November 2, 2011

Mr. Jeff Bond
Community Development Director
City of Albany
1000 San Pablo Avenue
Albany, CA 94706

RE: Crown Castle/Verizon Wireless at 423 San Pablo Avenue

Dear Mr. Bond:

At the direction of the City of Albany, I have reviewed the current project documents and documentation for Crown Castle's proposal to modify its existing site, referenced above, on behalf of its client, Verizon Wireless.

The Project

Verizon Wireless is in the process of deploying an entirely new wireless network, called Long Term Evolution ("LTE"). This network, which operates in the 751 MHz band, is to provide high speed data communications. This is Verizon's version of a 4th generation ("4G") network. The changes proposed to this site are to deploy LTE communications northeast to the City of El Cerrito (from Section A of the antennas), and to the southeast within Albany (from Sector B of the antennas). Accordingly, about half the project is designed to serve only into El Cerrito.

MetroPCS is also collocated at this site below Verizon's antenna array, but none of the elements of the proposed project involve that carrier.

Proposed Visual Changes to the Site

Verizon, through Crown Castle proposes to provide the new LTE service by removing four (4) existing panel antennas center-mounted at ±59 feet above grade level ("AGL"), and to replace the four removed antennas with four (4) new physical enclosures contain six new antennas. Verizon also proposes to install eight (8) new coaxial cables in an unspecified location (whether inside the pole, or on the face of the pole is not disclosed in the plans dated October 7, 2010, hereinafter, the "Project Plans").

Additional equipment cabinets or racks to operate the new antennas will be required because of the deployment of the new LTE band. These necessary equipment cabinets or racks are not referenced or shown on any page of the Project Plans, nor are they discussed in the "Project Description" section on page T-1 of the Project Plans.

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Crown Castle has indicated to the City that the work proposed in merely maintenance of Verizon's exiting site. As described above, this project is in reality to deploy an entirely new radio service on a new band of operations for Verizon that has never been used at this existing site. It is my opinion that it is a significant mischaracterization to call this project one of maintenance.

Prior Review of this Project

On February 8, 2010, at the direction of the City, I reviewed the project plans as they then existed in a different configuration compared with the current project proposal. My review (the "KF 2010 Report") was focused on radio frequency emissions safety of the proposed project based on the proposed emissions analysis prepared by Hammett & Edison (H&E) on June 5, 2009 (the "2009 Report"). Because the project was related to determining planned compliance with the FCC rules, no on-site visit to the project site was requested by the City or required by me.

The radio frequency emissions data used by H&E in its 2009 Report was based on a six (6) antenna configuration (see page 2 of the 2009 Report in the section titled, "Site and Facility Description"). The current project uses a four (4) antenna configuration with different antenna models; therefore the 2009 Report is no longer current and applicable to the presently-proposed project. Accordingly, due to the changes in the proposed project and the expanded scope of my current review, the KF 2010 Report is not relevant to the pending application and should not be used or relied upon in any manner at this time.

Proposed Project Visual Impact

To determine the current site and proposed project and its visibility, I personally conducted a site visit to the project location on September 26, 2011.

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Figure 1. View of the site from Brighton Avenue between San Pablo Avenue and Kains Avenue. Photograph by J. Kramer.

Figure 1 highlights the existing visibility of the site. The site is also plainly visible along San Pablo Avenue from at least the Wells Fargo Bank to the north of the site to nearly Clay Street to the south. The non-conforming

height of the existing wireless tower dominates the landscape over all of the buildings in the area.

At Figure 2, below, is a photograph of the pole and antenna arrays (Verizon on top, with MetroPCS below) from just southwest of the site.

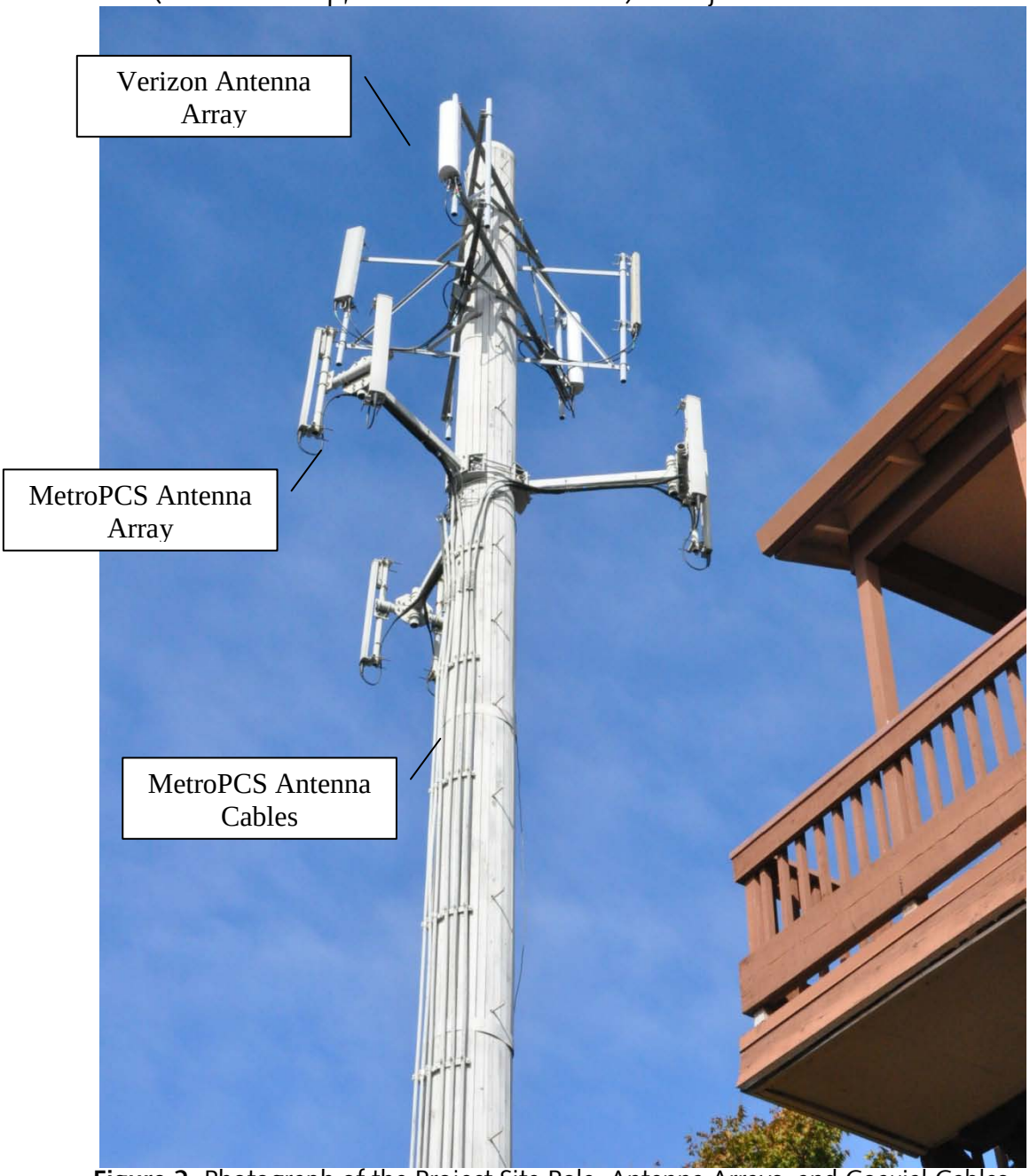


Figure 2. Photograph of the Project Site Pole, Antenna Arrays, and Coaxial Cables. Photograph by J. Kramer.

Figure 2 highlights several important issues regarding the current site and proposed project. First, the current Project Plans do not show where the

proposed eight (8) new coaxial cables will run. Given that the MetroPCS cables had to be installed on the face of the wood pole, and lacking disclosure about the coaxial cable location for Verizon's new antennas, it is possible that those cables will also have to be located on the face of the pole. Adding a substantial number of new cables to the face of the pole will substantially alter the visual impact of the current project in a negative manner. Figure 1 also serves to illustrate that the antenna cables are quite visible, but not represented in the Project Plans.

Figure 3, below, is a close up of the Verizon and MetroPCS antenna arrays as they currently exist.

Figure 3. Close-up photograph of the Project Site Antenna Arrays (Verizon on top).

The white arrow in Figure 3 points to Verizon wireless equipment that is not shown in the current plans. This equipment was also not shown in the 2009 Plans. The current Project Plans under-represent the amount of

equipment which Verizon has currently installed on the pole. They also under-represent the amount of cables and other non-antenna equipment that is likely to be installed in connection with the proposed project given that it is quite common for large elements such as "tower mounted amplifiers" to be installed adjacent to antennas.

Figure 4, below, taken from page A-3 of the current Project Plans, indicates that Verizon's cable will transit to the new panel antennas via a rear connector.

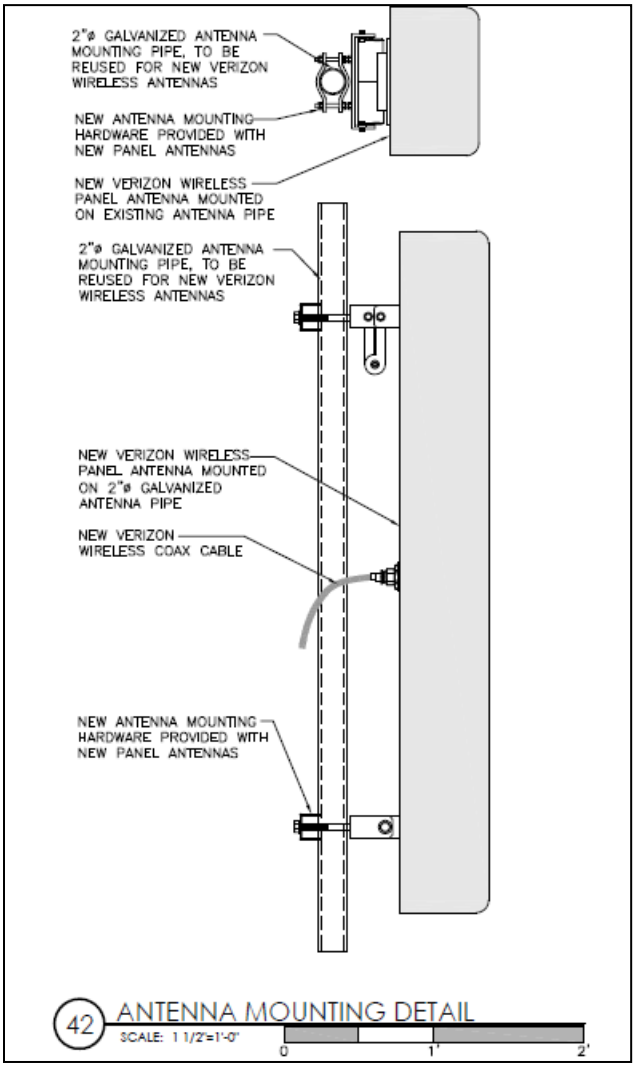
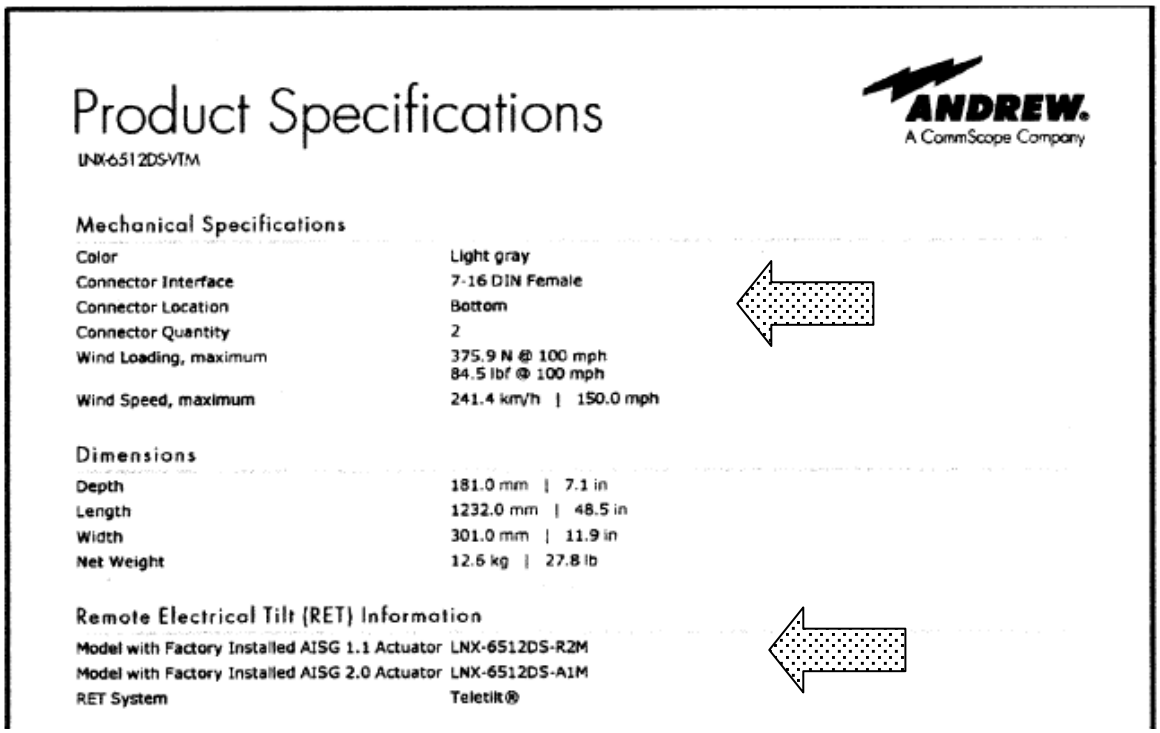


Figure 4. Verizon proposed antenna mount and cable entry configuration. Source: Verizon Project Plans at page A-3.

The current antenna connector configuration is with cables entering from the bottom, thus more visible as compared with rear-mounted cable entries.

Figure 4 misrepresents the design that Verizon will actually deploy should this project be approved. The antennas they have selected use bottom (thus more visible) connectors. Figure 5, taken from a portion of page A-6 of the Project Plans, confirms Verizon's planned use of bottom-connector antennas.



Product Specifications

LNX-6512DS-VTM

ANDREW.
A CommScope Company

Mechanical Specifications

Color	Light gray
Connector Interface	7-16 DIN Female
Connector Location	Bottom
Connector Quantity	2
Wind Loading, maximum	375.9 N @ 100 mph 84.5 lbf @ 100 mph
Wind Speed, maximum	241.4 km/h | 150.0 mph

Dimensions

Depth	181.0 mm | 7.1 in
Length	1232.0 mm | 48.5 in
Width	301.0 mm | 11.9 in
Net Weight	12.6 kg | 27.8 lb

Remote Electrical Tilt (RET) Information

Model with Factory Installed AISG 1.1 Actuator	LNX-6512DS-R2M
Model with Factory Installed AISG 2.0 Actuator	LNX-6512DS-A1M
RET System	Teletilt®

Figure 5. Verizon proposed antenna specification sheet and cable entry configuration. Source: Verizon Project Plans (portion) at page A-6.

Figure 5 also indicates that the proposed antennas may utilize remote electrical tilt actuators that can, in some configurations, add to the overall height of each antenna, as well as adding to the number of cables connected to each antenna.

Verizon's plans are internally facially inconsistent as to the antenna cable issues, with the more likely result being that Verizon will use antennas that increase the overall visual impact of the site (bottom connectors and remote tilt actuators) as compared with the use of rear cable connectors and no remote tilt actuators. Cables that connect through the bottom of the antennas are more visible than cable that attach via rear panel connectors.

For the reasons discussed above, it is my opinion that Verizon has underrepresented and misrepresented material elements of the proposed project.

Accordingly, it is also my opinion that if the project as now proposed is constructed, there will be a visible increase in the project as perceived by the public.

Alternative Solutions Analysis

The City's Planning and Zoning Code (Chapter XX) § 20.20.100 ("Wireless Communications Facilities") at subsection F(5)(a)(3) requires the following finding to be made to approve a use permit for a wireless facility modification that does not conform to all the development standards:

> "…Finding for an exception to the Development Standards: Strict compliance would not provide for adequate radio frequency signal reception and that no other alternative solutions which would meet the Development Standards are feasible."

Verizon has provided the City with a list of alternative sites it considered in connection with this project. Those locations are:

1. 1115 Solano Avenue (cinema sign structure)
2. 500 San Pablo Avenue (commercial building)
3. 718 San Pablo Avenue (auto dealership building)
4. 727 San Pablo Avenue (mixed use building)
5. 811 San Pablo Avenue (commercial building)
6. 916 San Pablo Avenue (mixed use building)
7. 1035 San Pablo Avenue (commercial building; existing cell site)

Verizon has disclosed to the City that it did not analyze the signal propagation from any of the locations just listed, but summarily dismissed each location as not being able to meet its signal needs. This non-analysis makes Verizon's claims of unsuitability for each site to be unsupportable and merely conjecture.

I personally visited each of the sites just listed while in the City on September 26, 2011. Given that Verizon has decided not to characterize the signal propagation that could occur from any of them (even after this information was requested by the City), it is impossible for Verizon (or the City) to assess whether any combination of Code-compliant solutions could provide comparable coverage to that being afforded by the current site. Also see my discussion in the next section as to why Verizon should not have and cannot apply a single wireless site propagation analysis to multiple alternative locations.

I also note that Verizon did not explore any locations in other jurisdictions, notably in El Cerrito. As I have already discussed, about half of the coverage to be provided by the proposed project will benefit only El Cerrito, yet all of the burden will be on the City of Albany.

It is my opinion that Verizon has merely alleged that no alternative sites exist, but not provided any commonly-provided objective-based data to support its allegation. Moreover, by failing to even consider sites outside of the City (given the coverage goals identified by Verizon), it has not provided the City with even a minimally adequate alternatives analysis.

Questions I Posed to Verizon Through the City

Because of the lack of engineering data in the administrative record, and the lack of supporting engineering data in Verizon's September 19, 2011 public hearing presentation to the City regarding the alternative sites discussed above, I posed requests for information through the City to the applicant that would materially aid in my review and the City understanding of the project.

The requests posed are reproduced verbatim; Verizon's responses received by the City are summarized:

> "1. Provide all coverage maps prepared for each alternative site identified in Crown Castle's presentation at the September 19, 2011 public hearing on the application (the "Alternative Locations"). The coverage maps should include for each Alternative Location, the outdoor coverage, in-vehicle coverage and in-building coverage and the above ground height of the antennas considered for each site. The coverage maps also should provide a legend identifying each coverage level by color and –dBn (sic) level and by Band (i.e., 700 MHz, 800 MHz and 1900 MHz)."

On October 3, 2011, Verizon through its RF engineer, Mr. Stefano Iachella (the "Iachella Letter") responded that it did not provide proposed coverage maps for the alternative sites as Verizon concluded that "propagation analysis was determined to be unnecessary as the size of the area covered would be similar to the size of coverage predicted by the existing Albany site at 47', which we have already said would require additional sites if we lowered from 61' to 48'."

Verizon's reply does not provide a meaningful response to the question posed. Rather, it only provides a conclusory opinion unsupported by any

engineering analysis. The conclusory answer also deprives the City of an opportunity to perform a meaningful comparison regarding coverages that may be afforded from each site and compared with the other alternatives, and compared in groups.

More to the point, however, is that Verizon is asserting that it can utilize a coverage study prepared for the 423 San Pablo site, and apply it wholesale to all of the alternative sites without performing individual studies for each alternative site. This is simply incorrect from an engineering perspective, and ignores changes in topography between the various alternative sites. This is highlighted in Figure 6, below.

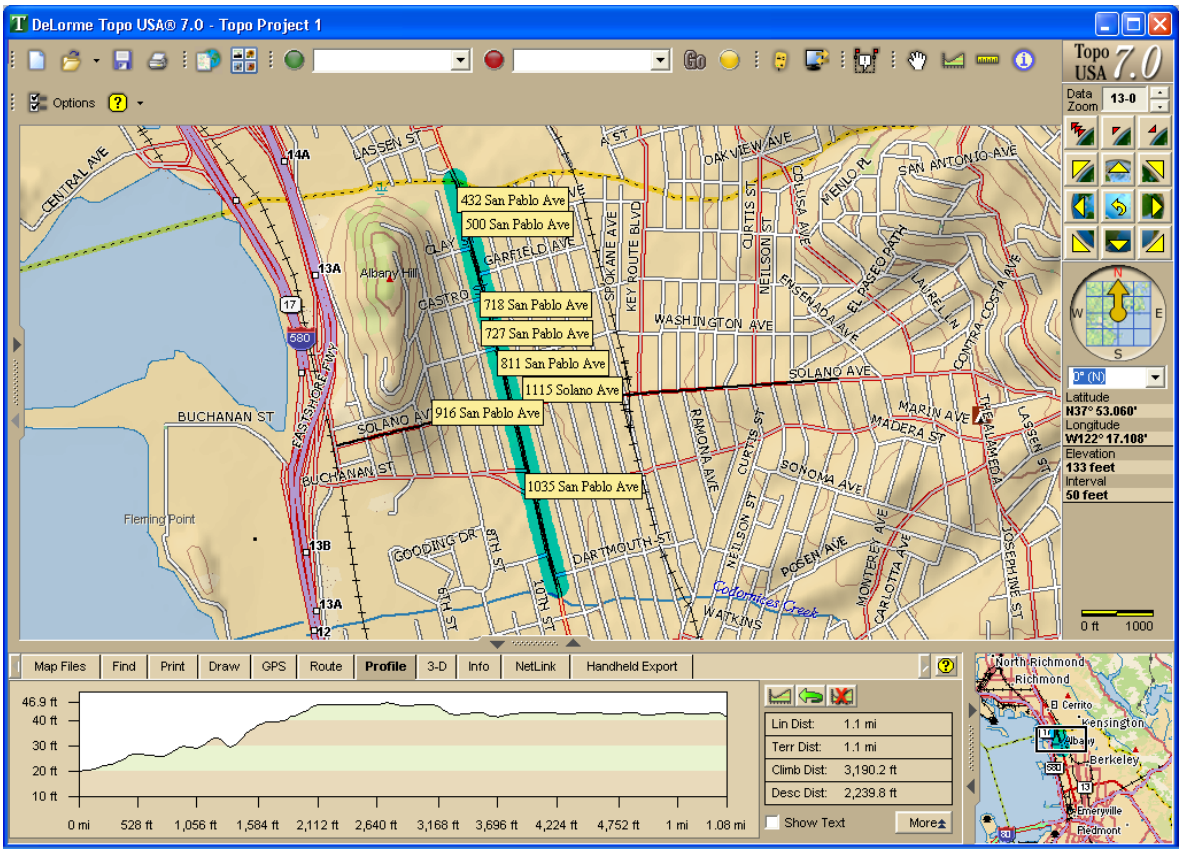


Figure 6. Ground elevation change along San Pablo Avenue from El Cerrito to Berkeley.

Figure 6 is a screen capture from a commercial topographic program using U.S. Geological Survey base map data. It shows that an elevation change of nearly 27 feet occurs along the length of San Pablo Avenue where the bulk of the alternative sites are located. The ground elevation at the City's border with El Cerrito is approximately 19.8 feet above sea level, peaking at about 47 feet just south of Washington Avenue, and declining to about 41.5 feet at the Berkeley border.

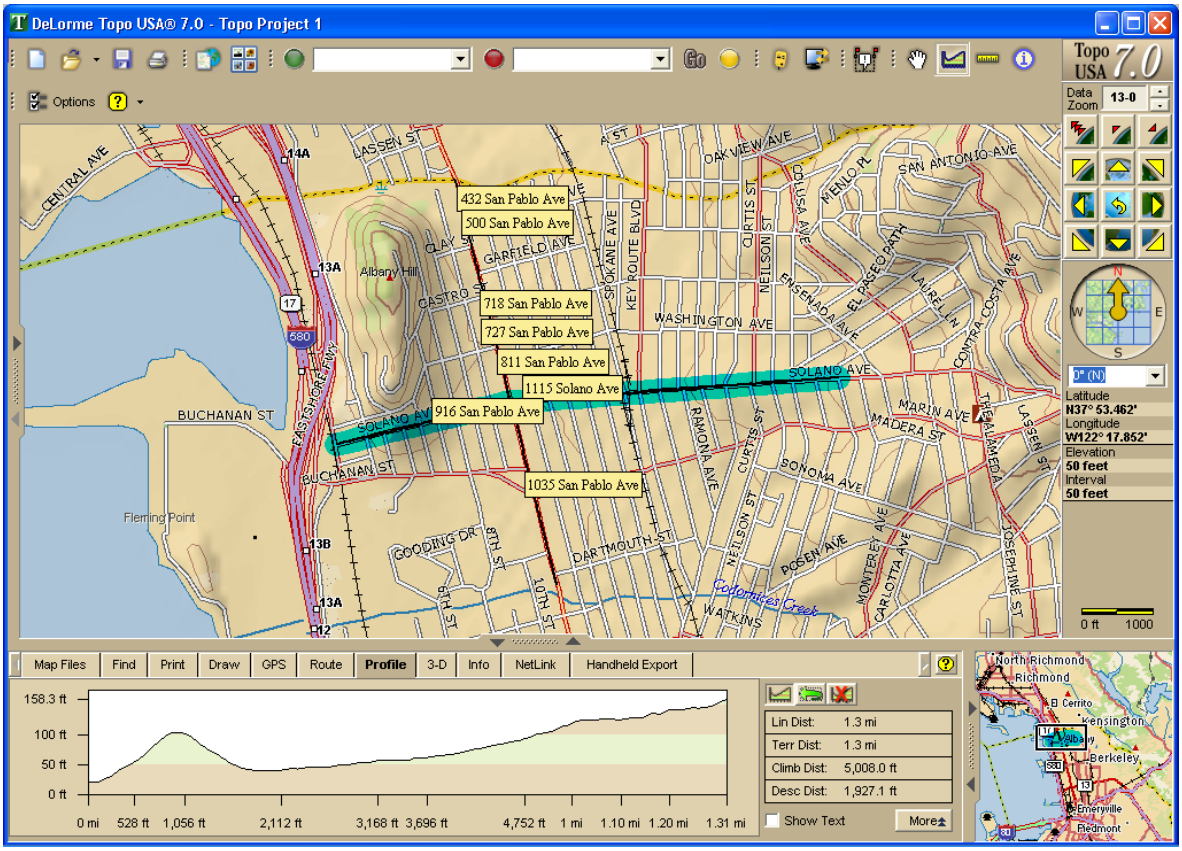


Figure 7. Ground elevation change along Solano Avenue from I-80 to Berkeley.

Figure 7 is a screen capture of from the same topographic program showing an elevation change of nearly 138 feet along Solano Avenue from I-80 to the Berkeley border. The ground elevation at the City's border with I-80 is approximately 18.8 feet above sea level, rising in the area of the Albany Hill to about 103.5 feet, then dipping to about 46 feet at the intersection with San Pablo Avenue, and finally increasing to a ground level height of about 156.5 feet at the Berkeley border.

The three-dimensional ground elevation changes just discussed are significant from a wireless signal coverage perspective as they directly impact signal propagation characteristics. These significant ground elevation changes should have been considered by Verizon, but were not, when it explored the alternative sites it put forward to the City.

Moreover, Verizon's failure to perform an adequate alternative site analysis regarding signal propagation also extends to Verizon's failure to considering local tree heights, nearby building heights and locations, and other features which directly impact and influence radio signal propagation. These changes are very specific to particular sites, and different from site to site.

This is yet another engineering reason why a single coverage prediction cannot be applied across a variety of alternative sites, as Verizon has attempted to do in this planning case.

> "2. Provide the name of the person the Verizon engineer contacted at each Alternative Location regarding the site's feasibility and availability.

The Iachella Letter disclosed that "It was unnecessary to contact landlords on the 7 alternative locations to inquire about leasing as ***the studies concluded*** that these alternative sites would not meet the coverage objectives of Verizon Wireless." (Emphasis added.) Given that Verizon's response to the first question was that "propagation analysis was determined to be unnecessary" there were no studies to support Verizon's reply to question 2. Accordingly, Verizon's replies to questions 1 and 2 are at odds with each other.

> "3. Provide proposed coverage maps by Band (i.e., 700 MHz, 800 MHz and 1900 MHz) for the proposed site at 423 San Pablo Avenue (the "Proposed Site") in its existing condition plus each Alternative Location at 48 feet above ground level.
>
> "It would be particularly helpful to our expert's review if he is provided seven separate coverage maps showing the coverage that would be afforded from the Proposed Site in its existing condition plus the coverage that would be additionally afforded by Band from each Alternative Location at a maximum height of 48 feet above grade so that our expert can evaluate the coverage that can be obtained by the use of the Proposed Site "as is" in conjunction with an alternative site that conforms to all code requirements.
>
> "Each of the separate coverage maps requested above should show coverage by Band of at least -75 dBm in one color; -75 dBm to -85 dBm in another color; and -85 dBm to -95 dBm in another color."

The Iachella letter did not provide any of the information requested above. The lack of this information makes it virtually impossible for the City to assess the existing site and the alternatives for any other less intrusive configuration.

> "4. Discuss whether Verizon's wireless network can be used by its subscribers with less than -75 dBm level signals, -85dBm level signals, and -95 dBm level signals."

Verizon did not provide in the information requested. Rather, its response in the Iachella Letter was that "A cutoff level of -75 dBm was used since that is the industry accepted value for adequate in-building coverage." I am personally aware that wireless carriers have their own target coverage goals for various levels of coverage (i.e., in-building; in-vehicle; and out-doors"), and that signal levels can vary even within the same company from location to location. There is no industry-accepted value of -75 dBm as asserted by Verizon.

> "5. Provide all of the specific selection criteria that the Verizon engineer used to identify each Alternative Location that was selected."

The Iachella Letter discloses that "[t]he analysis conducted for determining the coverage of the 7 alternative locations was based on a site visit to determine the highest structures available in the commercial district of Albany along San Pablo Ave." Simply considering building heights is an inadequate means to meaningfully identifying, much less considering alterative sites.

> "6. Provide any other information that the Verizon engineer relied upon in forming the opinions he expressed at the September 19, 2011 public hearing."

I posed this last question to give Verizon every opportunity to disclose and discuss meaningful engineering information in connection with its various coverage assertions to the City. Verizon, in the Iachella Letter, did not respond to this question.

Given that (a) Verizon's 'selection criteria' was limited to a "visit to determine the highest structures available in the commercial district of Albany along San Pablo Ave"; and (b) as disclosed above, that Verizon made no contacts with any of the property owners to determine any of the leasing issues of the sites; and (c) Verizon did not even model signal propagation from any of the alternative sites its discussed, it is my opinion that the Verizon has not provided the City with even a minimally adequate—much less meaningful and reliable—alternative site analysis.

Conclusions

Verizon has failed to properly characterize the scope and extent of the project it now proposes. The project that Verizon proposes exacerbates the existing site's non-conformance with the City's Municipal Code.

The actual visual impact of the current project proposed by Verizon will *not* result in a like-for-like replacement, as Verizon incorrectly asserts. While the Project Plans are internally inconsistent, they are sufficient to disclose that the proposed project will materially increase the visual impact of site that would be constructed as compared with the existing site.

Verizon has failed to provide a meaningful alternative site analysis, much less even a minimally-adequate analysis. A set of summary conclusions by Verizon regarding their opinions that are *not* based on engineering data is neither useful to nor should be relied upon by the City. The cursory evaluation of the proposed alternative sites failed to consider even the most basic signal propagation elements.

The fact that Verizon only looked at (but failed to adequately consider) locations within the City of Albany further compromises what should have (and could have) been, but was not a meaningful alternatives site analysis, especially given that the data to provide this type of engineering analysis of alternative sites is within Verizon's control.

Respectfully submitted,

Kramer.Firm, Inc.
By

Jonathan L. Kramer
President

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