

SPRINT PCS

Telecommunications Tower Site Review

USE ON REVIEW APPLICATION # 11-J-06-UR

CONSULTANT'S SUMMARY

**Maxey Co. Drop and Swap Site
Hawthorne Avenue**

City of Knoxville

Location: Hawthorne Avenue near Chapman Highway

Proposed Tower Height: 135 foot Monopole

Address: 109 Hawthorne Avenue
Knoxville, Tennessee

District: # 1st City **Map Number:** 109A **Parcel** A-003

Use: Telecommunications antenna support structure

Zoning: I-3 (Industrial)

Variances and waivers: None required nor requested.

Need: The applicant is Sprint, a licensed PCS carrier by the Federal Communications Commission and possibly other users.

Instant Proposal: Construct a 135 foot monopole type support structure.

Consultant's Recommendation: The site and application meets the requirements of the Ordinance and the spirit of the Facilities Plan.



Handwritten signature and date: 10-25-06

**REPORT TO
METROPOLITAN PLANNING COMMISSION**

for

Proposed Telecommunications Tower Site
Located on Hawthorne Avenue
Knoxville, TN known as

MAXEY CO. DROP & SWAP SITE

SPRINT PCS

UOR 11-J-06-UR

COMPLIANCE WITH

THE MPC TELECOMMUNICATIONS FACILITY ORDINANCE

10/25/2006

The proposed site for the applicant is a 135 foot monopole antenna support structure (including antennas and lightning rod) to be located just off Chapman Highway at 109 Hawthorne Avenue. The supporting material from applicant has been reviewed for technical and Federal/State legal compliance As well as with the Knox County Wireless Communication Facilities Plan from 2002. This is a new telecommunications site. This site is known as a capacity site (explained in the report).

REQUESTED

1. **Location.** The location is within the **City** of Knoxville limits in **District 1** and is located on **Tax Map Number 109A Parcel A 003**
2. **Zoning.** I-3 (Industrial)
3. **Tower height.** The requested height is 135 feet above ground level will support up to 2 additional telecommunications carrier antennas for a total of 3 users. Lighting will not be required on this structure.
4. **Variances.** The set back requirements in Article 4 of the Ordinance for Knox County for "I" sites are met with the instant proposal. Thus, no additional variance is required for the tower to be located at the proposed location. There are no residential dwellings in the immediate vicinity. In this case the nearest residential unit is more than 500 feet southwest of the proposed site on the west side the NS Railroad tracks and right of way and also to the south of the site. There is a Norfolk Southern railroad line immediately adjacent to the proposed site on the west and north corner of

the property. The nearest building structure is approximately 100 feet to the east and is a commercial building used by the landlord. The use of the land at this proposed site is permitted under section 5-5.61.02 (AAAA).

5. **Site.** This application is for the construction of a new monopole type antenna support structure to be located on a parking area in an Industrial area on unimproved land just off Chapman Highway on Hawthorne Avenue. There is an existing 125 (est.) foot tower located adjacent to the landowners building that will be removed once this application is granted.

6. **Use.** This antenna support structure will be used for telecommunications with the present state of the art communications technology using PCS and cellular communication sources. The applicant is Sprint Communications and there are 2 possible additional telecommunications users for the facility.

7. **Setbacks.** The setback requirements in for Industrial construction is that the equipment building shall be greater than 20 feet from the road line. The applicant meets that requirement.(Art. 5 Section 5. 61.06)

8. **Height.** The proposed structure is for 135 feet. (Note: The request is for a 130 foot tower plus 1/2 the antenna length or approximately 135 feet.)

EVALUATION

The following is a list of items reviewed:

Zoning Ordinance for Knoxville Tennessee by Metropolitan Planning Commission---Telecommunication Facilities Section (as amended thru October 1, 2004)

Knox County Wireless Communications Facilities Plan dated 2002.

Check for other existing towers capable of supporting the load and elevation clearance requested by the applicant herein and within 1 mile radius of site.

Check for Antenna Support Structure stress analysis for co-location users' equipment support

Review support structure drawings and specifications with applicant

Review FAA lighting and marking requirements and proposals

Review FCC requirements regarding signal coverage, towers and lighting

Review applicant's justification for site in compliance with the FCC's requirements for telecommunication company providers compliance with required coverage for the use of the general public.

Review Site plan by applicant

Check Zoning

Check setbacks for building and antenna support structure

Check for compliance with Wireless Communication Facility Plan

Check proximity to other structures and district boundaries

Check nature of surrounding land uses

Check surrounding foliage and tree coverage

Check design of tower for esthetic changes

Check height requirements necessary for coverage

Check separation from other towers

Check frequencies proposed for possible interference to TV and radio reception in the immediate vicinity of the structure.

DISCUSSION

I visited the proposed tower site that is a part of this review and discussed the area with both the applicant and with Sprint engineering personnel.

There is a small 130 foot communications guyed tower located about 150 feet south east of the proposed site that is owned by the land owner and who proposes to remove same if this application is granted. I requested the applicant to examine the tower for possible use of same. Upon review however, the tower is much too small to accommodate the antennas and feedlines required by Sprint. The tower only has a 14 inch face and would not support the antennas and feedlines required.

The request is for a 135 foot monopole of which Sprint will use the top 15 feet and the additional useable lower 30 feet is for other carriers' expansion.

This a "capacity" site. By that is meant that the coverage is adequate in the area at the present from present facilities, however, the heavy traffic and downtown area communications traffic overloads the present facilities that provide coverage in the area and this results in lost or dropped calls from users. While these dropped calls primarily occur during morning and afternoon drive times, the records show that there often dropped calls during the normal business day hours also.

The proposed location is on the parking lot of the Maxey Company and is in the middle of a Norfolk Southern "Y" railroad junction. I did not check with the railroad about any future plans they may have about the possibility of making a delta junction at this location, but that would appear to be a natural. If that is the case, the proposed support structure will have to be moved, however, that is at least 5-10 years in the future, if at all.

DISCUSSION RE FACILITIES PLAN

The Facilities plan is a guideline adopted by the MPC in 2002 for the placement and appearance of wireless communications facilities. The following discussion is based on this application and how it relates to the Plan. The plan is an advisory plan and not a legal requirement.

(1) **View Protection**--The short structure (135 feet) coupled with no lighting requirements and located in a commercial/industrial area should present no problems as to view. It is shielded on the south side by the Ft. Dickson hill about 1/2 mile distant.

(2) **Land Use Compatibility**---The proposed site is on an unimproved parcel of land adjacent to Norfolk Southern Railroad tracks on two sides and industrial/commercial establishments on the other. There are no other planned uses for the property.

(3) **Design Compatibility**---The proposed landscaping and facility design would blend in with surrounding land usage and design.

(A) **Opportunity Areas**---This proposed site is in an area zoned Industrial and is a parking lot that is unused. It is unlikely to become a blighting influence on the surrounding area.

(B) **Sensitive Areas**---This site is not in a potentially sensitive area in that it is located much more than 500 feet from any low density residential homes.

(C) **Avoidance Areas**---This location is not in an avoidance area.

SUMMARY

(1) The proposed antenna support structure is a 135 foot monopole including antennas. There are no lighting requests for this structure nor are any required by the FAA.

(2) A review of the structure stress analysis on the proposed structure and specifications support the use of the monopole by two other potential users in the future.

(3) The structure design meets or exceeds FCC and EIA requirements.

(4) The area immediately to the east is used as commercial and industrial facilities. The area to the west is also industrial on the other side of the railroad tracks. There are no residences in the immediate area on the same side of the railroad.

(5) There is no general use technology (such as satellite communications) that is available at the present time nor in the immediate future that would negate the need for the structure. However, should such a technology become available and the structure of no further use, the Ordinance at Article 4.92.03 requires it to be removed.

(6) The proposed equipment housing facility is an outdoor cabinet and will have no impact on the aesthetics of the adjacent land uses. The landscape plan indicates that the fenced area will be surrounded by vegetation as coverage for the location.

(7) The applicant has received authorization from the various governmental agencies, including the Federal Communications Commission, to provide communication service to the citizens of Knoxville, Tennessee.

(8) The requested site will have little impact on the community involved when compared with the benefits to be derived from the advanced service offered by the applicant.

(9) There are no other antenna support structures within 1 mile of the proposed site that are usable for the coverage required. It is perhaps possible to use the roof of the Baptist Hospital across the road from the proposed site as it has the elevation required, however, there is a possibility that a location that close to critical medical electronic equipment could cause problems within the hospital.

(10) There are no additional setback requirements for the proposed site.

(11) The proposed site and structure will have no environmental impact within the federal guidelines.

(12) No variances or exceptions to the Knoxville Ordinance are required for this site.

(13) The nature of the development in the surrounding area is not such as to pose a potential hazard to the proposed tower or to create an undesirable environment for the proposed structure.

(14) Assuming that there are 3 carriers operating cellular or PCS transmitters/receivers at this site and all are operating at the same time, the radiation produced by the combination of all the users at the same time using the standards and protocols proposed and used by the carriers today, will be considerably below that established by the Federal Communications Commission and the EPA as creating any danger to humans or animals.

(15) There is a need for the structure in this area to provide for the wide spectrum wireless internet service and for other wireless voice and data services to be provided under government regulation by the various proposed carriers who plan to use the sit

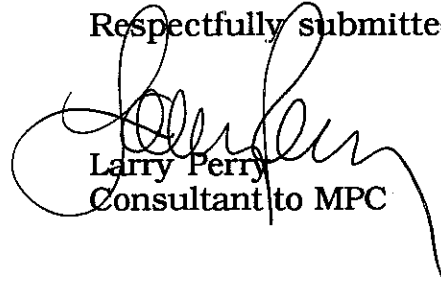
(16) There is an existing light communications tower located adjacent to the land owner's building that will be removed if this application is approved.

(17) The applicant proposes to use close mounted antennas to be mounted on the face of the monopole and not in a candelabra fashion at the top. This will blend more into the environment.

RECOMMENDATION

In light of the analysis and review of documents, it is my professional opinion that the applicant meets all requirements of the Ordinance and the spirit of the Facilities Plan as discussed above and is required for the applicant to meet their coverage requirements for the City of Knoxville. However, I have not looked into future river development plans by the City or any developers.

Respectfully submitted,



Larry Perry
Consultant to MPC

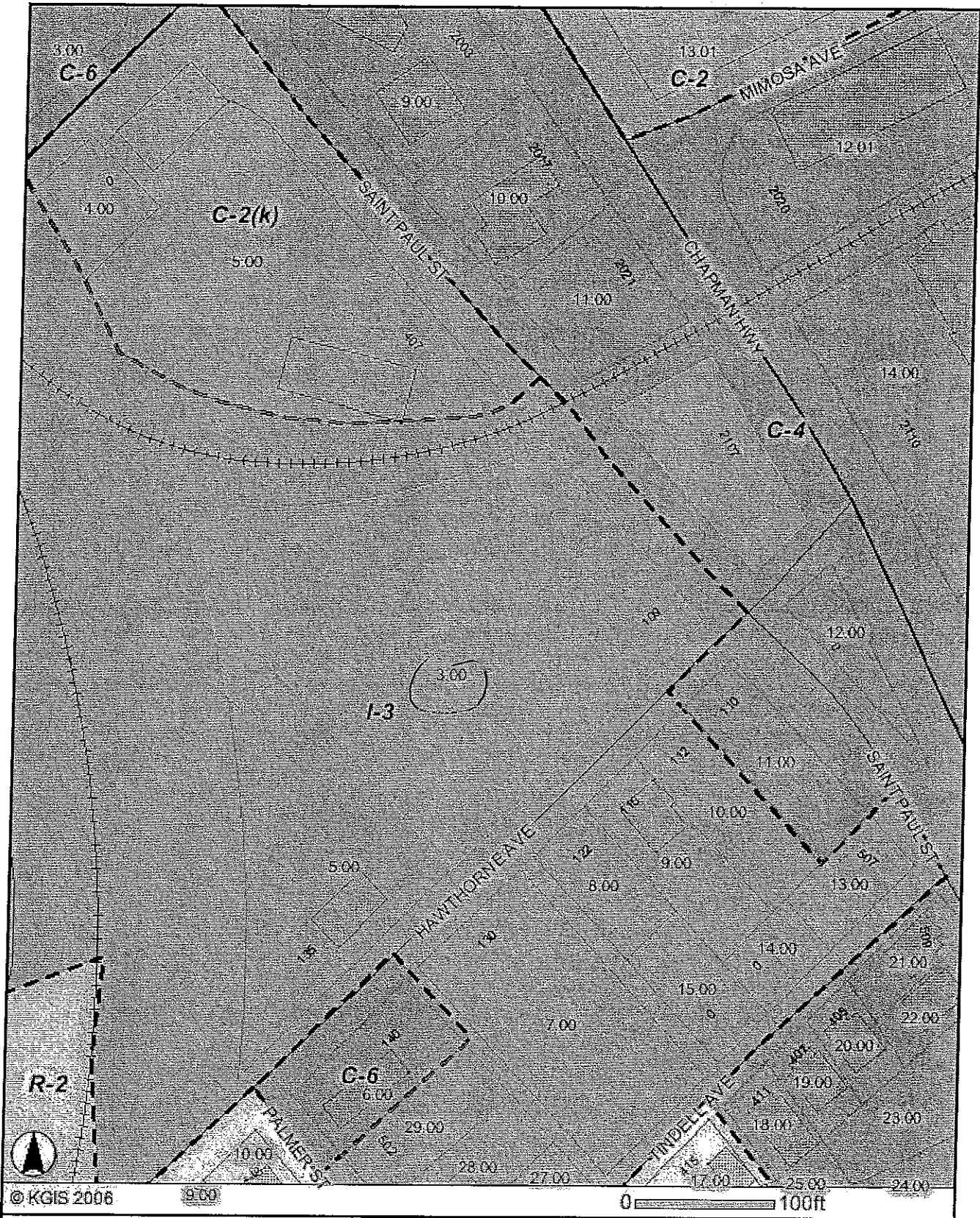
SPRINT CHAPMAN HWY 11-J-06-UR



Proposed tower site



Existing 125 foot tower

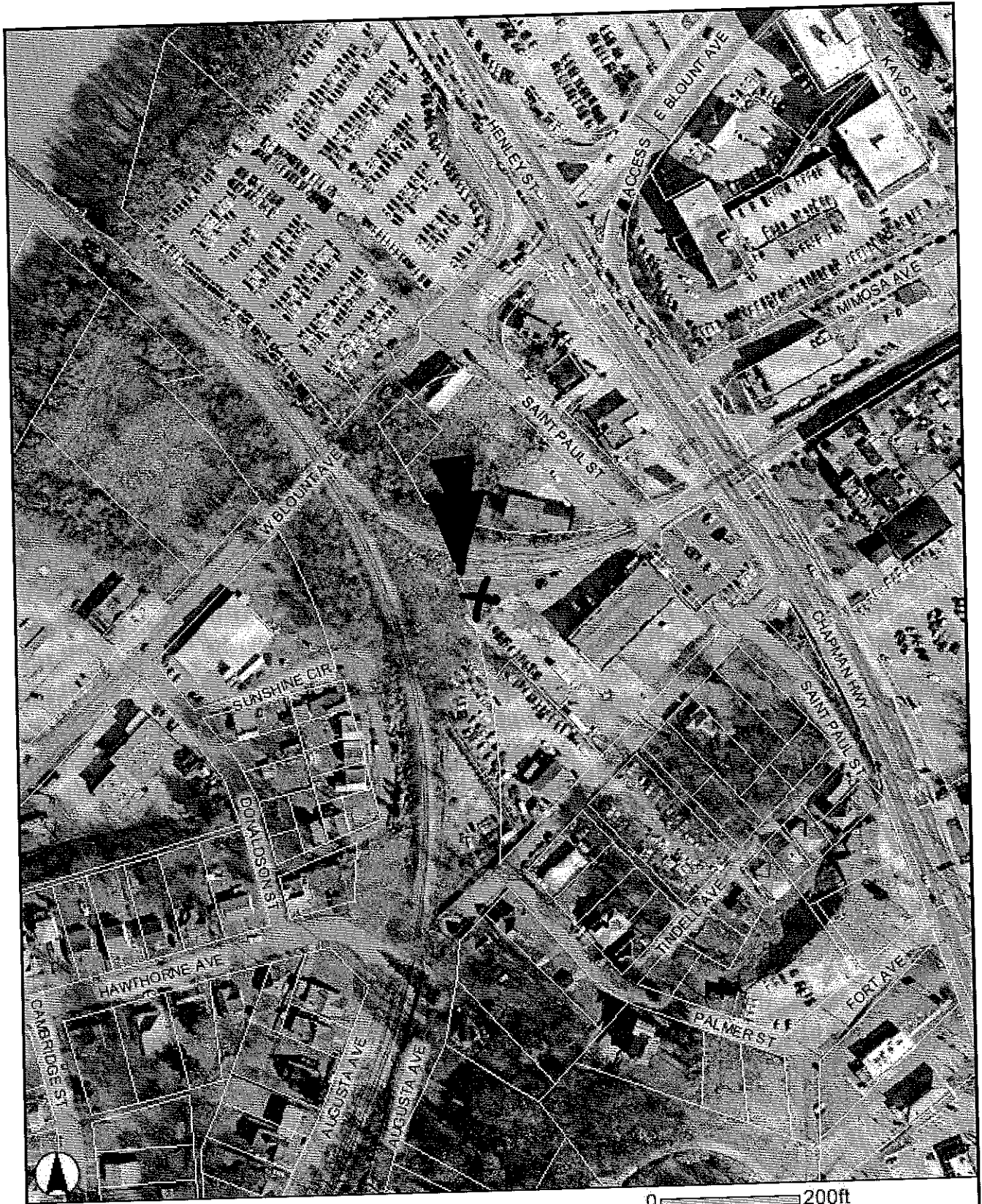


KGIS Map

KGIS - 606 Main St - Suite 150 - Knoxville, TN 37902 - www.kgis.org

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KGIS Map

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**EXHIBIT 7.
LAND USE/WIRELESS FACILITIES MATRIX**

	Co-Location	Stealth Structure	Low Monopole Below 90'	Moderate Monopole 90'-150'	Tall Monopole 150'-199'	Lattice Tower	Guyed Tower
Opportunity Areas	Industrial/Business Park						
	Industrial Use						
	Pre-approved Government-owned Property						
	Urban Expressway Corridor						
	Rural/Heavily Wooded						
	Pasture						
	Central Business District						
	Office/Commercial Corridor						
Shopping Center							
Sensitive Areas	Within 500' of a residence						
	Rural Residential						
	Non-residential Properties in a Residential Area (church, cemetery, library, etc.)						
	Multi-family Residential						
	On Hill Below Ridgeline						
Avoidance Areas	Conservation Open Space						
	Scenic Highway						
	Public Park						
	Ridge Top/Ridge Line						
	Scenic Vista						
	Historic District/Site						
	Single-family Residential						
	Vacant Residential Lot						

 Encouraged
  Neutral
  Discouraged

Value Concepts, Inc.

VCI • 114 Stone Mountain Street • Suite D • Lawrenceville, GA 30045

September 29, 2006

Knoxville-Knox County
Metropolitan Planning Commission
400 Main Street, Suite 403
City County Building
Knoxville, TN 37902

RE: Proposed 130' Flush Mount Monopole Tower @ 2107 Chapman Highway
(Parcel ID - 109AL003): KX65XC501D

Dear Honorable Commission Members:

On behalf of Sprint PCS and the land owner, Maxey Companies, LLC, I respectfully request submit this application for a Use on Review of a wireless telecommunications facility. This facility is to be built for Sprint and its wireless network. The proposed project includes a 130' flush mount monopole tower to be located at 2107 Chapman Highway, but will be accessed off of Hawthorne Avenue.

The search radius is very specific due to the existing Sprint sites. There were no existing or acceptable structures within this area. The search radius is very specific due to existing Sprint sites and how this proposed site fits into the existing network coverage. The proposed facility is to relieve capacity of existing, nearby Sprint sites and to provide in-building penetration for this area of the City of Knoxville.

To meet coverage objectives, we had originally proposed a site to the MPC off of Blount Avenue (File #8-C-05-UR) which had staff support and MPC Consultant Larry Perry's recommendation of approval, but withdrew this application on May 9, 2006 due to concerns over the possibility of the widening of Blount Avenue as a part of the proposed redevelopment of this area and concerns over the visual impact the proposed tower would have on Fort Dickerson.

This proposed site is located to the rear of a 1.63 acre tract that is zoned I-3, General Industrial District and should not impact any proposed road widening projects for Hawthorne Avenue or Chapman Highway. Additionally, the subject tract includes an existing tower that is approximately between 140' to 150' however, this tower is not

strong enough to accommodate Sprint's antennas and coaxle cable. If co-location on this tower had been feasible, we would have moved forward with co-location because it is less expensive and less time consuming to do so.

As a part of this proposal the existing tower will be removed if this application is approved. The new proposed tower is a flush mount tower which means it will not include the typical "crow's nest" antenna array. Additionally the proposed tower will not be as tall as the existing tower. Therefore, this proposal should not visually impact the view from Fort Dickerson or further impact this area of Knoxville since it is replacing an existing, taller tower.

Furthermore, Sprint is not the only wireless carrier that requires coverage in this area of Knoxville. US Cellular also has a need to provide coverage in this area of Knoxville. US Cellular has initiated the process to co-locate on this proposed tower. Therefore, **Article 5 Section 20 Commercial Telecommunications Facilities B. Development Standards 1. Co-Location Requirements** will be met. Once the tower is complete there will be two carriers providing better coverage for its customers, who rely on their wireless service in every day activities and in the event of emergencies.

As the City of Knoxville works toward redeveloping this area, wireless service will be important to developers and contractors. Additionally, as the area becomes redeveloped new residents and visitors to the area will rely on wireless coverage. The proposed tower is a flush mount monopole and will not impact any future development plans. Actually the proposed tower will be an important part of the infrastructure of this area.

The proposed site meets all requirements of the City of Knoxville Ordinance and will meet all local, state, and federal requirements in its design, construction, and operation. Pursuant to the Facilities Plan adopted by the Metropolitan Planning Commission in 2002 I submit the following:

- (1) View Protection – The tower is proposed to be at a maximum height of 130' and a flush mount monopole design and will therefore have a minimal impact on the surrounding industrial and commercially zoned properties. This site will be replacing an existing, taller tower, so there will not be an additional impact. Due to the proposed height of 130' there will be no lighting on the structure.
- (2) Land Use Compatibility - The subject property is zoned I-3, General Industrial District, which allows more intense uses than this proposed facility. This facility will be unmanned and will have no substantial increase of noise, air pollution, or traffic. Furthermore the proposed facility will not burden any city services.

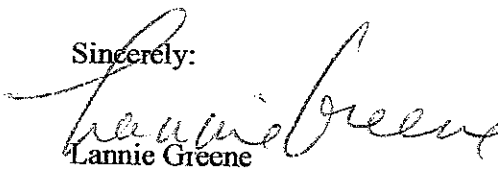
Adjacent and surrounding properties are zoned I-3, General Industrial District, C-2, Central Business District, C-4, Highway and Arterial Commercial District. The proposed location is within an Opportunity Area and the proposed facility is encouraged within this area according to the Land Use/Wireless Facilities Matrix.

The site is located within 500' of a residence (although the residential properties are zoned I-3, General Industrial District) and is therefore also considered to be within a Sensitive Area. The location of the facility, adjacent to railroad line spurs and to the rear of the subject site should minimize the impact of the residential areas. Furthermore, the Land Use/Wireless Facilities is neutral to this location due to its consideration as a Moderate Monopole with a height of 130'.

- (3) Design Compatibility –The facility design will not impact the existing uses of surrounding properties due to the industrial and commercial zoning districts throughout the area. These properties could be developed with more intense uses than this proposal. The proposed structure will be considered a Moderate Monopole according to the Land Use/Wireless Facilities. Monopoles, especially with the proposed flush mount antennas, are often considered the least obtrusive type of structure.

I appreciate your time in reviewing this application. If you require additional documentation or information please feel free to give me a call at (770) 995 – 2714.

Sincerely:



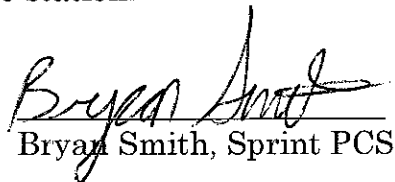
Lannie Greene

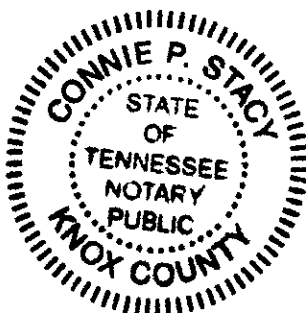
Project Manager

Value Concepts, Inc. for Sprint and Maxey Companies, LLC

5. The proposed location of the base station was selected based upon a Search Ring of the City of Knoxville and the surrounding area, issued to AFL Telecommunications. The comprehensive Search Ring designated an area on a topographical map indicating where a site must be located to meet defined coverage objectives. The following criteria were employed to evaluate all potential alternatives; land use compatibility; aesthetic compatibility; engineering suitability; ability to lease; and constructability. This process was undertaken for this proposed base station and the site at 109 Hawthorne Ave. and was judged the best for allowing Sprint PCS the opportunity to meet its coverage objectives and to provide telecommunications services to the public in the most efficient manner possible.
6. Because no suitable tower or structure exists within the area needed to provide seamless coverage for Sprint PCS, issues such as; the structural strength of existing towers or structures, electromagnetic interference with other carrier's antennas, fees or costs associated with co-location on an existing structure, were not relevant to the decision to construct this base station rather than collocate.
7. The tower to be located in the City of Knoxville is designed to be no higher than necessary to provide telecommunications services to the City of Knoxville and the State of Tennessee. No alternative technology that is deployed as a part of the Sprint PCS network exists to replace this proposed base station.
8. It is the standard business practice of Sprint PCS to allow for and to facilitate co-location of additional tenants on all towers it constructs. The proposed tower will accommodate at least two additional tenants.
9. Sprint PCS will comply with all applicable Federal Communications Commission and Federal Aviation Administration rules and regulations in the placement, design, construction and operation of this base station.

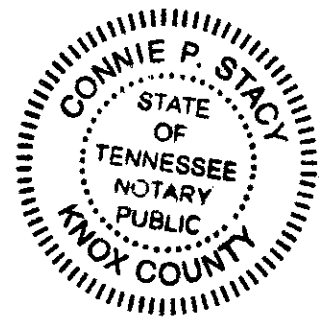
Further, Affiant saith not.


Bryan Smith, Sprint PCS



Sworn to and Subscribed before me
This 2nd day of October 20016

Connie P. Stacy
Notary Public
My Commission Expires: 6/7/08





Sprint Nextel
104 Continental Place, Suite 100
Brentwood, TN 37027
Office: (615) 661-8400 Fax: (615) 661-8466

RE: Proposed Sprint-Nextel Site #KX65XC501
Hawthorne Ave./Chapman Highway
Maxey Co. Drop & Swap

To Whom It May Concern:

Please allow this letter to confirm that Sprint agrees to make all of its wireless telecommunications facilities in the City of Knoxville and Knox County available to other wireless providers for co-location, provided such facilities are structurally and technically able to accommodate additional providers and provided that the wireless provider and Sprint can agree to all reasonable terms and conditions.

Should you have any questions, please contact me directly at (615) 661 - 8390.

Thank you.

A handwritten signature in black ink that reads "Karl Wagnon". The signature is written in a cursive, flowing style.

Karl Wagnon
Sr. Manager - Site Development