TOWN OF NORTHBOROUGH PLANNING BOARD
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Approved 11-8-11

Planning Board
Meeting Minutes
October 11, 2011

Members Present: Rick Leif, Leslie Harrison, George Pember, Theresa Capobianco

Others Present: Kathy Joubert, Town Planner; David Maxson, Isotrope LLC; Tom Blasko, Seth Hopkins, Len Creiger

Presentation on Wireless Communication Facilities by David Maxson, Isotrope LLC

David Maxson, Certified Wireless Communications Engineering and Technology Professional and Chief Executive Officer of Isotrope, LLC, presented a PowerPoint slideshow to the board members entitled "Wireless Facility Siting Update". Topics addressed in the presentation and discussed with those present were Wireless Coverage, Wireless Growth, Locating WCF's, Types of Wireless Facilities, Technology Trends, Planning Process and Hearing Process.

Wireless Coverage
Mr. Maxson stated cell phones have become a fact of life, with 280 million cell phone numbers in the United States amongst a population of 306 million people. The vast majority of those phone numbers are for individuals, and there are now as many households without land lines as there are households without wireless phones. He noted that when people move to a new house they are typically using cell phones and do not get new wired lines. The marketing now for wireless phones includes I-phones, Androids and Smart Phones, and 70% of large data files now come from PCs and phones. The wireless companies are competing to provide better service to homes so families will rely on their phones more.

Wireless Growth
MetroPCS is a company that has come in over the last few years with flat-rate, pay-in-advance subscriptions. **Clearwire** is the first company with 4G technology ("G" meaning "Generation") and Internet Technology, but they have been slowed down by a tight financial situation. **Lightsquared** is a new company that is trying to exploit spectrum from satellites. There are problems with signals from satellites to cell phones, and some issues regarding interference with Global Positioning Systems (GPS). If the FCC and Lightsquared fix the problem, Lightsquared will be a carrier's carrier and will market to small cell phone companies. Current carriers are adding new bands and offering 4G technology. They will be adding antennas to current sites or looking for new sites. Companies are also looking at consolidating resources, including AT&T and T-Mobile, and Clearwire, Sprint & Lightsquared. AT&T and Verizon have bought spectrum at auctions. They are launching their 4th Generation, using new frequency

bans they've bought for millions of dollars at auctions. As they want to deliver more high-speed service, they will be adding it to their sites.

Mr. Leif asked Mr. Maxson if all these new bans being bought at auctions will result in different technology that will transmit it, or if it will be the same as it is now.

Mr. Maxson stated it will basically be more, and sometimes bigger, technology because they'll need additional equipment at cell sites. There are a lot more filings for residential areas now. Some towns only allow cell towers in industrial zones and back themselves into a corner. In suburban areas with a lot of development, towers are being located one half-mile to a mile apart due to the intensity of use and the need to have WFCs closer to the structures because signals are lost when they have to go through a house or an office building made of steel. In cars it's not an issue because of the windows. The line of site for the radio waves is important also. If the terrain is in the way it will block signals and land cover will soak it up and disperse it. The signal won't get to where it's supposed to go. Ideally, they like to have the signal above the trees, like a lighthouse focusing a signal with as much throw as possible, and without the signal dispersing.

Mr. Maxson stated companies will try to locate on structures, but could need variances. They have to deal with federal, state and local laws. In the case of a WCF, a town has to ask if it is prohibiting provision of service by denying the variance. He stated he sees a lot of federal cases where companies say they can prove it's the only place a tower could go. In these cases, the town needs a technical expert to determine if this is true or not. Advice from a town counsel or special counsel who may be familiar with the WCF proceedings is also helpful in dealing with a determination of what is a "significant gap". Mr. Maxson stated his goal is to gain substantial evidence on the record for the board to support its decision.

Mr. Maxson stated hiring an expert would be at the applicant's expense. The board will probably want to look at the filings on a case by case basis, as they may not always need an expert.

Mr. Leif asked how the board can address WCFs and limit them but provide service.

Mr. Maxson stated towns cannot assume that minimizing the number of towers will minimize the impact. Some towns encourage more unipoles, with shorter heights, to get way from tall ones that can be seen for miles. In that case, shorter towers may be less objectionable. However, to provide coverage, more towers will be needed as opposed to taller towers whereby fewer towers would be necessary.

Wireless Facilities

Mr. Maxson presented information on, and showed examples of, the different types of wireless facilities, or cell sites, including lattice towers, stealth towers, concealed antenna monopoles, flush mount monopoles, monopines (tree poles), and distributed antenna systems (DAS).

Mr. Leif confirmed collocation could be a rooftop connection such as on the CVS building in the center of town. He stated he thinks of a rooftop collocation as a small canister-type device on rooftops, that is small and unobtrusive. He noted in the town's bylaw it cannot extend over 10 feet from the roofline of the building. He asked Mr. Maxson if the FCC would consider it a collocation if it was as high as 20 feet from the roofline.

Mr. Maxson stated the court could say the town prohibited wireless service if the board denied it. He stated site sharing makes sense. Some bylaws blindly say they want to maximize site sharing and the risk is that they want taller towers for maximum collocation. The towns need to weigh the sharing language and the facility against aesthetics.

Mr. Blasko asked if the best coverage for collocation is at top of pole. He asked about new carriers who get lower positions on the pole and then request that the town let them put up a new tower.

Mr. Maxson stated it is a great way to be flexible, and having too much height is not necessarily beneficial. For example, if two or three carriers can get by with a 140 foot tower, it would be more appropriate to put a second tower on another close parcel. If the bylaw enables that sort of thing, when the company comes in, the board doesn't have to give them the 140 feet right away, but can tell them to use the smaller tower and come back when they need more space. It all depends how the bylaw is written.

Mr. Maxson showed a slide of a tower in the steeple of a church in the center of Natick. He stated it's a clever form of "stealthing" in that it is completely invisible to the area. Cape Cod has approved all types of stealths. He stated places where he is seeing these are in dense residential developments or multi-story buildings. In the Back Bay they have antennas on light poles, which is a form of a distributed antenna system (DAS). They are good for apartment dwellers. In New York a local ordinance required companies to use a DAS, and a federal court found the ordinance forced the company to use a certain technology. From a zoning perspective, a bylaw should encourage companies to use existing structures such as church steeples and telephone poles and let them do everything that says aesthetically it makes good sense. Rather than telling them how to use it, focus on aesthetics instead.

Mr. Leif stated Northborough is a town with tree-lined residential streets, some suburban residential areas, a lot of country residential areas, scenic roads and houses that are spread out. He stated it seems like the trend is that people want an intense amount of data coming into their homes. He asked if there is a way for that to happen, other than with large towers.

Mr. Maxson said it will be an uphill battle. With ½ acre zoning, it starts becoming more feasible to consider a DAS to serve the area. However, 1 and 2-acre zoning have less potential for DAS layouts. There may be a couple of location in town that might lend themselves to a DAS.

Mr. Leif asked if the next alternative would be a unipole.

Mr. Maxson stated he often sees 100 foot poles proposed because they get above trees and allow collocation. He is seeing heights between 70 feet and 100 feet, about ½ to ¾ of a mile apart, in residential areas.

Mr. Leif asked if there are situation when a WCF may come in and say that's the only thing they can do. Are there are always alternatives?

Mr. Maxson said sometimes you have to negotiate for something more visually acceptable.

With a unipole structure, Ms. Joubert asked if a carrier can locate inside as well outside in order to maximize the use of the pole.

Mr. Maxson stated the antennas and mounting equipment on the outside would be in the way for an colocation inside. It either has to be all on the outside or all on the inside.

Mr. Leif asked if it is true that if there is sufficient height, there shouldn't be an argument that a carrier can't do the job they need to do by mounting inside.

Mr. Maxson responded there should be some alternative, but it may limit the ability of the carrier to do what they want to do. The question is too specific. The way the law works, you have to gather facts on a specific proposal and have those facts on record showing what relative benefits and detriments it will be to the applicant and the town. It's a question of what the impacts are on future facility sites.

Mr. Leif asked Mr. Maxson if he is saying they should not write a bylaw that forces that to happen, but to gather information to show the town's stance is reasonable.

Mr. Maxson replied they need to get information from all sides of the filing. The bylaw might encourage unipoles and then the applicant would have to show why it couldn't be implemented at the proposed site.

Mr. Maxson showed a slide of a stealth rooftop installation on a school in Westwood.

Mr. Blasko noted the town's bylaw requires WCFs to be located 1000 feet from a school.

Mr. Maxson stated there is a lot of discussion regarding WCFs and children. It's not stated in bylaws or regulatory history because the FCC says emissions can't be included. In Westwood, they found they are reducing exposure to people in the school because the radio frequencies are closer to the cell phones in the school, which results in less exposure.

Mr. Leif stated schools are typically 1 level, and asked if rooftop mounts on schools would be better for data.

Mr. Maxson stated the Westwood school basically has a cell tower on the roof. Some towns encourage them on town property in order to have the lease revenue and control.

Technology Trends
Mr. Maxson explained home units (femtocells) and work-arounds are an upcoming technology trend. A femtocell is a small cellular base station, typically designed for use in a home or small business, that connects to the service provider's network via broadband, such as DSL or cable. It allows service providers to extend service coverage indoors, especially where access would otherwise be limited or unavailable. For the cell phone user, the attractions of a femtocell are improvements to both coverage and capacity, especially indoors. Consumers benefit from improved coverage and potentially better voice quality and battery life.

Mr. Maxson stated Alcatel Lucent is coming up with ways to make smarter and more compact antennas with broadband data services driving everything. The LightCube, announced in early 2011, proposed to quickly expand network capacity, lower operating costs, reduce energy consumption and bring connectivity to everyone around the world. It has not done all it claimed to do, and will not eliminate cell towers.

Shot Clock
Mr. Maxson explained the FCC is giving towns 150 days to hear and decide on a new cell tower, and 90 days to hear and decide on co-location. It gives the town an incentive to get the hearing done. If the town has an agreement with consultants in advance, then it is easy for staff to trigger the agreement and bring someone in at the beginning of the filing. He suggested it is necessary to get experts involved early in the process.

Planning Process
Mr. Maxson stated identifying pressure points where capacity demands are likely to occur in town is a next step, as well as working with the town to identify sites to be ready for WCFs when they show up. Substantial evidence needed included minute takers, but it is a better defense to have meetings on video or audio tape, and a stenographer is best.

Regarding the significant gap question, Mr. Maxson stated local bylaws may or may not require a demonstration of need. They may require a general demonstration, and may be entirely different than FCC, which requires a "significant gap". If the board is approving a facility under the bylaw, there may be no need to go to the significant gap question. If a denial is coming, the board can go back and review the significant gap information and see if it's in violation of federal law, including court cases that talk about granting of relief outside the bylaw and state law. Town counsel will be helpful in that process. A tremendous amount of fact gathering is required for a significant gap situation. To save board and staff time, find a way to make the hearing process work as quickly as possible and get what you want.

Mr. Blasko asked how adequate coverage would be determined and how the town would regulate what is adequate.

Mr. Maxson stated it comes down to individual cases and is a fact-based process. Facts need to be collected on what the gap is, who is not being served and what the WCF will do to serve it.

This has evolved to include not only service outside and in a car, but now in buildings also. Case law has to keep up with that. He stated there is not a simple answer to the question.

Mr. Leif asked how far a WCF would have to be from where it intends to go, given the fact there is no interference by trees for the type of applications WCFs are trying to get service for now.

Mr. Maxson stated that distance is not the limit, but rather the distance of existing cell sites and how far they are from the town border and from inside the town. The distance may end up being 1 mile in one direction or less in another. The goal of the WCF is to identify pressure points and address those, whatever size they might be.

Mr. Leif asked if companies would rather have more smaller towers, economically speaking. He asked if they are motivated to go for less facilities.

Mr. Maxson stated they are, it's just that they make decisions on facilities one at a time, on a case-by-case basis, but not collectively in the town. If the town was masterplanned from the start, it might be done in a different way.

Ms. Harrison noted that technology changes, so master plans would have change as well.

Mr. Leif stated the actual technology isn't going to dramatically change and satellites don't work. He asked if there will be more transmitters as data grows.

Mr. Maxson stated the companies are trying to be more efficient getting to the coverage area. With Verizon and AT&T, they have acquired a 700 Mhz channel that gets through vegetation a little better than the high-frequencies they are using today.

Mr. Maxson had to leave at 8pm for a meeting with another client, the town of Westford.

Mr. Leif stated that, inevitably for the growth of services for this industry, there will be more and more confrontation between the needs of carriers, towns and residents. Getting out ahead of the game and doing an analysis of where we have facilities and pressure points is important. He stated he is not sure if this is something that would be in the regular budget of towns and how much it would take to get a warrant article to get funding. He stated his sense is to manage the bylaw properly. It may need changing, but they need to understand independently where gaps are in town and how the board will react when the situation presents itself. He stated they will need to review each filing on a case-by-case basis, but an analysis makes sense to him.

Ms. Joubert stated staff has looked at the schools and talked with the administration, but an initial analysis shows none of them have the right elevation, except possibly the high school.

Ms. Harrison stated she is surprised they haven't seen more filings. She stated the board needs a technical discussion and it's not their job to be equipped to understand it all as an expert/consultant would understand it. She stated she was impressed by Mr. Maxson, but the

board has no one to whom they can compare. The board needs to look at future filings on a case-by-case basis and put pressure on the applicants to pay for technical and legal reviews.

Mr. Leif stated the membership of the Planning Board may change over a period of time. Members may gain some expertise on WCFs and then leave the board. Carriers change and technology is going to change. It would be interesting to bring this before Town Meeting and say a certain amount of money needs to be spent to do an analysis. A master plan is needed to do it, not just looking at them one at a time. One part of it is managing the growth of technology, but also it's inevitable it's going to grow and the demand in town will grow. He stated he likes the idea of predetermining pressure points and bringing in an expert.

Ms. Joubert asked Mr. Leif if it is the identity of future pressure points or a specific kind of cell facility that he wants to include in a master plan.

Mr. Leif responded the process would start with having a technical expert like Mr. Maxson come in and give them an idea of what coverage looks like in the town today – where the gaps are and what the town can do about them.

Mr. Pember noted it would be very cost prohibitive.

Mr. Blasko stated the expert should be involved early in the hearing process. He asked if the board could have the expert at the first meeting and have the applicant pay the expense.

Ms. Harrison stated it would've been nice to have an expert for the police station site. If the town doesn't have to pay for the expert, the board has nothing to lose if they have one.

Ms. Joubert stated the existing bylaw allows for the board to hire an independent consultant to assist the board with reviewing applications.

Ms. Joubert stated if the board wants to do propose an article for a consultant to prepare a master plan for where cell towers should be located, she would like to have a review of the existing bylaw done also.

Mr. Pember stated a review of the bylaw is crucial. Ours is obsolete because all the setbacks are based on a fall zone.

Ms. Joubert stated it is not as obsolete as one might think. The board has a lot of leeway in the bylaw as to where cell towers are located and at what height.

Mr. Leif asked Ms. Joubert about the 90-day and 150-day Shot Clocks Mr. Maxson mentioned.

Ms. Joubert stated a WCF filing with the Planning Board falls under Site Plan Approval which is a 90 day review period so the bylaw coincides with the federal law for review time frames.

Mr. Leif suggested talking about this again at their first November meeting. He stated he is disappointed to hear there is no new technology that would result in cell towers going away.

Ms. Joubert noted she will be talking with the Town Accountant about the remaining funds in the Brigham Woods mitigation account, some of which is earmarked to pay Judi Barrett for her remaining ZBL work on the design review guidelines. She noted cost for Mr. Maxson to come to the meeting tonight for one hour was $900. A quote from Mr. Maxson will be requested for discussion purposes at the next meeting.

Next Meeting: The next meeting is scheduled for November 2, 2011.

Approval of Minutes
The minutes of June 21, 2011 where approved with amendments, and the minutes of September 20, 2011 were approved as submitted.

429 Whitney Street Update
Ms. Joubert informed the board that the state has issued an injunction against S.A. Farms, LLC for issues at the 429 Whitney Street site. October 28th is the next court date.

The meeting adjourned at 9:00 pm.

Respectfully submitted,

Debbie Grampietro
Board Secretary