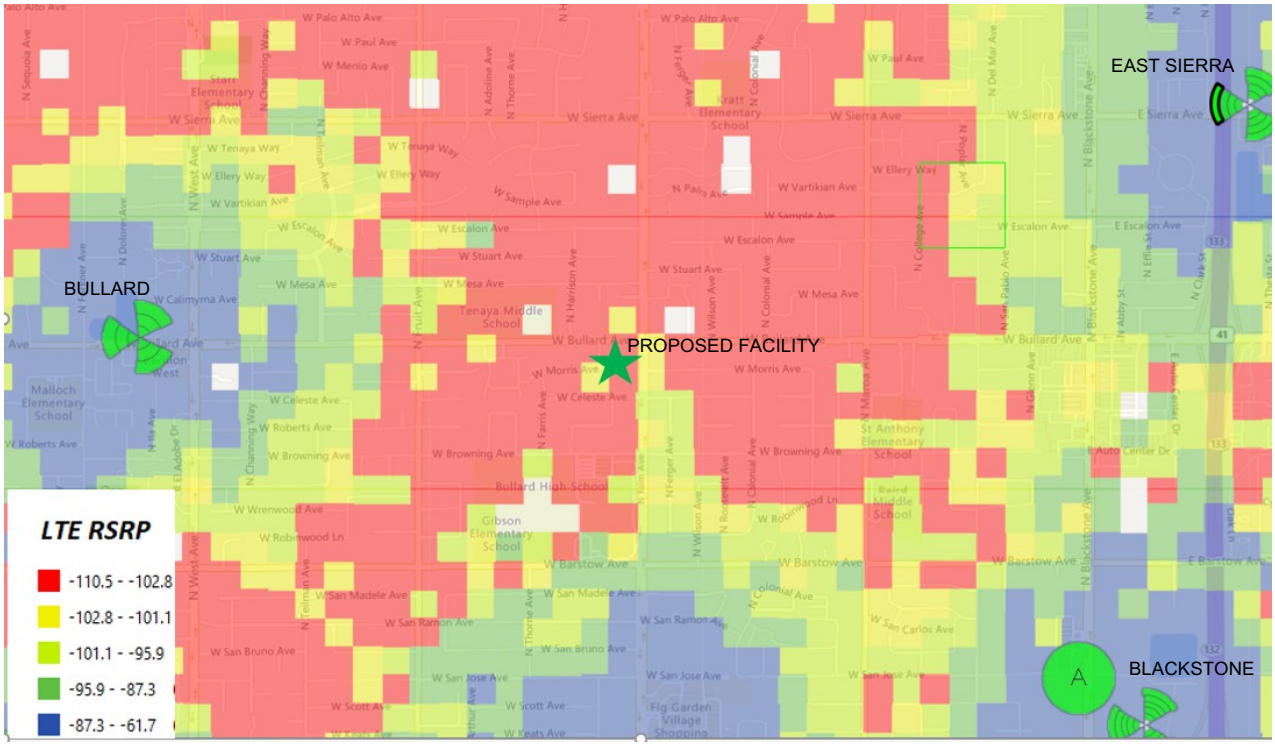
In-Building >=-75 dBm
In-Vehicle >=-85 dBm
Outdoor >=-95 dBm

The following map shows the average signal level from existing Verizon Wireless facilities received by customer devices in the gap area over 24 hours on March 10, 2021. The customer devices report this data to the network, and Verizon Wireless uses its TrueCall tool to analyze this data and optimize system performance.

Similar to the coverage maps, yellow and red squares show decreasing signal level, with the numerous red squares indicating only an outdoor level of service. White squares indicate vacant areas (e.g., fields) where no data was reported that day.

The map shows how signal level from the existing Verizon Wireless facilities decreases with distance. The map demonstrates the poor signal levels received in the gap area in the center of the map, with a pronounced lack of in-building service levels (green squares) in that area.

Existing LTE Signal Level Measured by Customer Devices
March 10, 2021



Capacity Gap

As described above, the identified gap area receives inadequate service from nearby Verizon Wireless facilities. This is apparent in the following best server maps, which depict the area of dominant signal provided by each existing Verizon Wireless facility. Signal from each antenna sector of these facilities is depicted in a different color.

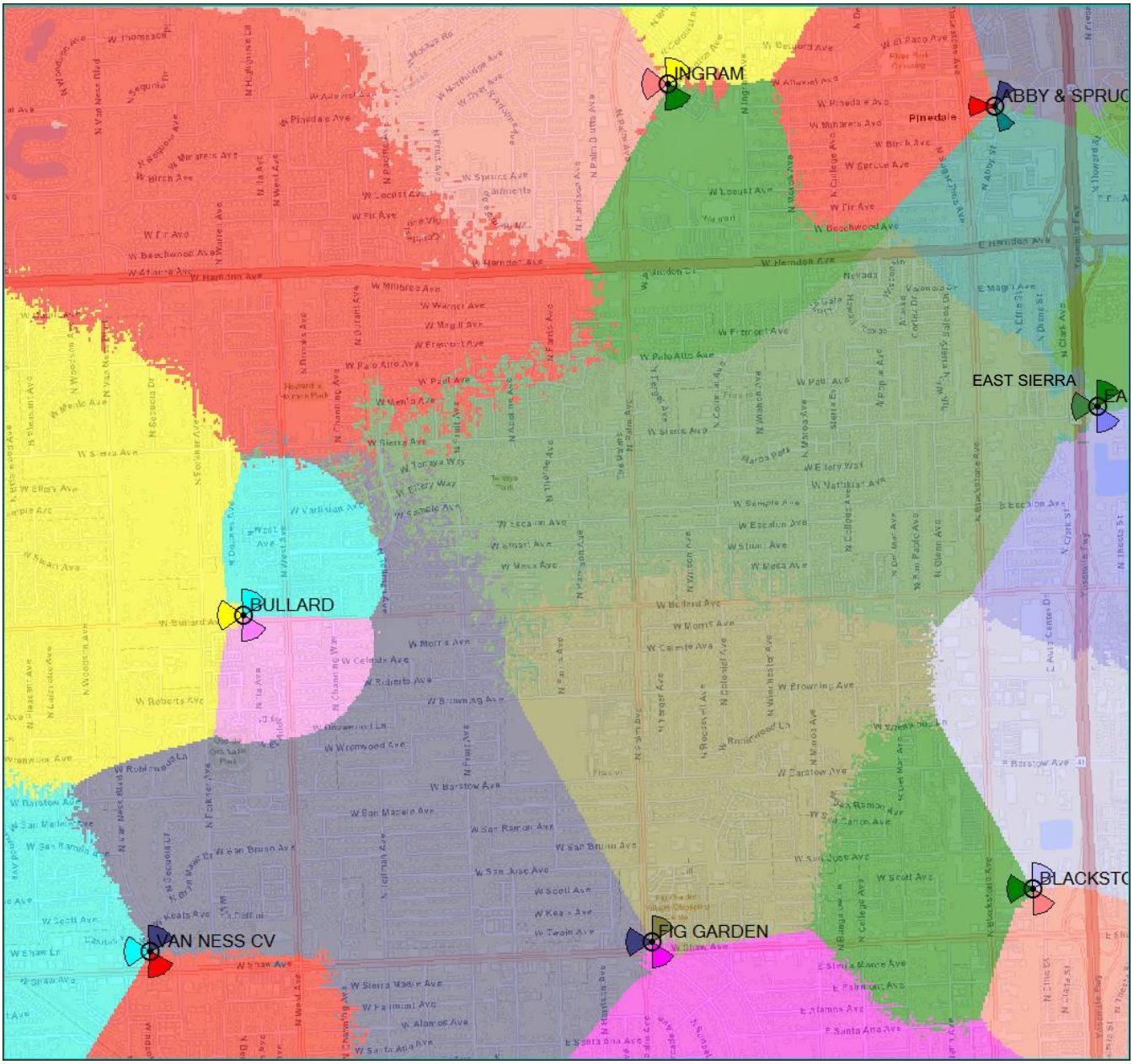
Although dominant, the signal from distant existing Verizon Wireless facilities is weak in the gap area. Of note, the best server map shows how most of the gap area, including the western and southern portions, is served by the Fig Garden cell site 1 mile south of the Proposed Facility and the East Sierra cell site 1.5 miles northeast. These sectors are shown in olive green and grey on the best server maps. These cell site sectors serving the gap area are predicted to reach capacity exhaustion by early 2021, which will further compromise network performance for Verizon Wireless customers in the distant areas served by those facilities.

Reliable Verizon Wireless service is important for residents, workers and visitors, and critical to public safety. Nationwide, most 911 calls are placed from mobile phones, and in emergencies, first responder agencies increasingly rely on dependable Verizon Wireless service.

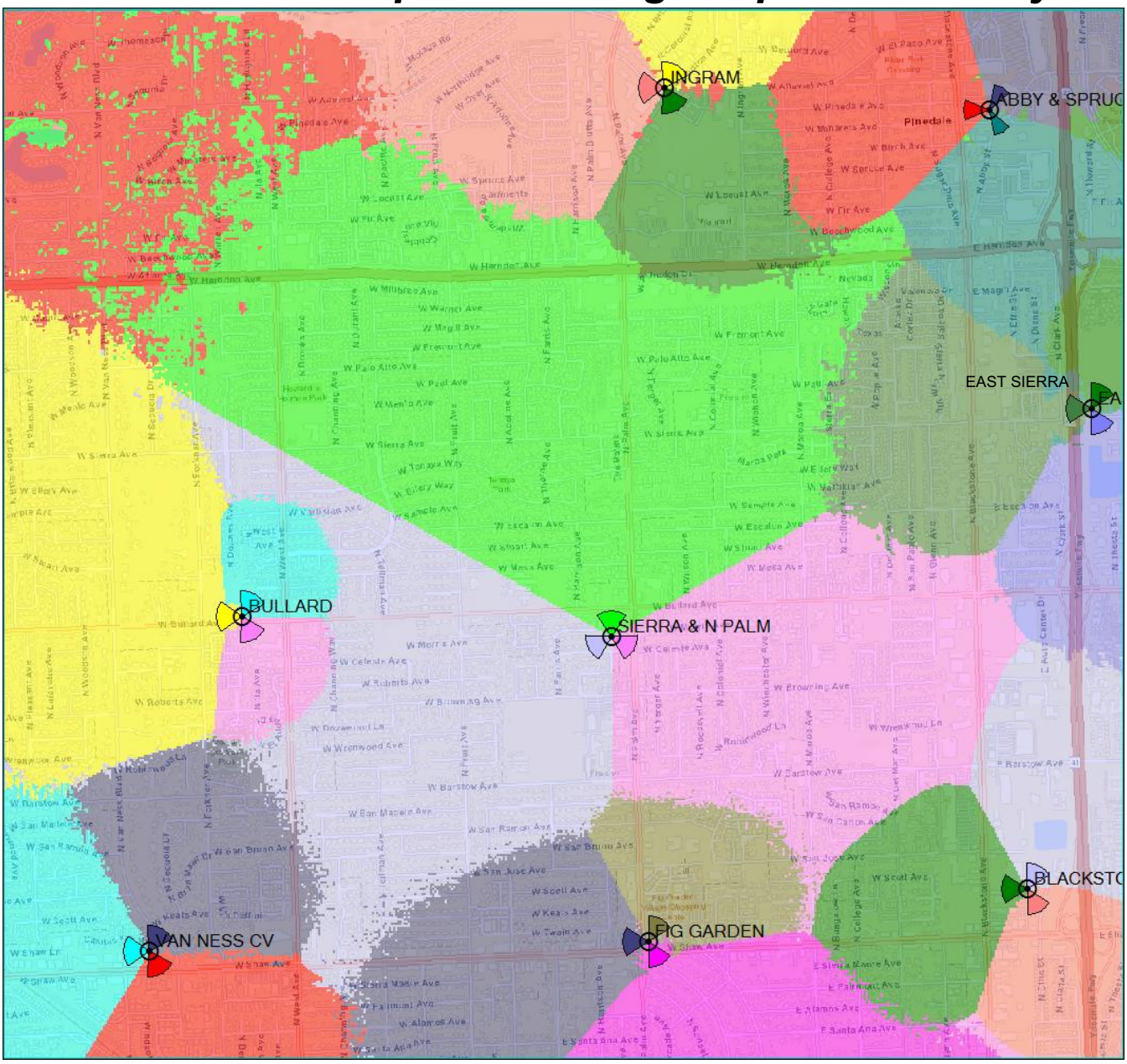
As shown on the second best server map, the proposed site is strategically located to provide broad new dominant signal to the gap area. This will dramatically improve coverage and capacity to the gap area around the Proposed Facility. The Proposed Facility's new dominant signal is shown on the map as light green to its north, light purple to the west and southwest, and pink to the east and southeast. By relieving the demand on the Fig Garden and East Sierra sites, the proposed site will ensure reliable overall network performance in the greater vicinity.

See Best Server Maps on Following Page

Best Server Map – Existing Facilities



Best Server Map – Including Proposed Facility

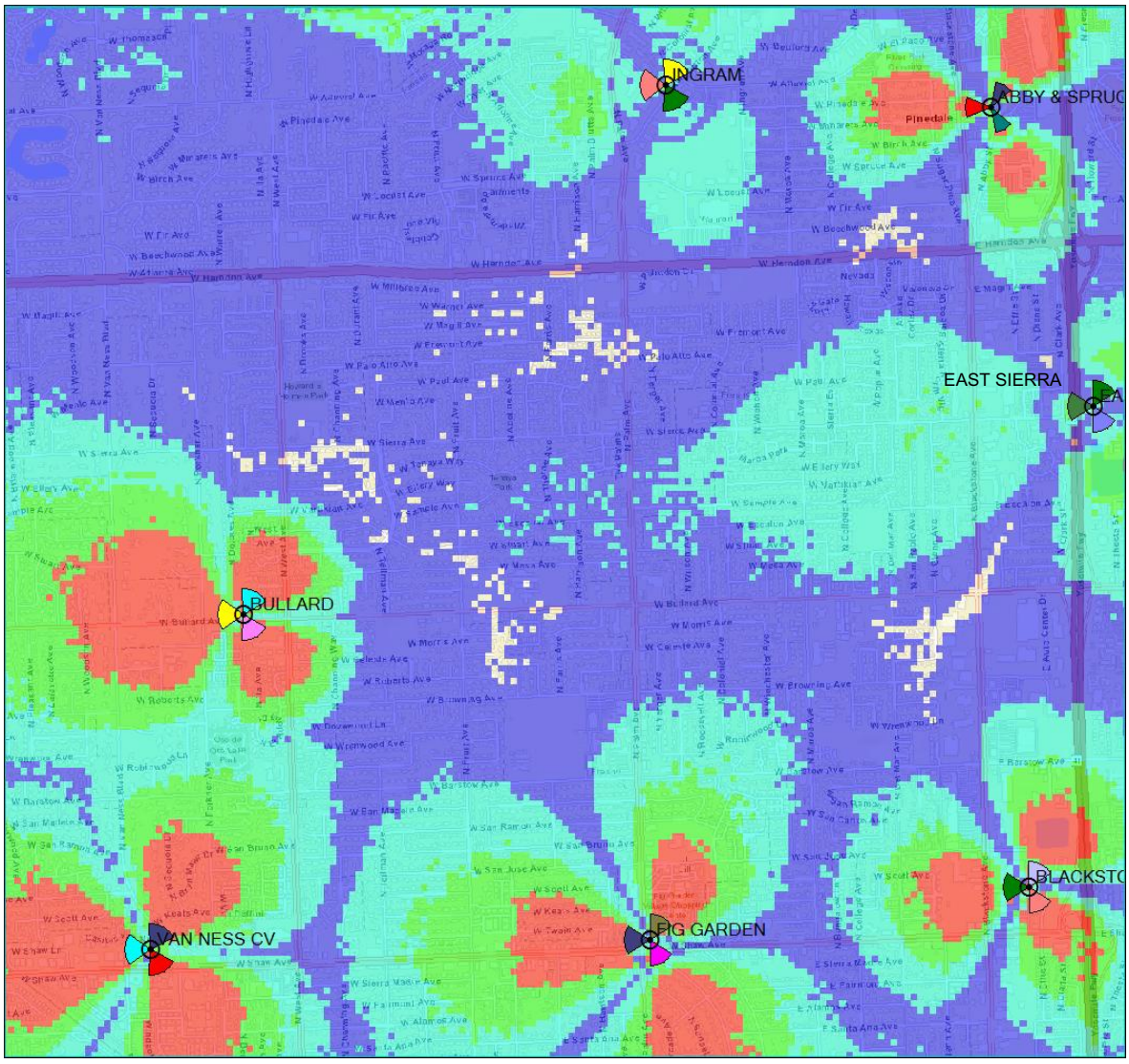


Throughput Maps

As already mentioned, there is increasing demand on Verizon Wireless's network for data capacity and throughput. As our society moves toward more dependency on our mobile devices, so does the need to expand and upgrade our network to stay ahead of the demand.

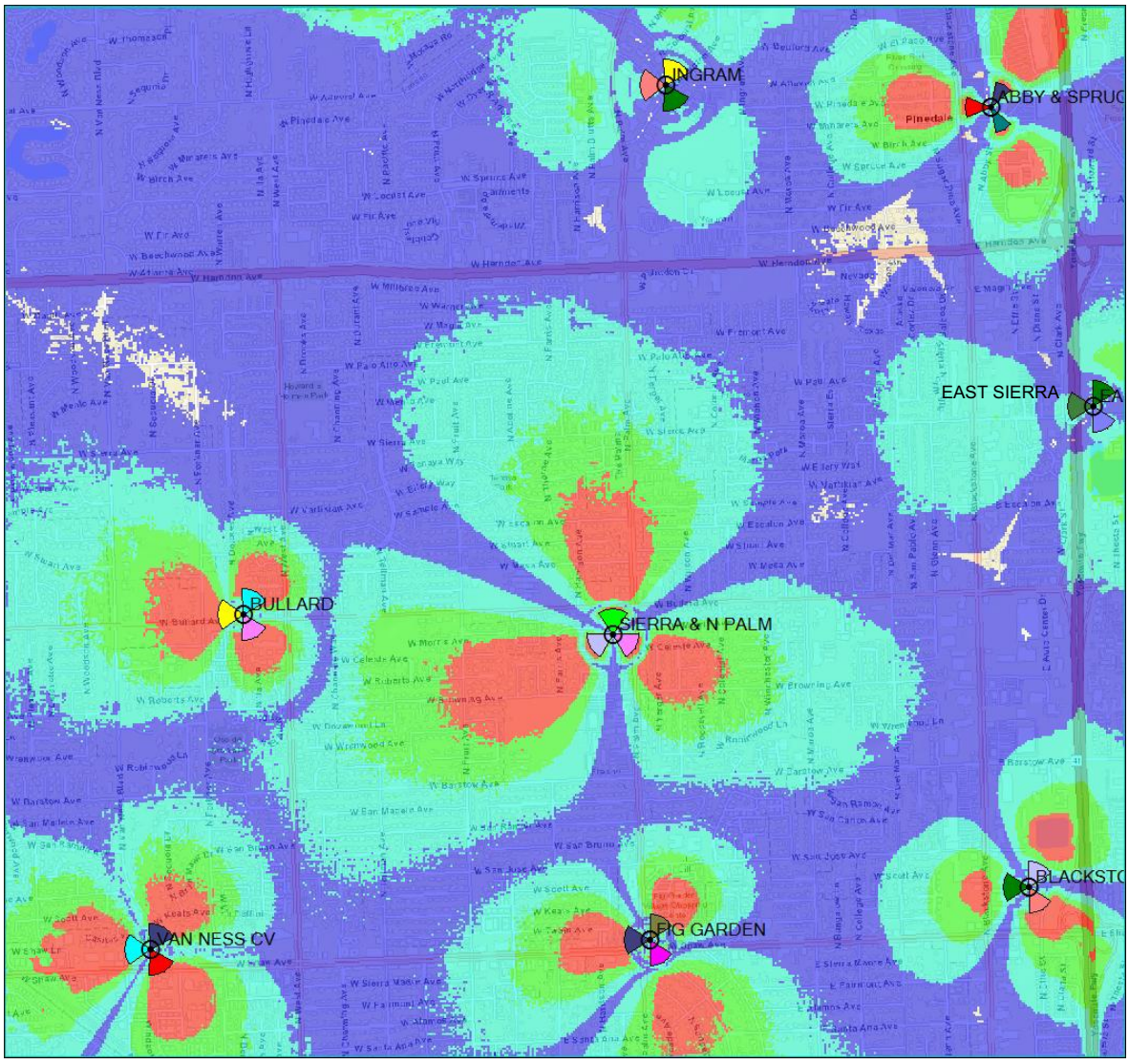
The following maps show a graphical representation of our throughput speeds in the existing area. The first map represents the current downlink throughput speeds in the area, as depicted in dark blue with speeds between 0 and 10 Mbps (megabits per second). The second map represents the throughput speeds with the addition of the Proposed Facility as depicted in red with speeds above 40 Mbps.

Existing Throughput



Throughput (DL) (Mbps) >=40
25 <=Throughput (DL) (Mbps) <40
10 <=Throughput (DL) (Mbps) <25
0 <=Throughput (DL) (Mbps) <10

Proposed Throughput



Throughput (DL) (Mbps) >=40
25 <=Throughput (DL) (Mbps) <40
10 <=Throughput (DL) (Mbps) <25
0 <=Throughput (DL) (Mbps) <10

Conclusion

As the Verizon Wireless network matures, the network must be expanded with additional sites placed closer to customers, due to the increase in usage of the network. The LTE technology used by Verizon Wireless to provide fourth-generation service requires facilities closer to customers, and this service cannot be provided adequately by existing distant sites that serve the gap area. These type of coverage and capacity challenges lead to the Significant Gap in Verizon Wireless LTE coverage and network capacity in the Bullard High School area. The addition of the proposed Sierra & North Palm site will significantly improve the coverage and capacity in the area and help mitigate any future issues. On a personal note, I have been living in the Fresno area most of my life, and in 2014 I took over all planning and design of the local Verizon network. I have taken great efforts to look for solutions that are in the best interest of the Verizon customers and the City of Fresno.

Please feel free to contact me with any question or concerns in regards to this proposed facility.

Respectfully submitted,

Walt Kohls

Walt Kohls
RF Design Engineer
Network Engineering Department
Verizon Wireless

My responsibilities include planning, design and implementation of improvements to network infrastructure to provide reliable service. I have been in the telecommunications industry for 30 years. I have 7 years of experience in cellular RF network design. I received my Electronics Engineering degree from the Community College of the Air Force.

Exhibit E

Alternatives Analysis

Sierra & North Palm

5747 North Palm Avenue, Fresno

March 11, 2021

Summary of Site Evaluations
Conducted by Verizon Wireless

TABLE OF CONTENTS

I. Executive Summary

Verizon Wireless must fill a significant gap in service in the northwest Fresno area. Based on the review of the local commercial area and seven specific alternative sites set forth in the following analysis, Verizon Wireless believes that placing a new tower facility camouflaged as a eucalyptus tree on a commercial property (the "Proposed Facility") constitutes the least intrusive feasible alternative to serve the identified gap in network service based on the values expressed in City of Fresno regulations.

While City policies do not require an alternatives analysis for new wireless facilities, Verizon Wireless provides this analysis as a courtesy to confirm that the Proposed Facility is the least intrusive feasible alternative.

II. Significant Gap

There is a significant gap in Verizon Wireless network service in the northwest Fresno area. There is a broad gap in in-building LTE coverage in the area, which includes residential neighborhoods as well as commercial developments. Reliable in-vehicle coverage is lacking along major roadways and local streets in the gap area. Further, accelerated 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. (Collectively, the "Significant Gap") The Significant Gap is described in detail in the *Statement of Verizon Wireless Radio Frequency Design Engineer Walt Kohls* (the "RF Engineer's Statement"). To remedy the Significant Gap, Verizon Wireless must place a new facility to ensure sufficient reliable network service.

III. Methodology

Once a significant gap has been determined, Verizon Wireless seeks to identify a location and design that will provide required 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. In this regard, Verizon Wireless reviews the available height, equipment space, radio frequency propagation, proximity to end users, access, environmental impacts and other critical factors such as a willing landlord in completing its site analysis.

City Permit Requirements

For all zoning districts, the Fresno Code of Ordinances defers to the City's policy regarding wireless facilities (the "Wireless Policy"). Code § 15-2759(B); *Policy and Procedure No. 33, Wireless Telecommunication Facilities*. New wireless facilities require a conditional use permit. Wireless Policy § 2(A). The Wireless Policy does not allow a new facility to be installed within 100 yards of an existing facility. Wireless Policy § 2(I). A new single-carrier facility can exceed 70 feet if there are special conditions. Wireless Policy §§ 1(A)(1), (11). As an alternative design option, the City may require a structure to resemble a tree or to add other architectural features, to ensure compatibility with surroundings. Wireless Policy § 2(G)

IV. Analysis

Local Commercial Area – Bullard and North Palm Avenues

Verizon Wireless first sought non-residential properties, readily identifying the Proposed Facility location on a large commercially-zoned property on the southwest corner of Bullard and North Palm Avenues, at the center of the gap. The Proposed Facility (Alternative 1) can be placed in an existing walled enclosure at the rear of the property, placing it 260 feet from the closest roadway, North Palm Avenue.

There are two existing wireless facilities on the northwest and northeast corners of Bullard and North Palm Avenues (Sprint & AT&T). The Wireless Policy requires a minimum 100-yard setback from these existing facilities. The setback is shown as the orange circles on the map below.

100-Yard Setback from Existing Wireless Facilities
Intersection of Bullard Avenue and North Palm Avenue

The 100-yard setback excludes most of the northwest and northeast corner areas, including the rear areas of those commercial properties. In the little available area outside the 100-yard setbacks, a new facility would be close to a major roadway, and

there is no suitable place to site a new facility without interfering with vehicle access or parking. Similarly, on the southeast corner, there are only a few small commercial and office properties, where a facility would be very close to a major roadway, and would interfere with limited access and parking. Surrounding areas are residential.

Specific Alternative Sites

Verizon Wireless also explored collocation with the existing wireless facilities referenced above, but this was determined to be infeasible (Alternatives 2-3). While Verizon Wireless generally avoided residential zones, it reviewed three larger residential parcels as well as an office park parcel with vacant space, but these were determined to be infeasible or more intrusive (Alternatives 4-7).

1. Proposed Facility

Address: 5747 North Palm Avenue
Zoning: CC – Community Commercial

The Proposed Facility has been thoughtfully designed to minimize any impact to the adjacent community. Verizon Wireless proposes to conceal its panel antennas within an 80-foot freestanding facility camouflaged as a eucalyptus tree. The antennas will be concealed within faux foliage and branches, and branches will extend beyond and above the antennas, providing a realistic crown. Antennas will be covered with leaf socks for further concealment. The treepole and associated network equipment will be placed within an existing 600-square foot concrete block enclosure next to a commercial building, along with a standby generator to provide continued service during emergencies. The existing concrete block wall is 10 feet 8 inches high, and Verizon Wireless will remove the roof of the enclosure and replace it with fencing fabric. Utilities serving the Approved Facility will be routed underground.

With panel antennas placed at a 68-foot centerline at this optimal location at the center of the gap area, the Proposed Facility will provide reliable Verizon Wireless LTE service to the Significant Gap. An analysis comparing existing and proposed service is found in the RF Engineer's Statement. This is Verizon Wireless's preferred location and design for the Proposed Facility.

2. Sprint Facility

Address: 1080 West Bullard Avenue
Zoning: RS-4 – Residential (Non-residential use)

Verizon Wireless considered collocating with this existing wireless monopole owned by Crown Castle International and hosting a Sprint facility, located in a church parking lot 0.15 miles north of the Proposed Facility. To accommodate an additional Verizon Wireless facility, this monopole would need to be replaced, and significantly increased in height to allow for the nine panel antennas (potentially stacked in groups of three) and pole-mounted radio units required to serve the Significant Gap.

A new Verizon Wireless facility at this location would require expansion of the ground-mounted equipment area, shown in the photo to the right. Verizon Wireless previously inquired with Crown Castle about collocation at this facility, but Crown Castle responded that the property owner had not been interested in leasing additional space. This is not a feasible alternative to the Proposed Facility.

3. AT&T Facility

Address: 732 West Bullard Avenue
Zoning: CC – Community Commercial

Verizon Wireless considered collocating with this existing wireless monopole owned by Crown Castle International and hosting an AT&T facility, located behind a shopping mall 0.2 miles northeast of the Proposed Facility. To accommodate an additional Verizon Wireless facility, this slimline monopole with shrouded antennas would need to be replaced, and significantly increased in height to allow for the nine panel antennas (stacked in groups of three) and pole-mounted radio units required to serve the Significant Gap.

Crown Castle confirmed that its leased equipment space behind the building, shown in the photo to the right, is already filled with equipment for the existing carrier's facility, and that the property owner was not willing to lease additional space. There is no room for the additional ground-mounted network equipment that Verizon Wireless would require. This is not a feasible alternative to the Proposed Facility.

4. Shamlian Property

Address: 6179 North Palm Avenue
Zoning: RS-4 – Residential

Verizon Wireless investigated this unusually large corner residential parcel (1.12 acres) with available vacant space to the rear, 0.35 miles north of the Proposed Facility. When Verizon Wireless reviewed a preliminary title report for the property, it discovered that a restrictive covenant would forbid a commercial wireless facility on the property. This is not a feasible alternative to the Proposed Facility.

5. Tapoozian Property

Address: 6281 North Palm Avenue
Zoning: RM-1 – Residential

Verizon Wireless investigated this unusually large residential parcel (2.44 acres) with ample available vacant space, 0.45 miles north of the Proposed Facility. Verizon Wireless contacted the property owner regarding placement of a facility, but the owner declined. This is not a feasible alternative to the Proposed Facility.

6. Spano / S&B Property

Address: 1060 West Sierra Avenue
Zoning: O – Office

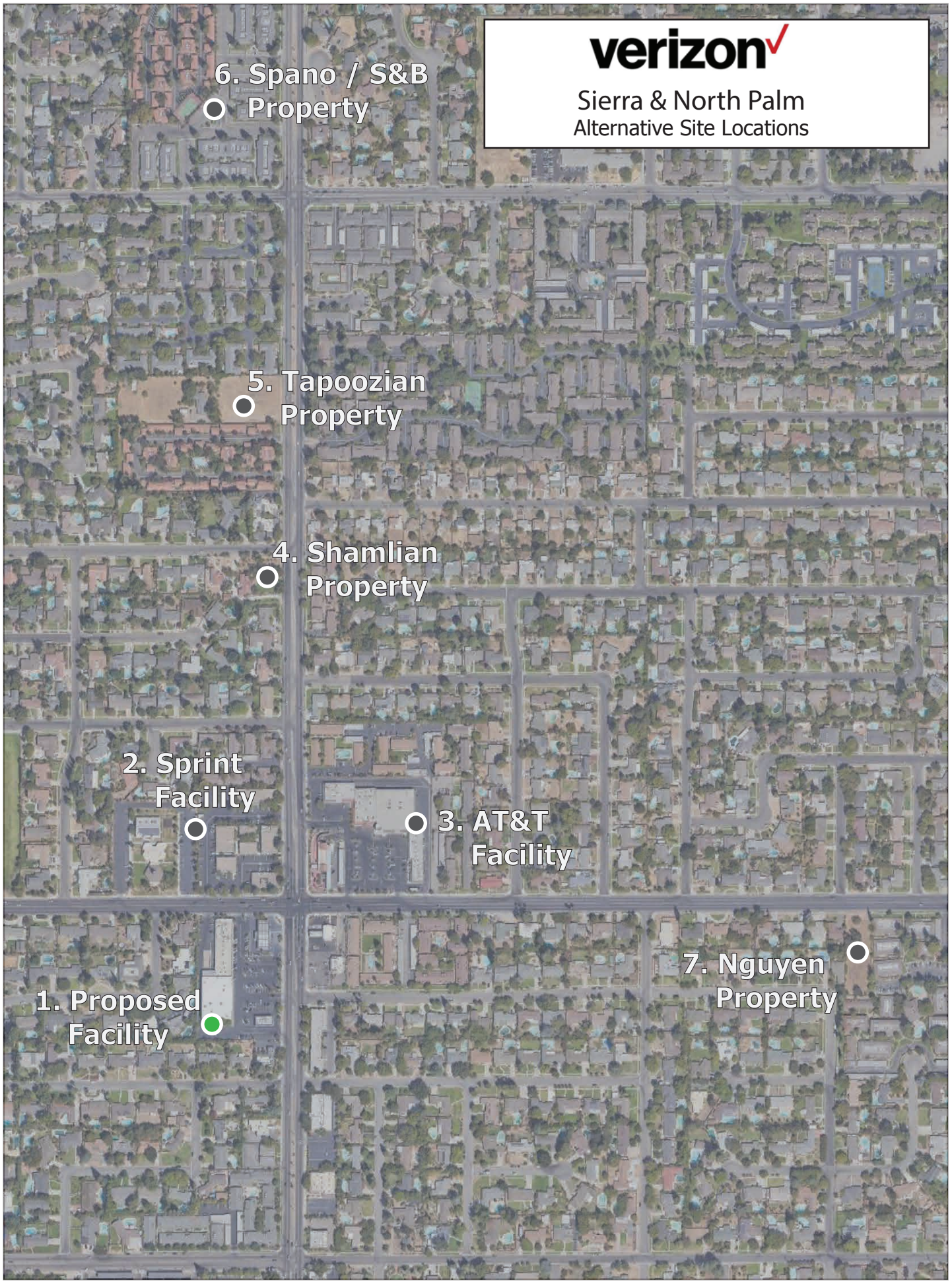
Verizon Wireless considered placement of a new facility in this office parking lot, 0.65 miles north of the Proposed Facility. Verizon Wireless contacted the property owner regarding placement of a facility, but was unable to negotiate a lease with the owner. This is not a feasible alternative to the Proposed Facility.

7. Nguyen Property
Address: West Bullard Avenue
Zoning: Fresno County R1C (Unincorporated)

Verizon Wireless investigated this vacant parcel (APN 416-341-22) surrounded by residential zones on all four sides, 0.45 miles east of the Proposed Facility. With the parcel only approximately 100 feet wide, and residences directly adjacent to both sides and the rear, an 80-foot tower would be within approximately 55 feet of homes, posing visual impacts. This is not a less intrusive alternative to the Proposed Facility.

V. Conclusion

Verizon Wireless has reviewed the local commercial area and seven specific alternative locations to fill the Significant Gap in service in the northwest Fresno area. Based upon the values expressed in City of Fresno regulations, the Proposed Facility clearly constitutes the least intrusive feasible location for Verizon Wireless's new facility.


verizon
Sierra & North Palm
Alternative Site Locations
6. Spano / S&B Property
5. Tapoozian Property
4. Shamlian Property
2. Sprint Facility
3. AT&T Facility
1. Proposed Facility
7. Nguyen Property