



Follow-on Analysis and Commentary
Wireless Facility Application
5-7 Craig Road, Acton, Massachusetts

Additional information was to be supplied by the applicant, SBA, in advance of the May 4, 2010 continuation of the public hearing. Numerous documents were submitted. We have reviewed those relevant to our scope.

The applicant's responses to our questions, in the SBA Towers Response to our earlier comments, were largely responsive. Some answers referred to the discussion at the previous meeting, which on some topics was substantive. Other answers provided the requested information, at least from the applicant's perspective. The following answers are most in need of our response:

Applicant response #5 (April 7) to our question regarding providing technical documentation on why there would be a change to the 10-foot spacing custom if Flush-Mount or Concealed-Antenna Monopole ("CAM") were employed missed the mark. Applicant responds that it was not suggesting changes to the customary 10-foot spacing, and refers to Mr. Fagas' and Mr. Kumar's testimony in that regard. We suggest that by saying wireless carriers would need more than ten feet per carrier on CAMs, our intent was to ask for specific data demonstrating the need to deviate from the ten-foot spacing and expand to more space per carrier on the proposed monopole, if it were a CAM.

Mr. Fagas' testimony was supplemented with a written commentary submitted to the record on April 16. The commentary is replete with generalizations that make no reference to any specific carrier's needs or plans for the specifically proposed tower; e.g.

- fewer antennas per aperture on a CAM "*often requires some wireless operators who deploy multiple frequency bands and technologies to utilize multiple levels...*" (*emphasis added*);

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- “*many*” normally used antennas will not just fit inside.. [which] *can have* the effect of reducing...”;
- the number of co-locators “is *often* half as many...”;
- limited antenna aiming room in a CAM “*can have* negative effects...” on coverage.

There is no evidence that these generalizations apply to the present proposed structure for the present proposed wireless carrier(s). We do agree, in general, that compared to the broad platform/standoff mounting configurations, Flush Mount and CAM implementations reduce flexibility for wireless carriers. We recommend granting wireless carriers as much flexibility in design as is not objectionable for the site.

We make one exception to the foregoing generalizations made by the applicant’s engineering experts – Clearwire makes it a practice to utilize dish or square panel antennas to communicate to a central communications hub. (This is in addition to the narrow/tall panel antennas that communicate with wireless subscribers) Testimony at the last meeting indicated that it may be possible to conceal sufficient panel antenna capability in a CAM to “backhaul” communications to a central point (which would be their facility on Great Hill). Without further engineering data to refute this potentiality, we think at the moment, where there is a will, there is a way.

Nevertheless, it will be substantially less inconvenient to install and maintain Flush Mount antennas than a CAM, especially considering the (newly revised) proposed height.

Below is a 140-foot tall Flush Mount facility in Westwood.



Below is a 130 (+/-) ft CAM on Baker Ave in Concord.



Regarding response #6 to our questions, the applicant indicates it has answered the 6-7 carrier question in testimony and in its response to staff questions. We supplement the applicant's responses with a reminder that a 6-7 carrier tower will only be able to be a CAM for 3 to 5 carriers (typically). In addition, the idea of allowing an extendable tower (extendable by future

permit, if and when demonstrated necessary) is a Challenge for a CAM. A 5 place CAM built to 140 feet would be challenging to extend another 30 feet even if it were designed so. A Flush Mount tower is more flexible for extension in this regard, and the 30-foot extension, if ever done, could conceivably be a CAM section or also be Flush Mount.

The response #4 to our question about limiting the height (to, say, 100 feet) endorses a reduction of the proposed 170 feet to 140 feet, “Clearwire and T-Mobile stated the importance of maintaining a height of 140”. The applicant’s next sentence is a direct contradiction, “Clearwire ...will be locating its equipment at 125’.” Also, T-Mobile apparently has not opined on its minimum height. Mr. Fagas, to my understanding, is a consultant to SBA and is not hired by T-Mobile to make T-Mobile’s case. No evidence of the purported need for 140 feet is given, except in the form of making the tower more co-locatable by future carriers not presently expressing a need.

T-Mobile has a facility at 54 Hosmer Street, 350 feet north of Route 2, within the service area of the proposed facility. Although it is at a substantially lower height, concealed in a church steeple, this facility is indicative of T-Mobile’s ability under the bylaw to identify by-right locations that reduce the size and intensity of any by-permit locations it might require. The coverage of the Hosmer St. facility is not included in T-Mobile data.

Since T-Mobile is not represented in this matter, its coverage plots are apparently out of date, it apparently has at least one additional facility in the service area of the proposed tower, it has provided no minimum-height evidence, it has been represented by a “Development Manager” at T-Mobile in an undated letter that T-Mobile may have an interest but it has not funded development in this area, we suggest that T-Mobile’s coverage concerns are not ripe for review under the prohibition of service clause of the Telecommunications Act of 1996. Only Clearwire’s information need be considered, in our opinion, in this matter. (We leave it to the Board to consult counsel and review the evidence to make its own decision regarding which carriers’ evidence to consider).

We received the Clearwire Data Supplement and ran our own coverage plots. The applicant was unable to describe what the meaning of its green coverage regions was, and only suggested that the coverage analysis was *similar* to a specific signal strength.

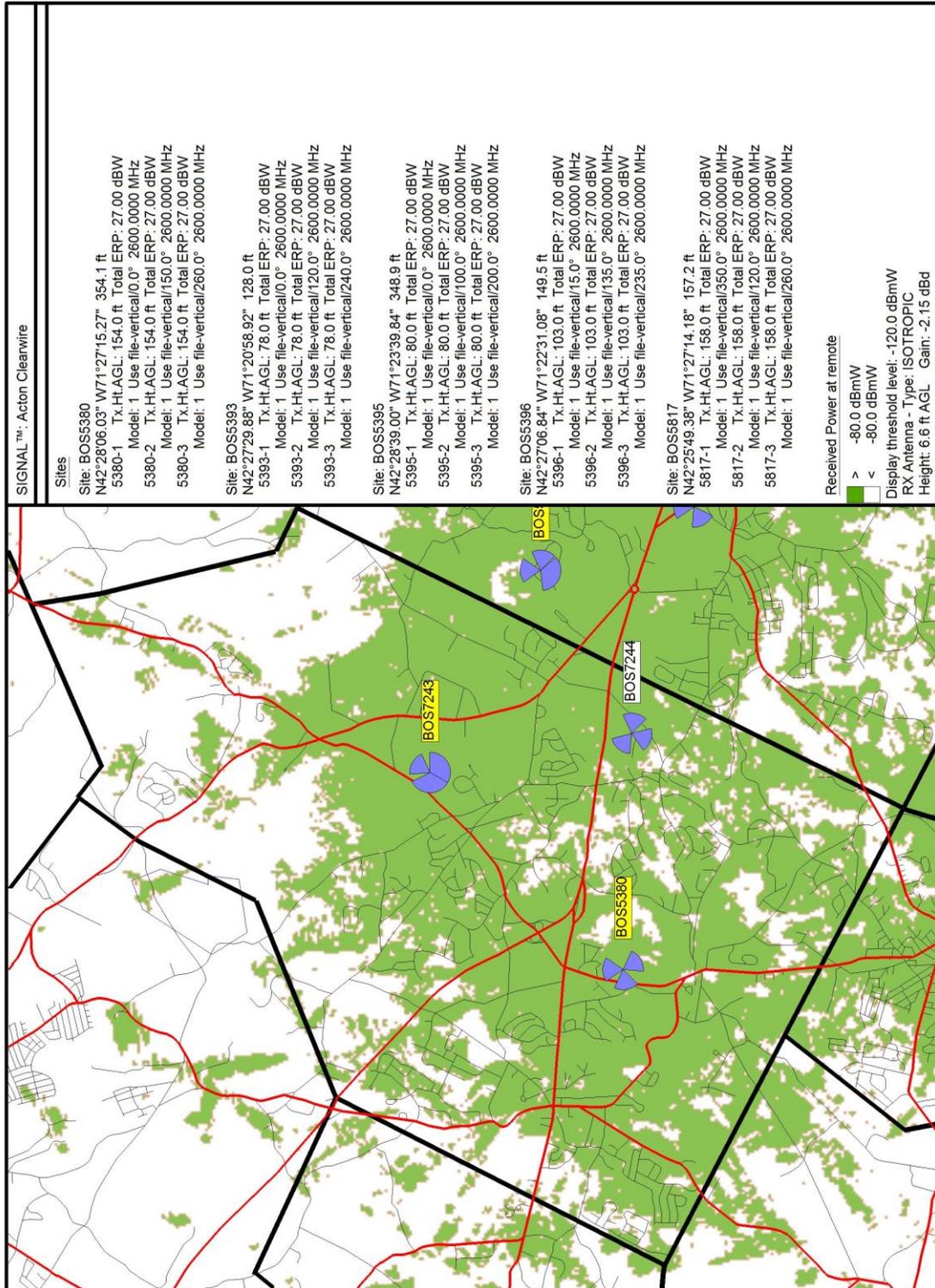


Figure 1 – Clearwire All Provided Sites on Except Proposed

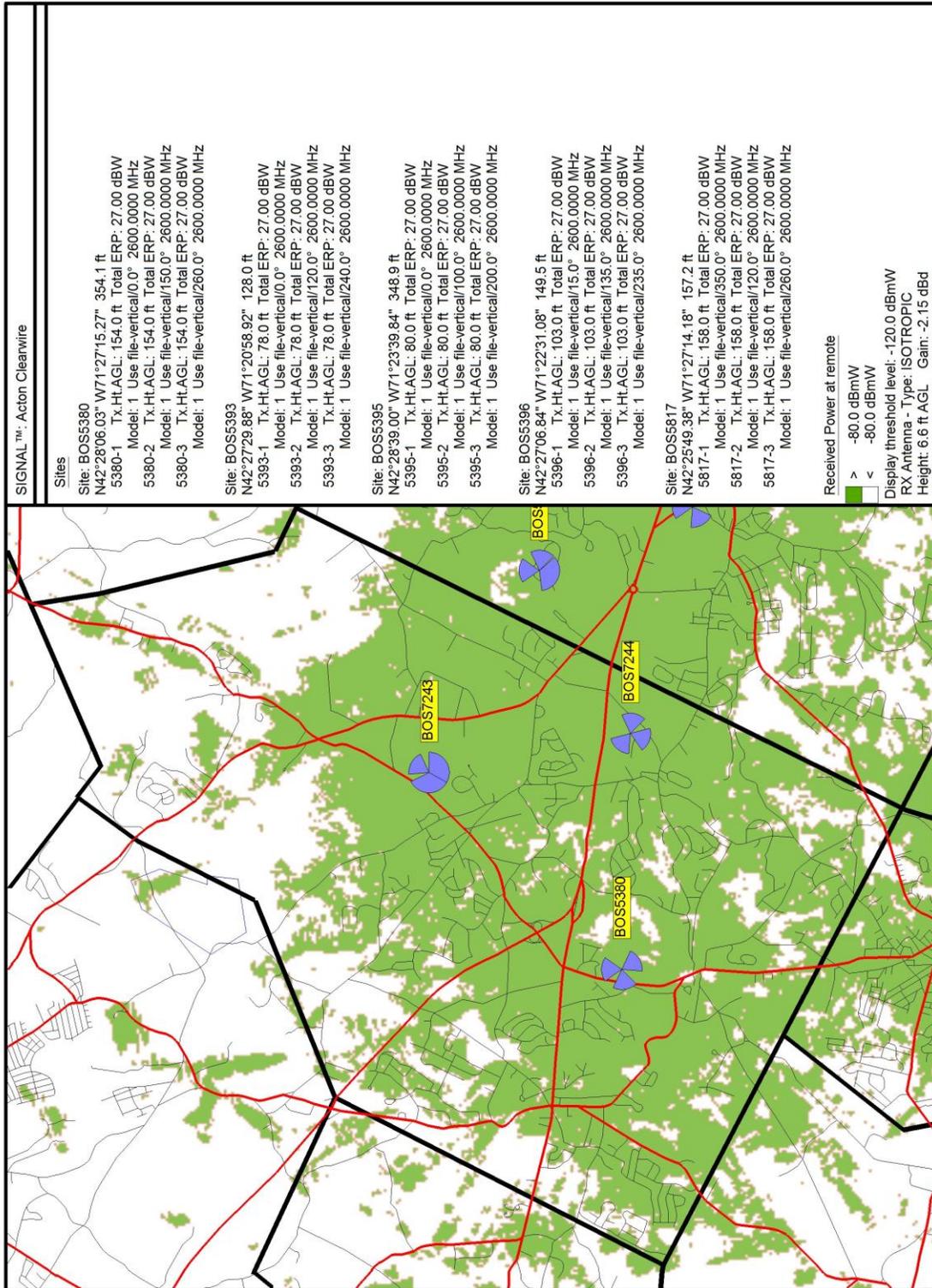


Figure 2 – Clearwire All Provided Sites on Plus Proposed 160 ft

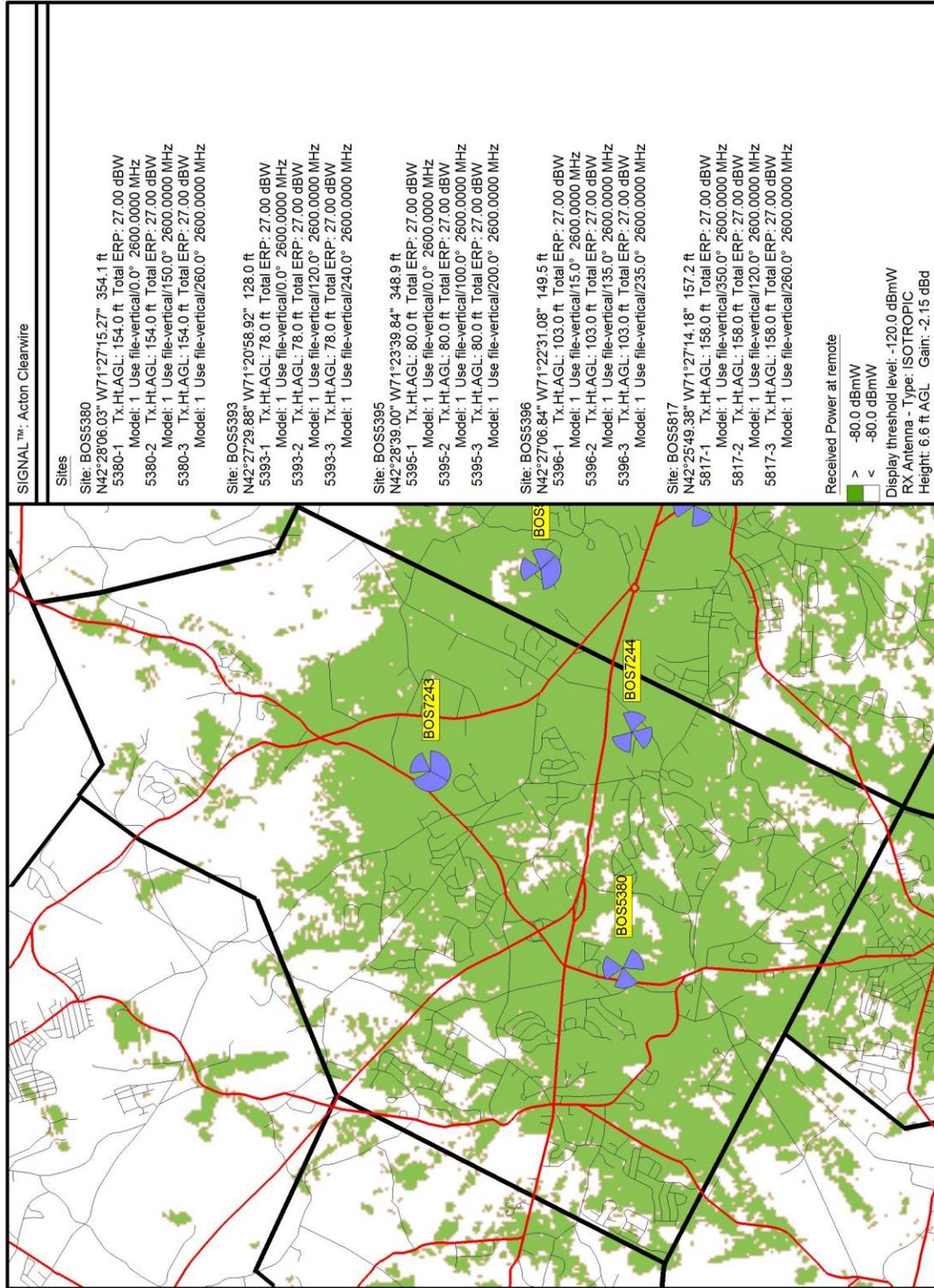


Figure 3 – Clearwire All Provided Sites on plus Proposed 100 ft

Our coverage analysis suggests that the 100-foot height for Clearwire at the Proposed site is not a burdensome height.

Response to Resident's Challenge

A resident challenged our statement that in prohibition of service claims, the federal courts review the facts *de novo*; in other words, new evidence can be submitted by plaintiff and defendant over and above any evidence on the original town board's record, regarding significant gaps and/or alternative facility placement options. To support his challenge, the resident stated that the summary of the Second Generation Properties v. Town of Pelham NH, a FastCase document which he submitted to the Board, stated the facts are not given *de novo* review by the court. Unfortunately, the resident mistook my discussion of *de novo* review of a prohibition of service as a discussion about a substantial evidence claim. As the Second Generation summary submitted by the resident states, "Unlike the substantial evidence issue, the issue of whether the ZBA has prohibited or effectively prohibited the provision of wireless services is determined *de novo* by the district court." This is relevant to the Board's fact-gathering because new evidence can be added to the record if it gets to federal court; but the Board's review should nevertheless be based on substantial evidence in the currently developing record.

The resident also challenged our statement that courts tend to look for more scientific and less anecdotal evidence, such as general observations about individual cell phone service versus rigorous measurements of coverage. Again, the resident referred to his Second Generation summary, averring that this case opined favorably on the use of anecdotal cell phone evidence. The summary of Second Generation mentioned that two people "stated they had phone service within the alleged gap." However, this information was in the case summary's description of facts, along with observations that there was an existing cell tower that could be used and that certain sites, such as state highway property, had not been considered. Further in the summary, no direct connection was made between the anecdotal observations of the two working cellphones and the court holding "that Second Generation did not meet its burden to show that there was a significant gap in coverage or its burden to show that the gap could be filled by other means." Also, "It noted that Second Generation's propagation study did not consider" that a taller tower placed within the permissible overlay district might be an effective alternative. Based on the resident-supplied summary of the Second Generation case, anecdotal information about cell phone service was not specifically allowed or disallowed.

In contrast, here are some observations made in a partial summary of a case that specifically addressed anecdotal cell phone testimony: “Cellular Telephone Co. v. Borough of Ho-Ho-Kus (11/19/99)... [Among other things] The provider had challenged that the town had no substantial evidence to decide that property values were at risk in the town and that cellular service was already adequate. ...The second point, about cellular service being already adequate, relates to a comparison of twelve phone call recordings from opponents versus five tests containing 2,500 measurements each conducted by the applicants. The town board's decision was rejected by the court because the weight of the evidence was so much in favor of the wireless company that it could not have substantially supported the board’s decision that there was no gap.”¹

We also explained to the Board that a recent (November 18, 2009) FCC ruling makes it clear that the presence of another carrier’s service in an area has no bearing on the determination of an applicant’s own purported gap in service.

For the foregoing reasons, we advised the Board to ensure that

- It is reliant on substantial technical evidence regarding the presence or lack of coverage;
- It has decided which wireless service(s) should be considered for any purported gap;
- It relies on actual drive test data if there is information that suggests one or more computer-estimated coverage plots is flawed or incomplete.

As suggested in the prior section of this report, the T-Mobile information appears to us to be unripe and not sufficient for evaluation under the Board’s TCA mandate. We leave the decision on whether to treat T-Mobile’s data as unripe to the Board on advice of counsel.

David Maxson

April 30, 2010

¹ Discussion excerpted from a report to the Town of Concord, MA, Evaluation of Wireless Deployment Issues in the Town of Concord, June 2003.