

**Board of Supervisors
Transportation and Land Use Committee
Information Item**

#8

SUBJECT: Overview of Telecommunication Plan Policies

ELECTION DISTRICT: Countywide

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BACKGROUND:

At the July 19, 2011 Business Meeting and in conjunction with a discussion of the T-Mobile Sterling (CMPT 2008-0008 & SPEX 2008-0030) application the Board of Supervisors voted 9-0 to direct staff to prepare an information item for the Transportation and Land Use Committee regarding the County's telecommunication policies. A brief overview of the Strategic Land Use Plan for Telecommunication Facilities (Telecommunication Plan) and a chronology of significant actions since its adoption are discussed below.

No actual amendments to the Telecommunications Plan and/or Amendments to the Zoning Ordinance related to telecommunication uses have occurred since the late 1990s (Table 1). Currently there are over 100 telecommunication facilities constructed in Loudoun County, they include lattice towers, monopoles, antennas mounted on high-voltage electric transmission towers and water towers, building mounted antennas, and several stealth design facilities, including a tree pole, flag poles, a clock tower and a hose tower associated with a fire station (Map Attachment 1).

TABLE 1

Action	Description
<i><u>Strategic Land Use Plan for Telecommunication Facilities</u></i> - Adopted by Board of Supervisors November 6, 1996.	A strategic plan which is a component of Loudoun County's Comprehensive Plan (<u>Revised General Plan</u>). The policies of the Telecommunication Plan provide guidance on the location, siting, design and mitigation of negative impacts of telecommunication facilities throughout the County. The Plan provides a framework for evaluating telecommunication proposals through the County's legislative review process
<i>Strategic Plan for Wireless Telecommunication Facilities</i> -The Atlantic Group consultant study dated April 9, 2002.	A consultant study contracted by Loudoun County to inventory and assess the need for telecommunication facilities. The study considered future development scenarios and action strategies. Recommended revisions to policy and ordinance documents and application processing.
Joint Committee Report on Telecommunication Facilities dated October 7, 2002.	Special Board-appointed committee that developed recommendations for policy and application processing changes based on a previous consultant study. The committee recommended increased application filing fees to fund technical consultant reviews as needed.

<i>Supplement to the Strategic Plan for Wireless Telecommunication Facilities</i> -The Atlantic Group consultant study dated May 25, 2007	An update to a previous consultant study contracted by Loudoun County to inventory and assess the need for telecommunication facilities. The study documented new telecommunication facilities and identified areas where additional coverage was desirable in the County.
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Telecommunication Plan

The Strategic Land Use Plan for Telecommunication Facilities (Telecommunication Plan) is a component of Loudoun County’s Comprehensive Plan (Revised General Plan). The policies of the Telecommunication Plan provide guidance on the location, siting, design and mitigation of negative impacts of telecommunication facilities throughout the County. The Plan provides a framework for evaluating telecommunication proposals through the County’s legislative review process (Attachment 2).

The Planning Commission in 1993, requested and received a briefing by the Federal Communication Commission (FCC) on siting criteria, types of tower designs, tower capacities, minimizing visual impacts and technological impacts of telecommunication facilities. Later that year the Commission formed an ad hoc subcommittee, the Communications Towers Subcommittee, tasked with developing policies and zoning ordinance language for the establishment of telecommunication facilities in the County. Throughout 1994 the subcommittee reviewed policy and ordinance documents from neighboring Fairfax County and other jurisdictions, and received input from citizens and representatives from the telecommunication industry, as they prepared their draft language. The subcommittee’s draft language was presented to the full Planning Commission where it was further refined by the Transportation, Subdivision and Site Plan subcommittee of the Planning Commission during the spring of 1996. The Telecommunication Plan was adopted by the Board of Supervisors on November 6, 1996 (Attachment 2). The document is divided into a Background section and a Policy Section devoted to Location Policies, Design Standards, Safety and Health Policies and Implementation Policies.

Location

The policies of the Telecommunication Plan establish a hierarchy of preferred locations for new commercial public telecommunication facilities and acknowledges the importance of maintaining the scenic and visual quality in the County. The County’s first preference for new telecommunication facilities is collocation on existing buildings, towers, monopoles, water tanks, overhead utility transmission line structures and other tall structures where possible. When this is not feasible, the County prefers that new telecommunication facilities be located in planned industrial, commercial and employment areas where they are the most compatible with the surrounding land uses. In rural areas, antennas are preferred on existing tall structures, though towers and monopoles are permitted by Special Exception subject to performance criteria that mitigate their impacts. Towers and monopoles are prohibited in County designated historic districts.

Design Standards & Health and Safety

The Telecommunication Plan outlines a series of design standards to mitigate the visual impacts of commercial public telecommunication facilities so as to blend with the natural and built environment of the surrounding area. The Plan directs that specific attention be paid to issues pertaining to the setting, color, lighting, topography, materials, and architecture of telecommunication facilities. In rural areas the Plan recommends that telecommunication facilities locate in or near existing mature vegetation to provide screening for a portion of the facility. The policies also encourage the use of camouflage/concealment techniques to minimize the visual impact of telecommunication facilities. The policies call for telecommunication facilities to be designed and constructed to the minimum height necessary to accommodate three providers in order to encourage collocation and minimize the proliferation of new facilities. The Plan requires the submission of visual imagery (photo-simulations) for all applications to clearly demonstrate the visual impact of a new structure on the surrounding area. To address health and safety issues, the policies stipulate that applications must comply with Federal Communications Commission (FCC) regulations. The County cannot require telecommunication facilities to meet radio frequency emission standards greater than those required by the FCC. The policies also require that unused telecommunication structures be removed from the site within 90 days of cessation of use.

Zoning Ordinance

The policy guidance of the Telecommunication Plan was incorporated incrementally into the County's Zoning Ordinance through two zoning ordinance amendments, ZOAM 1995-0002 Zoning Ordinance Annual Review and ZOAM 1996-0004 Telecommunications Use and/or Structures. The zoning ordinance includes definitions and standards for "Telecommunications Use and/or Structures" (Section 5-618) which include specific performance standards to limit the height, size, and color of antennas and their associated mounting facilities. The zoning ordinance also specifies which zoning districts telecommunication facilities, inclusive of antennas, monopoles and towers, are permitted either by-right or by Special Exception. In general, telecommunication facilities are prohibited in residential zoning districts (with the notable exception of the CR (Countryside Residential) zoning districts, as highlighted by the T-Mobile Sterling application).

Consultant Studies and Inventory

Following the adoption of the Telecommunication Plan and Amendments to the Zoning Ordinance in the late 1990s, the County funded two consultant studies by the Atlantic Group to inventory and assess the need for telecommunication facilities. The first study, completed in 2002, identified approximately 50 commercial antenna sites in the County. The study used radio frequency (RF) propagation modeling to evaluate existing cellular coverage in the County and estimate the number of sites a carrier may require based on height. The study concluded that by constructing 45 strategically located monopoles at a height of 199 feet coverage of the entire County was achievable. As the heights of the monopoles decreased more locations would be needed, such that 180 monopoles at a height of 80 feet would be required to provide similar coverage (p. 26-42). The study highlighted the problem facing County's planners and decision makers at the time, between the choice of taller and fewer or shorter and more numerous telecommunication structures and the effects of the visual impact of these structure on the

suburban and rural landscape of the County. The study also included recommendations for revisions to the Telecommunication Plan consistent with the 2001 Revised General Plan land use policies and also recommended zoning ordinance revisions. In general these policy and zoning recommendations encouraged the co-location of facilities, the protection of environmental features through appropriate siting, and the minimization of visual impacts (p. 46-47). The consultant study recommended that co-location, extension of existing structures to accommodate co-location, low-rise development (less than 80'), or any installation incorporating stealth techniques be considered for Administrative Review by County staff, while all other applications would be reviewed through the Special Exception process for legislative review (p.48-49). The proposed zoning ordinance amendments recommended by the consultant took the County's checklist items required for the submission of telecommunication applications such as an inventory of existing tall structures, signal propagation studies, compliance with FAA, FCC and NEPA regulations etc. (p. 52-54), and recommended they be incorporated into the Zoning Ordinance (Attachment 3).

In May 2002, the Board of Supervisor directed the Planning Commission to form a Joint Committee to review and provide comment on the Strategic Land Use Plan for Telecommunication Facilities (Telecommunication Plan) in light of the recommendations provided by the Atlantic Group in their *Strategic Plan for Wireless Telecommunication Facilities-2002*. The Joint Committee, using the consultant's language from the study as a baseline, refined and clarified the recommended changes to policy. In general, the majority of the recommended edits provided by the committee were largely editorial; however the Committee did reject the consultant's recommendation that certain types of telecommunication facilities should be approved administratively by County staff and continued to support the process of reviewing all telecommunication applications through the legislative process. The Committee also recommended an increase in the fees for telecommunication applications so that a funding source was available to the County for consultant services to independently evaluate telecommunication applications if necessary. The Joint Committee recommendations were presented to the Board of Supervisors in October 2002. The Board did not pursue further action on these recommendations (Attachment 4).

In 2007, the Atlantic Group completed a *Supplement to the Strategic Plan for Wireless Telecommunication Facilities* which provided an inventory of new telecommunication facilities within the County and provided an overview of new technology as it related to the transition from digital voice personal communications systems (PCS) to wireless broadband to support the transfer of data. The study did an analysis of current coverage and identified 16 geographic areas, predominately in western Loudoun, where telecommunication facilities could be developed to fill large voids in coverage (Attachment 5).

ISSUES AND DISCUSSION

The number of Commission Permits, Special Exceptions, Site Plan Amendments and Building Permit applications for telecommunication facilities processed by the County has increased significantly over the past years as changes in technology and market sectors have expanded. Specifically, the telecommunications industry is in the process of transitioning from "G3" to "G4" mobile broadband, which represents the next generation of technology supporting the

evolution of smart phones and other advanced cellular technologies which enable faster streaming data and multi-media. In response to consumer demand the telecommunications industry has focused their current network development on the provision of in-home coverage and are proposing more telecommunication facilities in proximity to residential areas. Additionally, in areas where there is existing coverage, providers are finding it necessary to locate additional antennas closer together to increase network capacity to support smart phone technology and the growing number of mobile broadband users.

Because wireless telecommunication operates on a principle known as line-of-sight transmission, meaning wireless users have to see an antenna site to receive and send signals, there are valid technical considerations for locating telecommunication facilities in close proximity to the end users. As such, the majority of existing telecommunication facilities developed in the County over the past 20 years were developed to provide coverage to users in their cars and located in proximity to major roadways and commuter routes, where a network of reliable voice cellular service now exists.

The presence or possibility of telecommunication facilities, whether monopoles, roof-mounted antennas or some type of “stealth” design facility often involve passionate debates from citizens and decision makers who are aware and care about the appearance of their community. While some raise concerns about health issues, the overwhelming issue is the visual impact of telecommunication facilities. As a result, in recent years the number of telecommunication facilities proposing camouflage/concealment techniques has increased incrementally. The use of these “stealth” designs that mimic architectural elements, agricultural structures and trees are a viable alternative to standard monopole construction in the suburban and rural areas of the County if properly designed and executed to blend with the surrounding landscape. The existing policies of the Telecommunication Plan encourages the use of camouflage/concealment techniques to minimize the visual impact of telecommunication facilities and reflect the County’s commitment to maintaining the aesthetic, scenic and visual quality of the suburban and rural landscape. However, there has not been consistent support for any one particular “stealth” design which would guide the industry toward specific solutions. Each application has been evaluated on a case-by-case basis applying Plan policies and the standards of the Zoning Ordinance.

Planning Commission Recommendations

Most recently, the Planning Commission in a letter dated June 22, 2011 recommended the Board of Supervisors reevaluate the policies of the Telecommunication Plan. Specifically the Commission recommends further consideration of policies to guide the location, siting, design, and appropriateness of telecommunication facilities in proximity to residential communities and within residential zoning districts. The Commission is finding that as demand increases, the need for capacity and the demand for in-the-home service require more telecommunication facilities in the suburban area; raising conflicts with established communities. The Commission is encouraged by the evolving technology such as the Distributed Antenna System (DAS) and encourages the Board to review policies that will facilitate new, less intrusive technology. The Commission has also found what it feels is an unintended consequence of encouraging antennas on existing tall buildings. In Countryside, Lansdowne and elsewhere there are examples of

buildings with rooftops that have become crowded with antennas from various telecommunication carriers were the unsightly visual appearance is a concern. The Planning Commission requested that the Board consider the retention of an unbiased qualified professional and/or form a Telecommunication Committee to add technical expertise in support of the decision-making process. Such expertise could evaluate the technology options that might be available on particular applications and assess the impact of different variables such as height, facilities design and location. The Planning Commission also suggested that since some antennas have become smaller and less obtrusive, that the County should consider whether certain types of antenna should still require a Commission Permit.

Currently, the Planning Commission is reviewing ZOAM 2011-0002 Amendments to Zoning Ordinance- Distributed Antenna Systems (DAS), which recommends that antenna nodes mounted on existing and replacement utility distribution and transmission poles and street lights less than sixty (60) feet in height be permitted by-right in all zoning districts without approval of a Commission Permit or Special Exception. The installation of the antenna nodes would require administrative site plan and building permit approval from the County prior to construction. No policy revisions is necessary given that the Telecommunication Plan already supports the co-location of antennas on existing tall structures such as utility poles and streetlights to minimize the need for construction of new telecommunication facilities.

Possible Next Steps

While the policies of the Strategic Land Use Plan for Telecommunication Facilities (Telecommunication Plan) have not been updated or amended since their adoption 15 years ago, the general guidance provided in the document still addresses the common issues of location, siting, design, visual impact and compatibility that are the core of any review of a telecommunication application. However, as noted above, there may be room to refine the policies regarding antennas, to clarify the role of stealth design and to examine opportunities arising from new technology. As such, the Transportation and Land Use Committee may want to consider and discuss the merits of the existing policies of Telecommunication Plan in light of the issues raised by the Planning Commission. Alternatively, if the Transportation and Land Use Committee finds the existing policy direction in the Telecommunication Plan continues to be satisfactory, the Committee may wish to recommend that a Zoning Ordinance Amendment (ZOAM) be initiated to specifically address the Planning Commission comments pertaining to the appropriateness of telecommunication facilities in proximity to residential communities and within residential zoning districts. Staff would look to the Board of Supervisors for direction on future efforts and prioritization of staff resources.

ATTACHMENTS:

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| 1. | Map-Telecommunications Facilities Inventory 2011 | page A1 |
| 2. | Strategic Land Use Plan for Telecommunication Facilities-1996 | Web Only |
| 3. | Atlantic Group Consultant Study-2002 | Web Only |
| 4. | Joint Committee Report on Telecommunication Facilities -2002 | Web Only |
| 5. | Atlantic Group Consultant Study-Supplement-2007 | Web Only |

* Paper copies of the attachments are available for review at the Department of Planning.