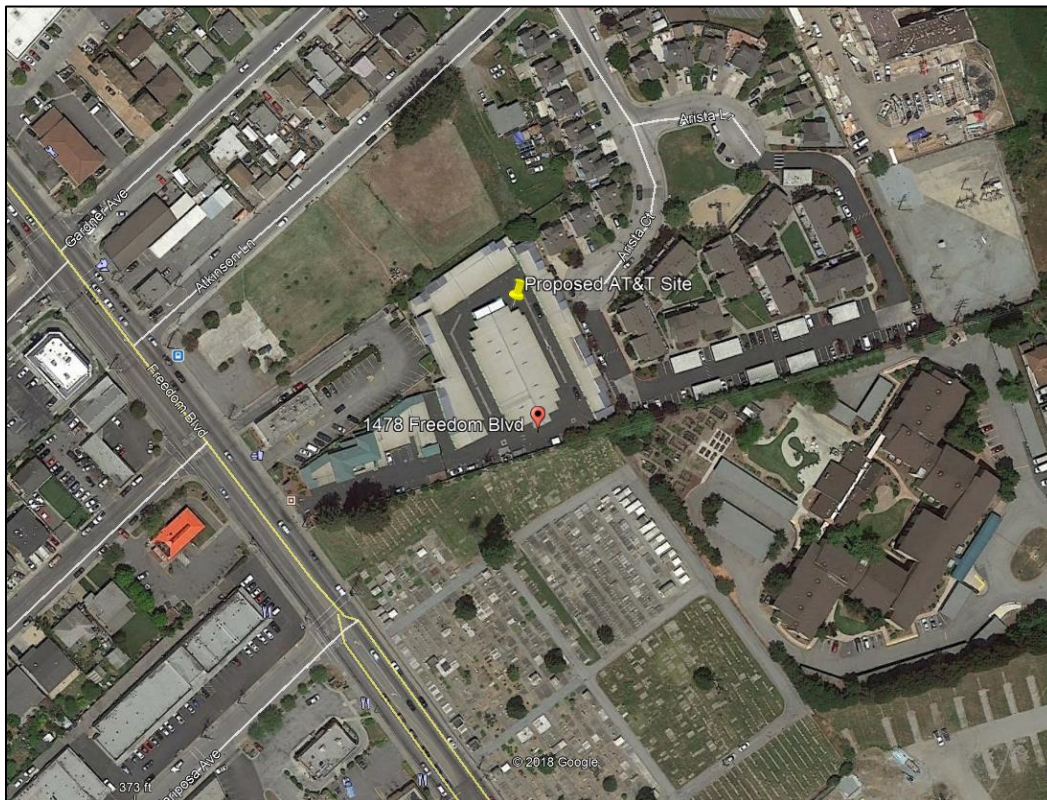




Global RF SolutionsSM
PREDICT, DETECT, PROTECT

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Evaluation of Wireless Facility Submittal



**AT&T Wireless Site
"Freedom Blvd"
Watsonville, CA**

LIMITED WARRANTY

Global RF Solutions warrants that this analysis was performed using substantially the methods that are referenced and described in this report and based entirely upon the information on the antenna site that was provided by AT&T. Global RF Solutions disclaims all other warranties either expressed or implied, including, but not limited to, implied warranties of merchantability and fitness for a particular purpose.

In no event will Global RF Solutions be liable to you or by any other person for damages, including any loss of profits, lost savings, or other special, exemplary, punitive, incidental or consequential damages arising out of your use or inability to use the analysis whether such claim is based on breach of warranty, contract, tort or other legal theory and regardless of the causes of such loss or damages. In no event shall Global RF Solutions entire liability to you under this Agreement exceed an amount equal to the price paid to for the analysis.

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1. INTRODUCTION

Ordinance 14-35.010 Purpose.

The Council finds that this Ordinance will protect and promote the public health, safety, welfare and the aesthetic quality of the community when considering applications for telecommunications facilities and not regulate the placement, construction and modification of personal wireless service facilities on the basis of environmental effects of radio frequency emissions to the extent that such facilities comply with the Federal Communications Commission (FCC) regulations concerning such emissions. This chapter is intended to foster, through appropriate zoning and land use controls, a competitive economic environment for telecommunications carriers that does not unreasonably discriminate among providers of functionally equivalent services and shall not prohibit or have the effect of prohibiting the provisions of personal wireless services. Additionally, this chapter is intended to protect Watsonville's built and natural environment by promoting compatible urban design standards for telecommunications facilities.

(Ord. 1153-03 C-M, eff. April 24, 2003)

The City of Watsonville, CA Ordinance 14-35 deals with Telecommunications Uses within the city. The City of Watsonville has chosen Global RF Solutions to evaluate reports submitted on behalf of AT&T per section 14-35.080 (a) (7) of the ordinance. Marvin Wessel is the CEO of Global RF Solutions and is the engineer that personally reviewed all reports and data associated with this AT&T "Freedom Blvd" submittal to the City of Watsonville and is the author of this report.

The following reports have been submitted to the City of Watsonville on behalf of AT&T and reviewed by Global RF Solutions:

- Radio Frequency Emissions Compliance Report For AT&T Mobility (dated 12-19-2019)
- Alternative Site Location Analysis (dated 7/15/2019)
- Project Description & Justification Letter (dated 7-15-2019)

The requested Scope of Work for this review is listed below:

1. Evaluate the veracity of the radio frequency (RF) analysis conducted by Waterford Consultants.
2. Confirm probable outputs of the proposed telecommunications site, and compare those outputs with the maximum allowable radio frequency outputs allowed by the Federal Communications Commission (FCC).
3. Evaluate the veracity of the written statement indicating the technical reasons why there is no alternative collocation site/ facility available.
4. Evaluate the veracity of the search ring analysis that determined the area where a wireless site/facility must be placed to meet stated service needs.
5. Evaluate the report detailing operational and capacity needs of the provider's system within the City of Watsonville and the immediate areas adjacent to the City, including why and how the proposed site is technically necessary to address current demand and technical limitations of the current system.

2. EXECUTIVE SUMMARY

Global RF Solutions has carefully reviewed each report submitted on AT&T's behalf and have the following comments specific to the Scope of Work questions from Section 1.

1. Evaluate the veracity of the radio frequency (RF) analysis conducted by Waterford Consultants.
 - a. The Waterford report analysis is confirmed to be thorough and complete. Clear documentation has predicted that the FCC Public limit will not be exceeded in any readily accessible location on the ground (8.5702% FCC Public limit maximum). Any rooftops adjacent to the site will not exceed the FCC Public limit as well (12.5926% FCC Public limit maximum).
 - b. RF Alerting signage was also recommended for workers accessing the mono-pine in areas not considered "readily accessible" to the general public.
2. Confirm probable outputs of the proposed telecommunications site, and compare those outputs with the maximum allowable radio frequency outputs allowed by the Federal Communications Commission (FCC).
 - a. I performed an independent analysis of this proposed site installation and similar results were obtained by utilizing the RoofView™ calculation software (see figure 3a).
3. Evaluate the veracity of the written statement indicating the technical reasons why there is no alternative collocation site/ facility available.
 - a. The search ring area is small and apparently only one available location within the search ring to build a site. No collocation opportunities appear to be available per the "Alternative Site Location Analysis" supplied.
4. Evaluate the veracity of the search ring analysis that determined the area where a wireless site/facility must be placed to meet stated service needs.
 - a. The search ring plots (figures 3c and 3d) provided by AT&T show the neighboring sites coverage as well as the proposed coverage including the proposed Freedom Blvd site.
 - b. Global RF Solutions does not possess the ATOLL software utilized by AT&T to produce coverage plots nor do we have the technical parameters they used to generate these plots. However, the plots appear to be appropriate representations of proper RF propagation analysis based on my experience using propagation software and the terrain to provide coverage for.
5. Evaluate the report detailing operational and capacity needs of the provider's system within the City of Watsonville and the immediate areas adjacent to the City, including why and how the proposed site is technically necessary to address current demand and technical limitations of the current system.
 - a. A third party data Collection Company's plot (RootMetrics®) was used to analyze the quality of service (signal strength and data speed) in the area to be provided service by the new site build at the 1478 Freedom Blvd site. The empirical data collected by this company confirms that coverage for AT&T is only **Fair** and the data quality is **Slow** in the area to be served by this site (see figures 3e & 3f). It appears that the proposed site

should improve quality of service in the area identified as needing improvement by this new site build.

3. REPORT EVALUATION DISCUSSIONS

Waterford Consultants Report

The report contains an analysis of the readily accessible locations on the ground and adjacent rooftops. The report states that the FCC Public limits will not be exceeded in any area considered readily accessible. The report also recommends alerting signage to be placed at the worker access locations to the mono-pine (climbers, etc.).

I have prepared my independent analysis (figure 3a) with RoofView™ calculation software utilizing RF data (table 3a) supplied by Waterford Consultants. I have also determined that the FCC Public limit will not be exceeded at any readily accessible location near the proposed site. The recommendation for signage at the base of the monopine is also a prudent recommendation.

Table 3a. Data utilized for RoofView™ analysis.


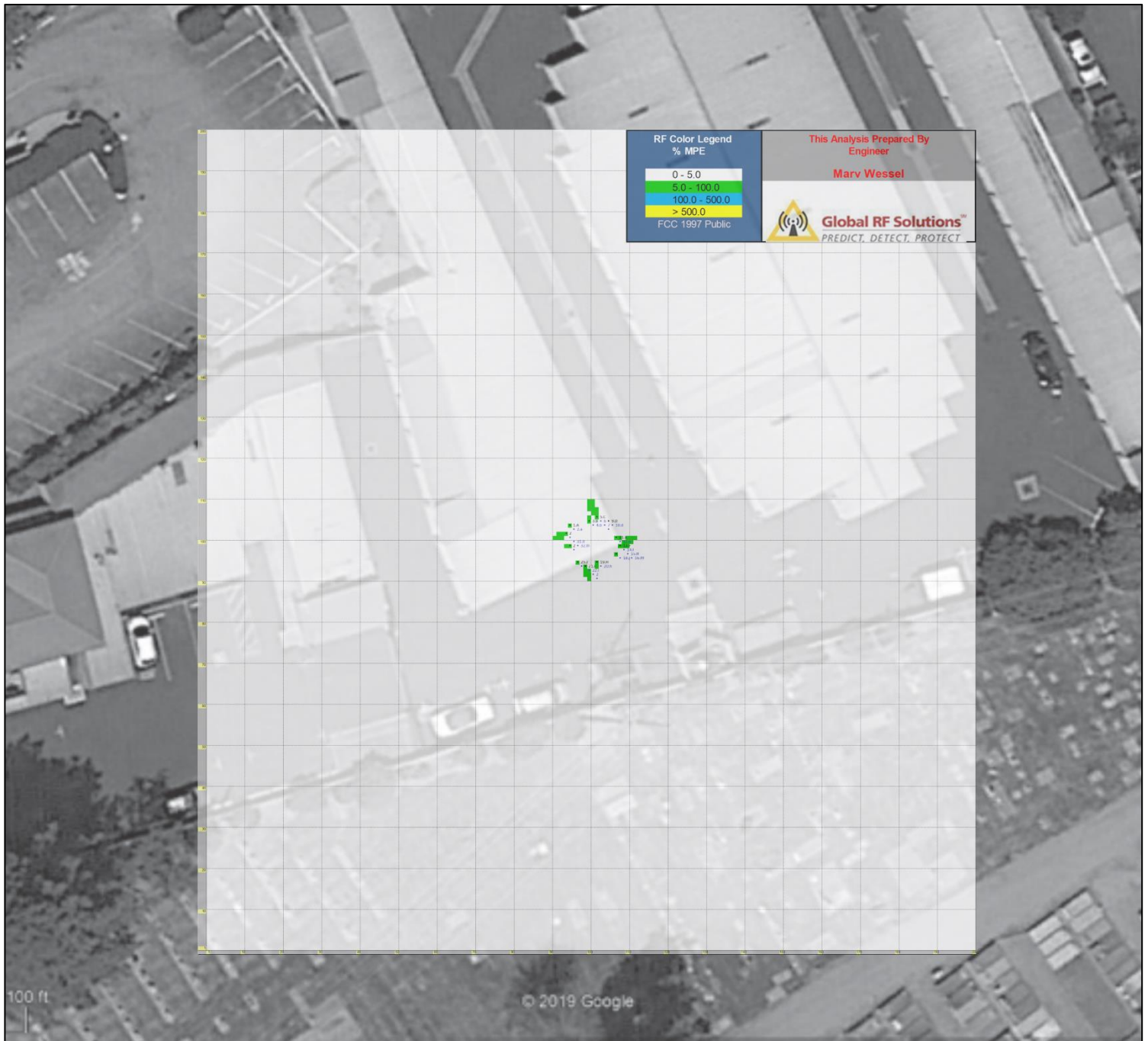
Antenna Data Table			Last File Imported-> AT&T freedom blvd.xlsx										•Update linking•			1.5 = ApHt Factor		
<div>S<div>S</div><div>S</div></div>			<div></div> <div>S</div>	<div>S</div> <div>S</div>		<div>S</div> <div>S</div> <div>S</div>			<div>S</div> <div>S</div> <div>S</div>	<div>S</div> <div>S</div> <div>S</div>	<div>S</div> <div>S</div> <div>S</div>	<div>S</div> <div>S</div> <div>S</div>	<div>S</div> <div>S</div> <div>S</div>	ver. 511-091316		<div>S</div>		
ID	Name	(MHz) Freq	Input Power	Calc Power	Mfg	Model	(ft) X	(ft) Y	(ft) Z	Type	(ft) ApHt	dBd Gain	BWdth Pt Dir	ON flag	Antenna Pixel X Y Z	Ant Num		
1A	AT&T	700.00000		80.0	CCI	TPA45R-KU6A	95.0	104.0	64.0		6.0	11.05 51;340	ON•	95	104 64.0	1		
2a	AT&T	2300.00000		100.0	CCI	TPA45R-KU6A	95.0	104.0	64.0		6.0	14.15 45;340	ON•	95	104 64.0	2		
3B	AT&T	700.00000		160.0	CCI	TPA45R-KU6A	100.0	105.0	64.0		6.0	11.05 51;340	ON•	100	105 64.0	3		
4b	AT&T	1900.00000		160.0	CCI	TPA45R-KU6A	100.0	105.0	64.0		6.0	13.85 45;340	ON•	100	105 64.0	4		
5C	AT&T	700.00000		160.0	CCI	TPA45R-KU6A	102.0	106.0	64.0		6.0	11.05 51;340	ON•	102	106 64.0	5		
6c	AT&T	850.00000		160.0	CCI	TPA45R-KU6A	102.0	106.0	64.0		6.0	12.15 48;340	ON•	102	106 64.0	6		
7cc	AT&T	1900.00000		160.0	CCI	TPA45R-KU6A	102.0	106.0	64.0		6.0	13.85 45;340	ON•	102	106 64.0	7		
8ccc	AT&T	2100.00000		160.0	CCI	TPA45R-KU6A	102.0	106.0	64.0		6.0	15.05 39;340	ON•	102	106 64.0	8		
9D	AT&T	700.00000		80.0	CCI	TPA45R-KU6A	105.0	105.0	64.0		6.0	13.85 45;340	ON•	105	105 64.0	9		
10d	AT&T	2300.00000		100.0	CCI	TPA45R-KU6A	105.0	105.0	64.0		6.0	14.15 45;70	ON•	105	105 64.0	10		
11E	AT&T	700.00000		160.0	CCI	TPA45R-KU6A	107.0	101.0	64.0		6.0	11.05 51;70	ON•	107	101 64.0	11		
12e	AT&T	1900.00000		160.0	CCI	TPA45R-KU6A	107.0	101.0	64.0		6.0	13.85 45;70	ON•	107	101 64.0	12		
13F	AT&T	700.00000		160.0	CCI	TPA45R-KU6A	108.0	99.0	64.0		6.0	11.05 51;70	ON•	108	99 64.0	13		
14f	AT&T	850.00000		160.0	CCI	TPA45R-KU6A	108.0	99.0	64.0		6.0	12.15 48;70	ON•	108	99 64.0	14		
15ff	AT&T	1900.00000		160.0	CCI	TPA45R-KU6A	108.0	99.0	64.0		6.0	13.85 45;70	ON•	108	99 64.0	15		
16fff	AT&T	2100.00000		160.0	CCI	TPA45R-KU6A	108.0	99.0	64.0		6.0	15.05 39;70	ON•	108	99 64.0	16		
17G	AT&T	700.00000		80.0	CCI	TPA45R-KU6A	107.0	97.0	64.0		6.0	11.05 51;160	ON•	107	97 64.0	17		
18g	AT&T	2300.00000		100.0	CCI	TPA45R-KU6A	107.0	97.0	64.0		6.0	14.15 45;160	ON•	107	97 64.0	18		
19H	AT&T	700.00000		160.0	CCI	TPA45R-KU6A	102.0	95.0	64.0		6.0	11.05 51;160	ON•	102	95 64.0	19		
20h	AT&T	1900.00000		160.0	CCI	TPA45R-KU6A	102.0	95.0	64.0		6.0	13.85 45;160	ON•	102	95 64.0	20		
21I	AT&T	700.00000		160.0	CCI	TPA45R-KU6A	99.0	94.0	64.0		6.0	11.05 51;160	ON•	99	94 64.0	21		
22i	AT&T	850.00000		160.0	CCI	TPA45R-KU6A	99.0	94.0	64.0		6.0	12.15 48;160	ON•	99	94 64.0	22		
23ii	AT&T	1900.00000		160.0	CCI	TPA45R-KU6A	99.0	94.0	64.0		6.0	13.85 45;160	ON•	99	94 64.0	23		
24iii	AT&T	2100.00000		160.0	CCI	TPA45R-KU6A	99.0	94.0	64.0		6.0	15.05 39;160	ON•	99	94 64.0	24		
25J	AT&T	700.00000		80.0	CCI	TPA45R-KU6A	97.0	95.0	64.0		6.0	11.05 51;250	ON•	97	95 64.0	25		
26j	AT&T	2300.00000		100.0	CCI	TPA45R-KU6A	97.0	95.0	64.0		6.0	14.15 45;250	ON•	97	95 64.0	26		
27K	AT&T	700.00000		160.0	CCI	TPA45R-KU6A	95.0	99.0	64.0		6.0	11.05 51;250	ON•	95	99 64.0	27		
28k	AT&T	1900.00000		160.0	CCI	TPA45R-KU6A	95.0	99.0	64.0		6.0	13.85 45;250	ON•	95	99 64.0	28		
29L	AT&T	700.00000		160.0	CCI	TPA45R-KU6A	94.0	102.0	64.0		6.0	11.05 51;250	ON•	94	102 64.0	29		
30I	AT&T	850.00000		160.0	CCI	TPA45R-KU6A	94.0	102.0	64.0		6.0	12.15 48;250	ON•	94	102 64.0	30		
31II	AT&T	1900.00000		160.0	CCI	TPA45R-KU6A	94.0	102.0	64.0		6.0	13.85 45;250	ON•	94	102 64.0	31		
32III	AT&T	2100.00000		160.0	CCI	TPA45R-KU6A	94.0	102.0	64.0		6.0	15.05 39;250	ON•	94	102 64.0	32		

Figure 3a. RoofView™ calculated RF Exposure plot for FCC Public limit.

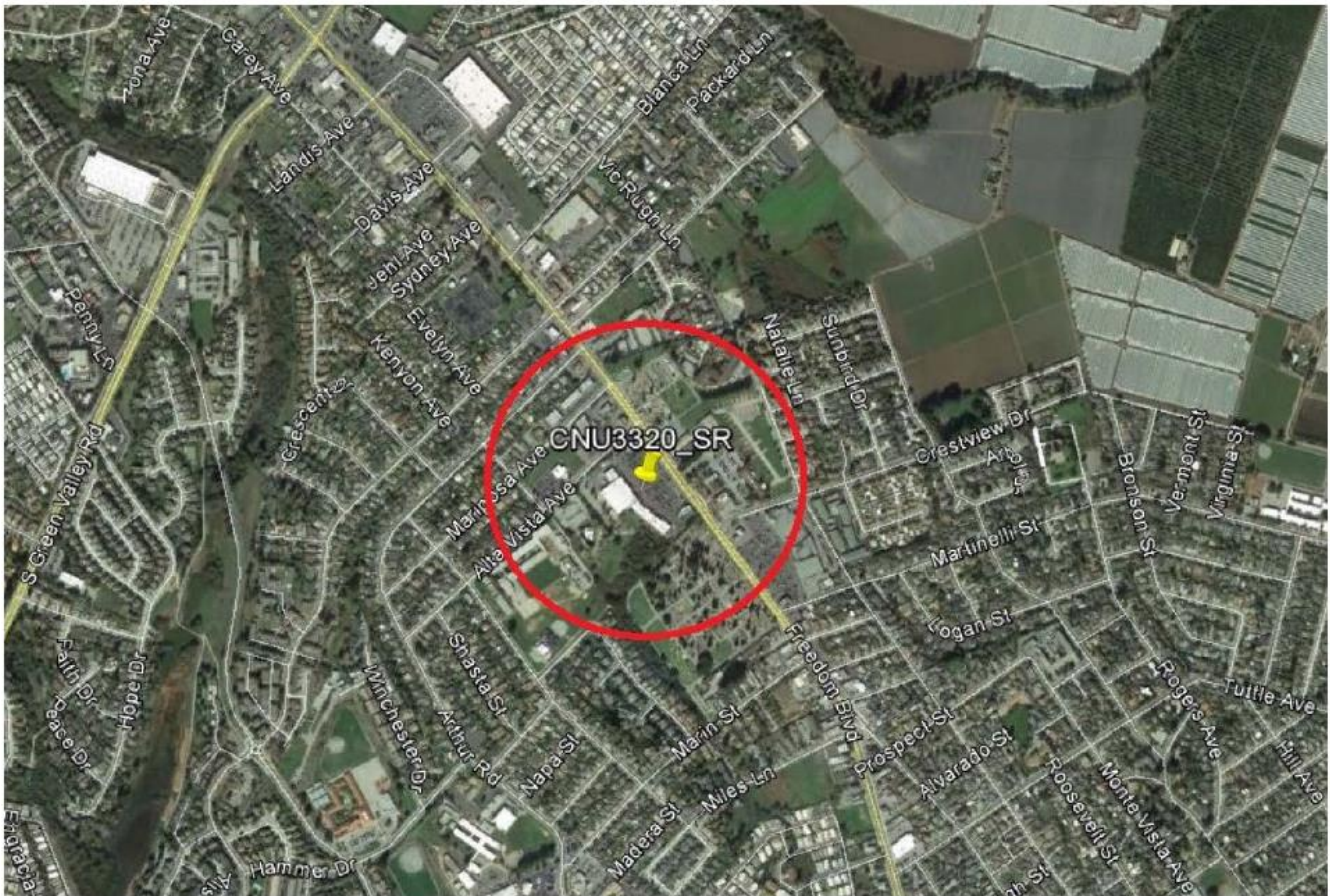


Search Ring Analysis/Operational Needs

AT&T has provided a description of an area with marginal coverage (figure 3b) and coverage plots without the proposed site (figure 3c) and a coverage plot with the proposed site (figure 3d) showing improved coverage to the area described having marginal coverage.

Figure 3b. Area identified as needing improvement in coverage and capacity by AT&T (1478 Freedom Blvd).

CCL03320 – Service Improvement Objective



The purpose of the proposed site is to improve coverage and capacity in the area of Watsonville near the cross street of Freedom Boulevard and Alta vista Avenue. For the best desired improvement to coverage we need to remain within or as close to the circle shown in the image above as possible.

Figure 3c. Current AT&T coverage without the 1478 Freedom Blvd site.

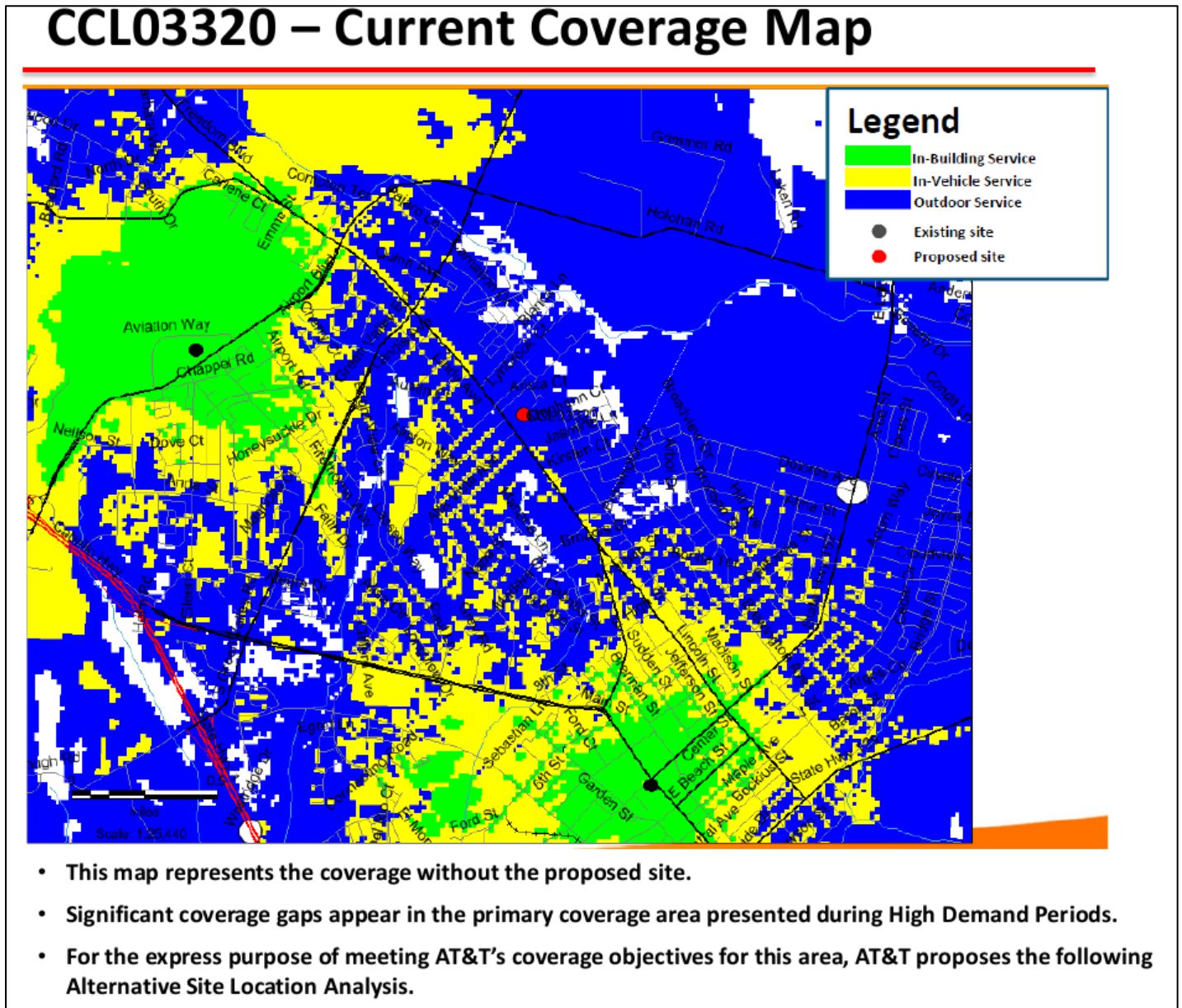
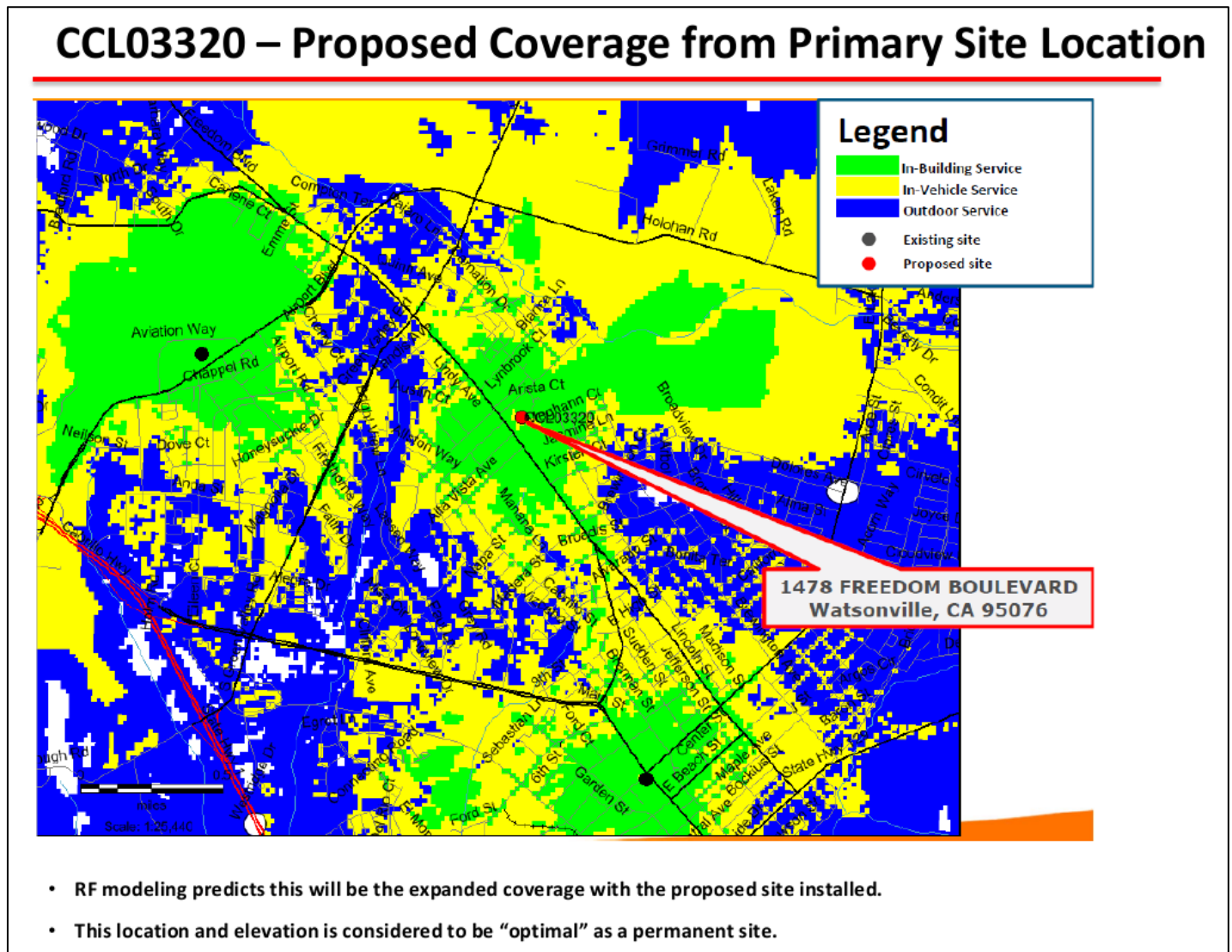


Figure 3d. Predicted AT&T coverage with the 1478 Freedom Blvd site operational.



Empirical data (observed data) is one of the best methods to determine system performance or verify a need for coverage improvement in a wireless system. This plot is from an objective third party (RootMetrics®) displaying the empirical data for coverage in the area surrounding the proposed site. The plot (figure 3e) confirms that coverage from AT&T is only rated “Fair” or nonexistent (untested) in the area surrounding the proposed site. The next plot (figure 3f) measures the data quality to be “Slow” or untested.

Figure 3e. Tested signal strength (source RootMetrics®) in the area identified by AT&T needing coverage improvement.

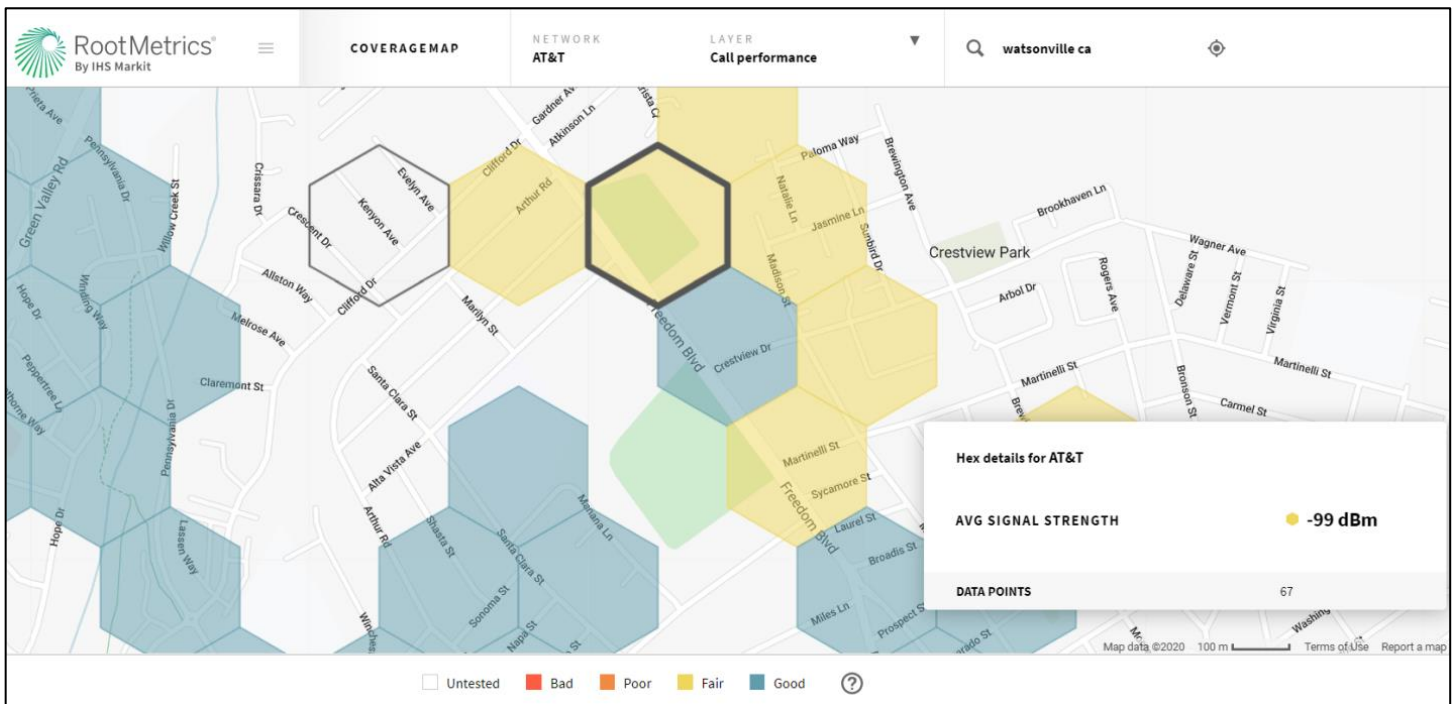
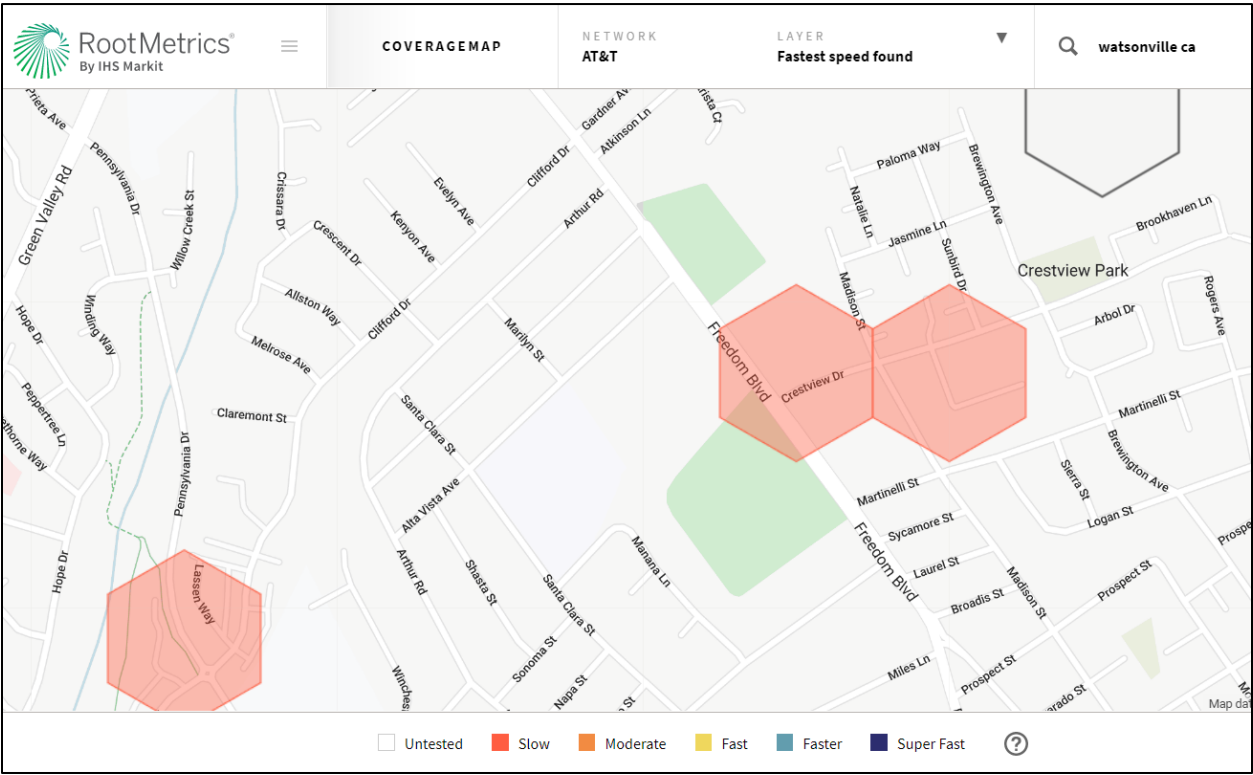


Figure 3f. Tested data plot (source RootMetrics®) for current AT&T data speed in the proposed coverage area.



4. AT&T ATTACHMENTS



Radio Frequency Emissions Compliance Report For AT&T Mobility

Site Name:	Freedom Boulevard	Site Structure Type:	Monopine
Address:	1478 Freedom Boulevard	Latitude:	36.929667
	Watsonville, CA	Longitude:	-121.766375
Report Date:	January 15, 2020	Project:	New Build

Compliance Statement

Based on information provided by AT&T Mobility and predictive modeling, the Freedom Boulevard installation proposed by AT&T Mobility will be compliant with Radiofrequency Radiation Exposure Limits of 47 C.F.R. §§ 1.1307(b)(3) and 1.1310. RF alerting signage and restricting access to the antenna to authorized personnel that have completed RF safety training is required for Occupational environment compliance. The proposed operation will not expose members of the General Public to hazardous levels of RF energy at ground level or in adjacent buildings.

Certification

I, David H. Kiser, am the reviewer and approver of this report and am fully aware of and familiar with the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation, specifically in accordance with FCC's OET Bulletin 65. I have reviewed this Radio Frequency Exposure Assessment report and believe it to be both true and accurate to the best of my knowledge.

David H. Kiser, P. E. 2020.01.15 11:38:53 -05'00'



General Summary

The compliance framework is derived from the Federal Communications Commission (FCC) Rules and Regulations for preventing human exposure in excess of the applicable Maximum Permissible Exposure ("MPE") limits. At any location at this site, the power density resulting from each transmitter may be expressed as a percentage of the frequency-specific limits and added to determine if 100% of the exposure limit has been exceeded. The FCC Rules define two tiers of permissible exposure differentiated by the situation in which the exposure takes place and/or the status of the individuals who are subject to exposure. General Population / Uncontrolled exposure limits apply to those situations in which persons may not be aware of the presence of electromagnetic energy, where exposure is not employment-related, or where persons cannot exercise control over their exposure. Occupational / Controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment, have been made fully aware of the potential for exposure, and can exercise control over their exposure. Based on the criteria for these classifications, the FCC General Population limit is considered to be a level that is safe for continuous exposure time. The FCC General Population limit is 5 times more restrictive than the Occupational limits.

Table 1: FCC Limits

Frequency (MHz)	<i>Limits for General Population/ Uncontrolled Exposure</i>		<i>Limits for Occupational/ Controlled Exposure</i>	
	Power Density (mW/cm ²)	Averaging Time (minutes)	Power Density (mW/cm ²)	Averaging Time (minutes)
30-300	0.2	30	1	6
300-1500	f/1500	30	f/300	6
1500-100,000	1.0	30	5.0	6

f=Frequency (MHz)

In situations where the predicted MPE exceeds the General Population threshold in an accessible area as a result of emissions from multiple transmitters, FCC licensees that contribute greater than 5% of the aggregate MPE share responsibility for mitigation.

Based on the computational guidelines set forth in FCC OET Bulletin 65, Waterford Consultants, LLC has developed software to predict the overall Maximum Permissible Exposure possible at any location given the spatial orientation and operating parameters of multiple RF sources. The power density in the Far Field of an RF source is specified by OET-65 Equation 5 as follows:

$$S = \frac{EIRP}{4 \cdot \pi \cdot R^2} \text{ (mW/cm}^2\text{)}$$

where EIRP is the Effective Radiated Power relative to an isotropic antenna and R is the distance between the antenna and point of study. Additionally, consideration is given to the manufacturers' horizontal and vertical antenna patterns as well as radiation reflection. At any location, the predicted power density in the Far Field is the spatial average of points within a 0 to 6-foot vertical profile that a person would occupy. Near field power density is based on OET-65 Equation 20 stated as

$$S = \left(\frac{180}{\theta_{BW}} \right) \cdot \frac{100 \cdot P_{in}}{\pi \cdot R \cdot h} \text{ (mW/cm}^2\text{)}$$

where P_{in} is the power input to the antenna, θ_{BW} is the horizontal pattern beamwidth and h is the aperture length.

For any area in excess of 100% General Population MPE, access controls with appropriate RF alerting signage must be put in place and maintained to restrict access to authorized personnel. Signage must be posted to be visible upon approach from any direction to provide notification of potential conditions within these areas. Subject to other site security requirements, occupational personnel should be trained in RF safety and equipped with personal protective equipment (e.g. RF personal monitor) designed for safe work in the vicinity of RF emitters. Controls such as physical barriers to entry imposed by locked doors, hatches and ladders or other access control mechanisms may be supplemented by alarms that alert the individual and notify site management of a breach in access control. Waterford Consultants, LLC recommends that any work activity in these designated areas or in front of any transmitting antennas be coordinated with all wireless tenants.

Analysis

AT&T Mobility proposes the following installation at this location:

- INSTALL NEW ANTENNAS AND MISC EQUIPMENT ON NEW 75' TALL MONOPINE

The antenna will be mounted on a 75-foot Monopine with a centerline 67 feet above ground level. Proposed antenna operating parameters are listed in Appendix A. Other appurtenances such as GPS antennas, RRUs and hybrid cable below the antennas are not sources of RF emissions. No other antennas are known to be operating in the vicinity of this site.

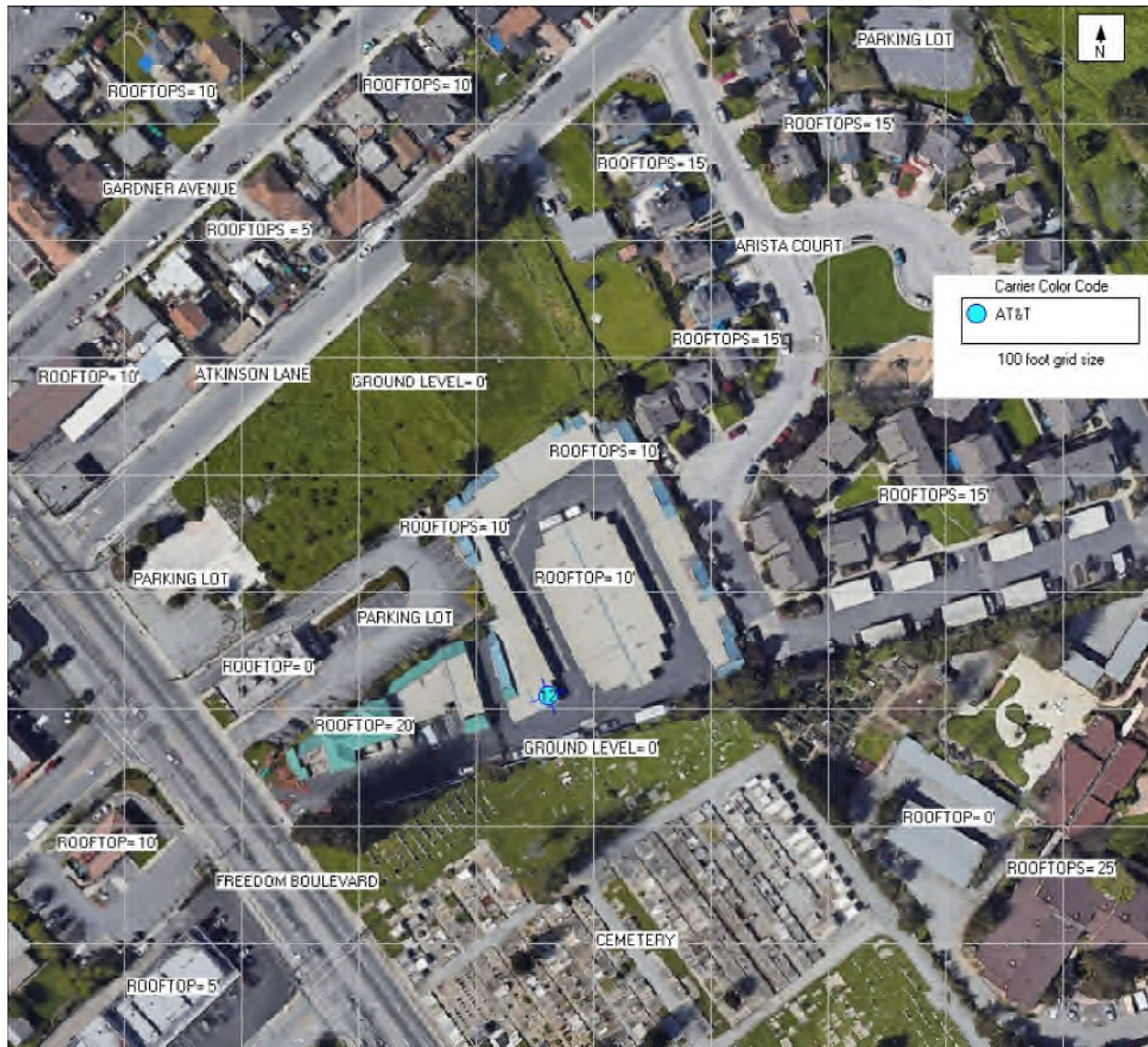


Figure 1: Antenna Locations

Power density decreases significantly with distance from any antenna. The panel-type antennas to be employed at this site are highly directional by design and the orientation in azimuth and mounting elevation, as documented, serves to reduce the potential to exceed MPE limits at any location other than directly in front of the antennas. For accessible areas at ground level, the maximum predicted power density level resulting from all AT&T Mobility operations is 8.5702% of the FCC General Population limits. Incident at adjacent

buildings depicted in Figure 1, the maximum predicted power density level resulting from all AT&T Mobility operations is 12.5926% of the FCC General Population limits. The proposed operation will not expose members of the General Public to hazardous levels of RF energy at ground level or in adjacent buildings.

Waterford Consultants, LLC recommends posting RF alerting signage with contact information (Caution 2B) at the base of the Monopine to inform authorized climbers of potential conditions near the antennas. These recommendations are depicted in Figure 2.



Figure 2: Mitigation Recommendations
Caution 2B posted at base of monopine



Appendix A: Operating Parameters Considered in this Analysis

Antenna #:	Carrier:	Manufacturer	Pattern:	Band:	Mech Az (deg):	Mech DT (deg):	H BW (deg):	Length (ft):	TPO (W):	Channels:	Loss (dB):	Gain (dBd):	ERP (W):	EIRP (W):	Rad Center (ft):
1	AT&T	CCI	TPA45R-KU6A 02DT	700	340	0	51	6.0	40	4	0	11.05	2038	3343	67
1	AT&T	CCI	TPA45R-KU6A 02DT	850	340	0	48	6.0	40	4	0	12.15	2625	4306	67
1	AT&T	CCI	TPA45R-KU6A 03DT	1900	340	0	45	6.0	40	4	0	13.85	3883	6370	67
1	AT&T	CCI	TPA45R-KU6A 03DT	2100	340	0	39	6.0	40	4	0	15.05	5118	8397	67
2	AT&T	CCI	TPA45R-KU6A 02DT	700	340	0	51	6.0	40	4	0	11.05	2038	3343	67
2	AT&T	CCI	TPA45R-KU6A 03DT	1900	340	0	45	6.0	40	4	0	13.85	3883	6370	67
3	AT&T	CCI	TPA45R-KU6A 02DT	700	340	0	51	6.0	40	2	0	11.05	1019	1671	67
3	AT&T	CCI	TPA45R-KU6A 03DT	2300	340	0	45	6.0	25	4	0	14.15	2600	4266	67
4	AT&T	CCI	TPA45R-KU6A 02DT	700	250	0	51	6.0	40	4	0	11.05	2038	3343	67
4	AT&T	CCI	TPA45R-KU6A 02DT	850	250	0	48	6.0	40	4	0	12.15	2625	4306	67
4	AT&T	CCI	TPA45R-KU6A 03DT	1900	250	0	45	6.0	40	4	0	13.85	3883	6370	67
4	AT&T	CCI	TPA45R-KU6A 03DT	2100	250	0	39	6.0	40	4	0	15.05	5118	8397	67
5	AT&T	CCI	TPA45R-KU6A 02DT	700	250	0	51	6.0	40	4	0	11.05	2038	3343	67
5	AT&T	CCI	TPA45R-KU6A 03DT	1900	250	0	45	6.0	40	4	0	13.85	3883	6370	67
6	AT&T	CCI	TPA45R-KU6A 02DT	700	250	0	51	6.0	40	2	0	11.05	1019	1671	67
6	AT&T	CCI	TPA45R-KU6A 03DT	2300	250	0	45	6.0	25	4	0	14.15	2600	4266	67
7	AT&T	CCI	TPA45R-KU6A 02DT	700	160	0	51	6.0	40	4	0	11.05	2038	3343	67
7	AT&T	CCI	TPA45R-KU6A 02DT	850	160	0	48	6.0	40	4	0	12.15	2625	4306	67
7	AT&T	CCI	TPA45R-KU6A 03DT	1900	160	0	45	6.0	40	4	0	13.85	3883	6370	67
7	AT&T	CCI	TPA45R-KU6A 03DT	2100	160	0	39	6.0	40	4	0	15.05	5118	8397	67
8	AT&T	CCI	TPA45R-KU6A 02DT	700	160	0	51	6.0	40	4	0	11.05	2038	3343	67
8	AT&T	CCI	TPA45R-KU6A 03DT	1900	160	0	45	6.0	40	4	0	13.85	3883	6370	67
9	AT&T	CCI	TPA45R-KU6A 02DT	700	160	0	51	6.0	40	2	0	11.05	1019	1671	67
9	AT&T	CCI	TPA45R-KU6A 03DT	2300	160	0	45	6.0	25	4	0	14.15	2600	4266	67
10	AT&T	CCI	TPA45R-KU6A 02DT	700	70	0	51	6.0	40	4	0	11.05	2038	3343	67
10	AT&T	CCI	TPA45R-KU6A 02DT	850	70	0	48	6.0	40	4	0	12.15	2625	4306	67

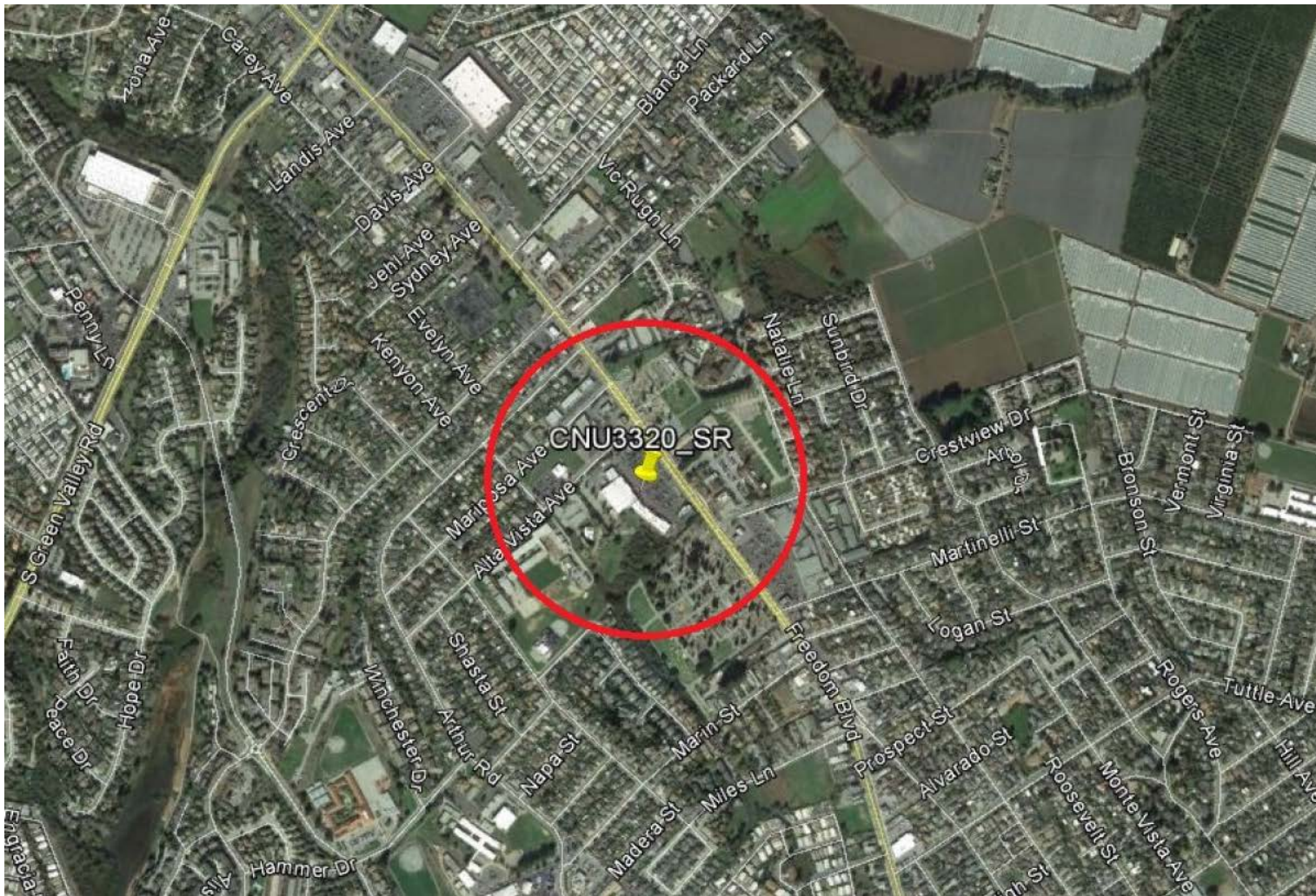
Freedom Boulevard - New Build 01152020

Antenna #:	Carrier:	Manufacturer	Pattern:	Band:	Mech Az (deg):	Mech DT (deg):	H BW (deg):	Length (ft):	TPO (W):	Channels:	Loss (dB):	Gain (dBd):	ERP (W):	EIRP (W):	Rad Center (ft):
10	AT&T	CCI	TPA45R-KU6A 03DT	1900	70	0	45	6.0	40	4	0	13.85	3883	6370	67
10	AT&T	CCI	TPA45R-KU6A 03DT	2100	70	0	39	6.0	40	4	0	15.05	5118	8397	67
11	AT&T	CCI	TPA45R-KU6A 02DT	700	70	0	51	6.0	40	4	0	11.05	2038	3343	67
11	AT&T	CCI	TPA45R-KU6A 03DT	1900	70	0	45	6.0	40	4	0	13.85	3883	6370	67
12	AT&T	CCI	TPA45R-KU6A 02DT	700	70	0	51	6.0	40	2	0	11.05	1019	1671	67
12	AT&T	CCI	TPA45R-KU6A 03DT	2300	70	0	45	6.0	25	4	0	14.15	2600	4266	67

CCL03320 – Freedom Blvd
1478 Freedom Blvd, Watsonville, CA 95076

Alternative Site Location Analysis

CCL03320 – Service Improvement Objective



The purpose of the proposed site is to improve coverage and capacity in the area of Watsonville near the cross street of Freedom Boulevard and Alta vista Avenue. For the best desired improvement to coverage we need to remain within or as close to the circle shown in the image above as possible.

CCL03320 – Area Map



Locations Analyzed:

Project Location: Public Storage, 1478 Freedom Blvd, Watsonville, CA 95076

Alternative Locations Analyzed:

1. Wells Fargo, 1503 Freedom Blvd, Watsonville, CA 95076

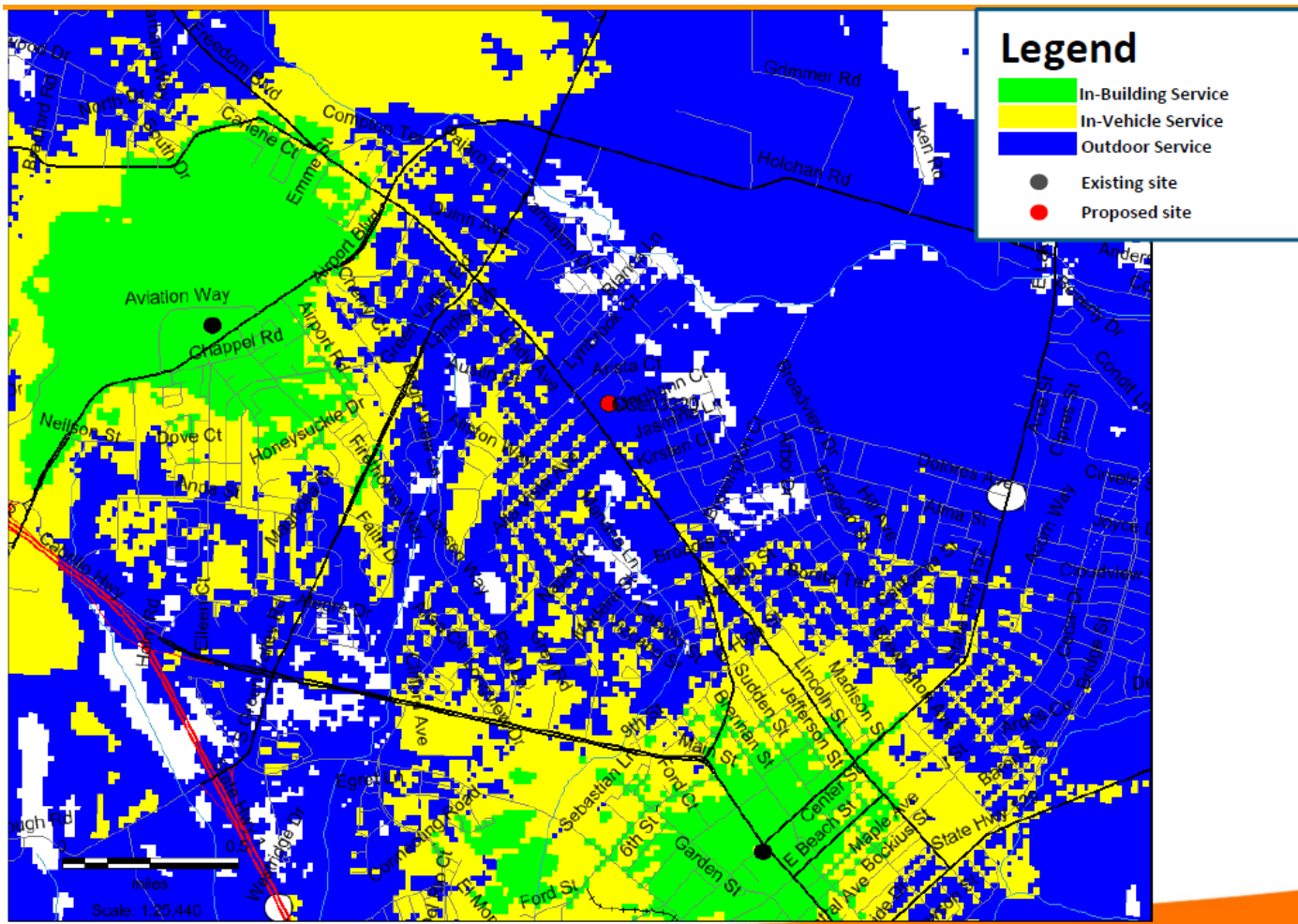
CCL03320 – Selection Process

Proposed Site Location



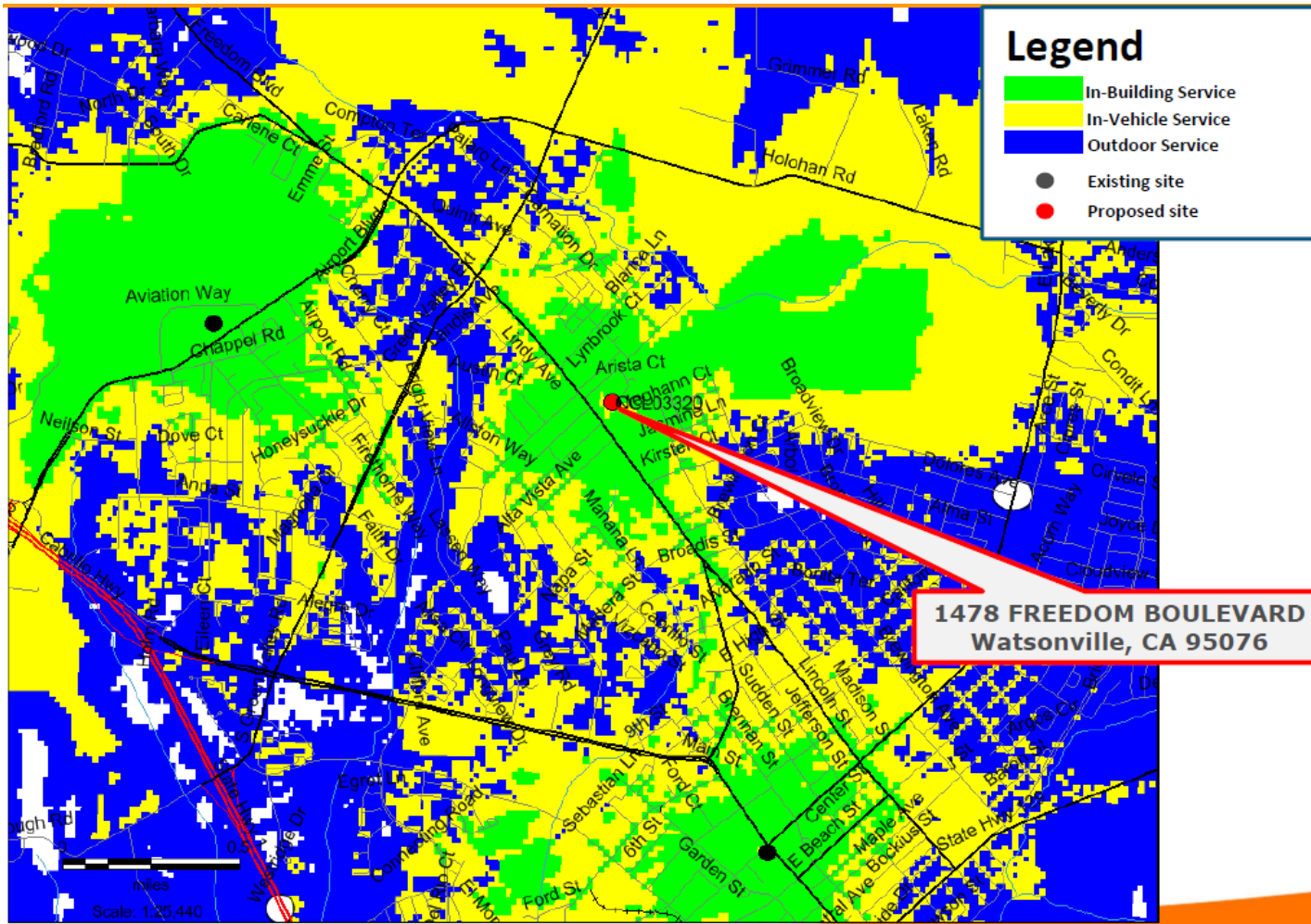
- Upon review of the region, AT&T found only one potential location within or near to our area of interest that might provide collocation at 1503 Freedom Boulevard; however, upon physically visiting the site it was determined that the data was incorrect as there was no existing tower at the location. In addition, this location was outside the main area of interest and therefore a new build here would be inferior to a location closer to our interest area. Therefore, this alternative was discarded.
- Once the potential collocation site above was determined unsuitable we determined that a new build tower in the area was going to be necessary. We reached out via phone calls and physical visits and only identified one interested property owner located at 1478 Freedom Boulevard. This became our selected site for our proposal. This site location is pictured above.

CCL03320 – Current Coverage Map



- This map represents the coverage without the proposed site.
- Significant coverage gaps appear in the primary coverage area presented during High Demand Periods.
- For the express purpose of meeting AT&T's coverage objectives for this area, AT&T proposes the following Alternative Site Location Analysis.

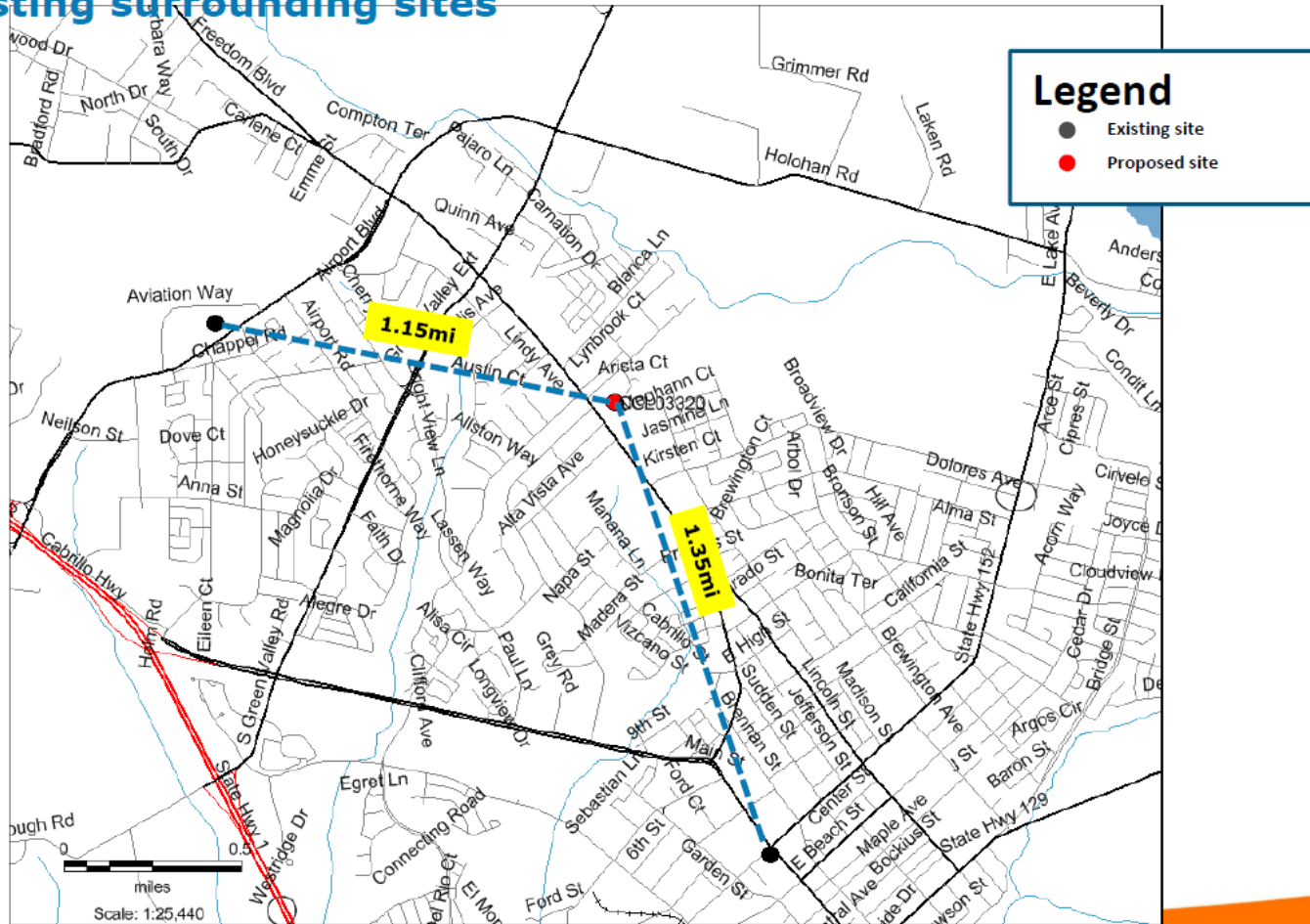
CCL03320 – Proposed Coverage from Primary Site Location



- RF modeling predicts this will be the expanded coverage with the proposed site installed.
- This location and elevation is considered to be “optimal” as a permanent site.

CCL03320 – Existing Surrounding Sites

Existing surrounding sites



- This map represents the location of existing on air sites surrounding the proposed site location

Conclusion

Existing



Proposed



Based on AT&T's analysis of alternative sites, our engineering staff has confirmed that the Primary site location at 1478 Freedom Boulevard remains the most appropriate site for new build construction in this area.

About this Statement

RF Engineer – Asad Shahbaz

646-369-2573

RF Tools

- **ATOLL**

The ALT Sites Analysis is compiled using a wireless coverage prediction tool from Forsk called ATOLL. The tool has several GIS layers as inputs such as ground clutter data and average ground elevation height. The tool also knows about our antennas that we use for the cell sites and the transmit powers and everything in the link budget. This tool simulates what a customer will receive as a signal power. This tool is used to compare future site choices so that the optimal coverage can be attained.

- **Google Earth Pro**

A powerful GIS tool which is used to overlay the ATOLL prediction and drive test data. With this data and the topography models in this program, further analysis of data and graphic displays of coverage areas can be generated for reference.



Existing



Proposed



view from property looking northeast at site

Existing



Proposed



view from Anderson Valley Way looking northeast at site

Existing



Proposed



view from Peachland Road looking northwest at site

Existing



Proposed



view from Dear Meadows Road looking northwest at site



July 15, 2019

Project Description & Justification Statement

Re: Proposed new AT&T Wireless Facility at: 1478 Freedom Boulevard, Watsonville, CA 95076;
APN: 019-226-13-000

Project Description

The proposed project consists of installing a new unmanned telecommunication facility consisting of a 10' x 33'-8" AT&T Lease area with 12 panel antennas installed on a proposed 75' tall monopine. And installing three small equipment cabinets inside a 10' x 22'-8" existing storage unit on the property.

Project Justification.

AT&T Wireless is currently improving the existing wireless network in City of Watsonville. The proposed installation of this new telecommunications facility will improve wireless coverage to the area and will also increase the network capacity. This network will provide an extremely valuable service to those who live, travel, and do business in the local area. It will give people the ability to call for emergency services in the event of an accident, the ability to communicate with employees or clients outside of the office, and the ability to communicate with family members when needed. The project engineer has indicated that the proposed location will provide the necessary coverage and capacity with the ability to hand off the wireless signal to the next telecommunications site. This will enable travelers and community members to have reliable and continuous wireless coverage.

- Operation of the project will occur 12 months a year, 7 days a week, 24 hours a day consistent with the continuous schedule of normal telephone company operations.
- The facility is "unmanned" and will be visited on an "as needed" basis only. No more than two technicians will ever attend the facility. Their schedule will be on a 24 hour basis. No more than two service vehicles, being either a van or a four-wheel drive vehicle, will visit the facility.
- The equipment located in the shelter will be used for telephone operations.
- There will be no supplies or materials stored on the site.
- In the applicants opinion the proposed facility does not cause any unsightly appearance. There will be no noise, glare, dust or odors associated with the facility with the exception of an emergency generator which will operate in the event of a commercial power failure.
- The communication equipment will be housed inside one of the already existing storage units.

Should you have questions regarding this project, please do not hesitate to contact me at (916) 296-2011.

Sincerely,

Sara King
Site Acquisition Specialist
Epic Wireless Group LLC