

**TOWN OF ACTON, MASSACHUSETTS
PLANNING BOARD**

**IN RE:
SBA TOWERS II, LLC'S APPLICATION
FOR A WIRELESS COMMUNICATION
FACILITY SPECIAL PERMIT**

AFFIDAVIT OF MICHAEL MAGLOTHIN

I, Michael Maglothin of 288 School Street, Acton, Massachusetts, having personal knowledge in these regards, do hereby depose and say the following:

- (1) I am a person of the full age of majority and a resident of 288 School Street, Acton, Middlesex County Massachusetts.
- (2) I am Director of Products and Services for BSEC Planning Corp. BSEC provides high precision analysis, planning, and design for projects for borders, airport, seaport, and national critical infrastructure facilities.
- (3) I graduated from the University of Louisville with a degree in Criminology.
- (4) I was a Security Forces officer in the United States Armed Forces from 2001 through 2005.
- (5) I acted as a Senior Security Analyst for the Department of Defense until 2008.
- (6) I have personally designed 19 systems whilst in the military, and supported designs for 25 other sites as a contractor, many including wireless communications infrastructure. These systems supported vital national resources, such as the majority of the U.S. nuclear weapon stockpile and operational strategic defense systems, and Senior Executive mission aircraft including "Air Force," and "Marine One." These systems commonly employ wireless communications devices for redundancy and long-haul communications. I have personally been involved in design support from the most complex digital communications for nuclear missile launch sites, to simple system redundant/backup bi-static microwave links, and IP-based wireless mesh security system networks.
- (7) In my current position with BSEC, I am working with one of the largest defense companies in the world in support of the Department of Homeland Security.
- (8) I have specific responsibility for leading the modeling of optimal siting of wireless communications facilities. I am required to know and understand the workings of wireless communications including methods that would be commonly associated with towers like those proposed by the Applicant.

(9) In my work I am specifically tasked with ensuring seamless fool proof and fail proof wireless communications siting to meet stringent government communications and security standards which are higher than those in use by the commercial wireless industry.

(10) As a community service my company, BSEC Planning Corp. has agreed to support the residents of Acton in determining the most cost-effective placement of towers to meet the capability needs as claimed by SBA Towers II, LLC.

(11) I am an expert and daily user of BSEC Planning Corp's software, "Criterra," BSEC Planning Corp's assessment and design product. Criterra is used to plan and optimize security and wireless communications systems. It empowers experts with a method to achieve maximum system performance at minimal cost. Criterra's iterative design process enables planners to intelligently leverage existing infrastructure and resources, identify capability gaps, and conclude on how to best apply the minimal amount of technology and funds required to accomplish objectives. This balanced approach unfolds on a precise, accurate, geospatial, 3-D environment for planners to naturally induce design requirements and solutions. Criterra provides a vertical automated solution for the entire survey and planning process. It is a deterministic planning tool for scientific and objective automatic determination and optimization of tower quantity required, tower location, antennae type and orientation, and many others. Criterra's analyses include, but are not limited to, ray-tracing/line-of-sight, Radio Frequency propagation and attenuation, and temporal considerations. Some of the user-defined inputs and variables include graphical areas of interest, gain, target heights, threshold levels, path loss exponent, 3-D lobe import, and many more factors. Criterra calculates accurate and precise parameters. Criterra integrates a wide range of data including: facility engineering data for existing and future planning (Computer Aided-Design and Building Information Modeling data) and Geographic Information System (GIS) orthographic imagery, vector, and elevation data, and existing and planned communication and power supply networks.

(12) Commercial RF data transmission facilities are easily encompassed within Criterra's capabilities. The program has been specifically designed, again to military/national security specifications, to optimize locations of wireless communications facilities. Criterra's effectiveness has been validated through hundreds real-world cases and as a critical component to Fortune 500 company planning capability.

(13) I have personally reviewed the materials provided by the applicant on the Town of Acton's DocuShare system.

(14) Of particular note is a chart provided by Attorney Erickson in his letter to the Board of April 1, 2010, containing SBA Towers II, Inc. Data for its alleged gap in coverage. (see Exhibit "A") This chart indicates several items of critical importance. These include (1) the location of SBA TOWERS II, INC.'S Towers (we can tell this by the Site ID designations and by the Frequency of 2.6GHz which is leased to SBA Towers II, Inc. by the FCC (see SBA Towers II, Inc. License submitted to the board which reports the frequency operated by SBA Towers II, Inc. in Mhz) (2) the locations of SBA Towers II, Inc.'s Towers by longitude and latitude (3)The height and direction the SBA Towers II, Inc. antennae are pointed (Height and Azimuth respectively), (4) the Manufacturer and Model of the Antennae to be used for purposes of modeling those antennae's coverage: and (5) The antennae's "Gain" indicating Power of the Antennae.

(15) As evident in SBA Towers II, Inc. June 4th Docushare submission, "SBA Towers - 5-7 Craig Road Alternative Analysis" (see Exhibit "B"), SBA Towers II, Inc. has outlined a target circle in red that identifies the area of coverage concern.

(16) I have obtained the manufacturers' specification documents for the Clearwater antennae. These include the radiation pattern maps, or "lobes," specific to each and further support the performance characteristics of the proposed technology.

(17) I have obtained Zoning Map GIS data from the town of Acton Information Technology office.

(18) I have obtained Census TIGERLine and other GIS vector data from Massachusetts Geographic Information System (*MassGIS*).

(19) I have obtained 10m National Elevation Data (NED) Digital Elevation Model (DEM) tiles from the United States Geological Survey National Seamless Server.

(20) I have applied Criterra to input Exhibit "A"'s data and modeled the coverage provided by SBA Towers II, Inc.'s proposed network taking into account the locations identified, the topography, the directions in which the antennae point, the frequency and the power of the antennae identified. I prepared a model around Exhibit "B"'s defined SBA Towers II, Inc.'s target coverage area. I imported into Criterra 10m NED and 30cm Orthoimagery resolution data. The resolution is the "definition" or "clarity" of hypsographic features; the smaller the resolution the more realistic the topographical layout used by Criterra analyses and displayed in 3-D through the user interface. This is significant to the accurate modeling of communication towers. By contrast, SBA Towers II, Inc.'s submissions show that their resolution for determining coverage was set at 30 meters (lower quality than 10m) with a diminution of coverage for assumed vegetation and buildings.

(21) It is possible to obtain a greater resolution through the use of IFSAR (Interferometric Synthetic Aperture Radar), photogrammetry, or LIDAR (Light Detection And Ranging) survey to obtain vegetation and building elevation data. However, this is very expensive and there is no indication that this high-resolution survey has been accomplished by anyone relating to this application.

(22) Prior to the most recent update to the Docushare, all maps and analyses prepared by SBA Towers II, Inc. for this Application had been based on lower-resolution data (may be the case for Exhibit "B" analysis submission too). It is evident by the quality of submitted analysis output Criterra is more accurate and precise than the analyses conducted by Clearwater and Mr. David Maxon's RFMaps tool. I understand upon information and belief, that Mr. David Maxson criticized the preliminary Criterra analysis results for not taking RF attenuation into account. However, no map or analysis prepared by Mr. Maxson, SBA Towers II, Inc. nor anyone else had done more than this at the time my "initial look" line-of-sight analysis results were submitted. As a result of this dismissal, and the obvious lack of sufficient scientific data provided by the Applicant thus far, my company determined the town residents required BSEC support and the analysis strength of Criterra's complete planning capabilities. Since the last June 4th Docushare update, BSEC planning Corp has updated the Criterra Acton Model to include full RF automatic optimization analysis. Until now, these analyses have only been applied for use in high-dollar contracts.

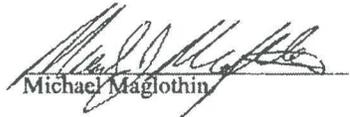
(23) Based upon my years of experience in designing, modeling and optimizing locations of wireless communications facilities, and the scientific analysis performed using Criterra, it is my opinion (see Exhibit "C" presentation) the Craig Road Tower 7244 will not provide the performance as assessed by SBA Towers II, Inc. "5-7 Craig Road Alternative Analysis" for the target area, since Craig Rd Tower 7244 covers only ~56% of the target area. Additionally, Tower 7244 wastefully provides a large portion of its best reception coverage for large areas of unpopulated lands, such as farm fields, the Acton Water District property, and MCI Concord property. When performance of Tower 7244 is considered in combination with the other "Exhibit A" proposed towers, there remain significant gaps along Route 2 and in Acton residential and commercial zones.

(24) It the finding of BSEC Planning Corp analysis based on Exhibits "A" and "B" that SBA Towers II, Inc.'s proposed Tower 7244 at 5-7 Craig Road does not provide adequate coverage of the Applicant's admitted target area.

(25) Criterra determined Adesa Concord to be the optimal location to cover the target area, as it covered ~73% of the target circle. This site was also found to be "suitable" based on SBA Towers II, Inc.'s own admission (see Exhibit "D" letter by Peter LaMontagne of SBA Towers II, Inc, on February 2, 2010). Including the excellent coverage provided by this site over the target area, Adesa also provided additional indoor capability for Acton Boxborough schools, Kelly Corner, and the Acton Public Safety Facility. When Adesa was combined with the other SBA Towers II, Inc. proposed towers (with exception of 7244), the total coverage was "excellent" and covered all commercial zones within the target area, leaving out only a few small pockets of residential areas. Additionally, Adesa has 100% backhaul link potential to all other SBA Tower II, Inc. proposed towers.

(26) Base on the Town of Acton Zoning Bylaw, Section 3.10.6.17.e; it is my expert opinion that the Applicant has failed in their obligation to provide substantial evidence to permit the board to approve their permit. It is my recommendation based on my scientific analysis and findings that the board deny SBA Tower II, Inc.'s 5-7 Craig Road Permit.

SWORN AND SUBSCRIBED to under the penalties of perjury this 7th day of June, 2010.


Michael Maglothin