Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Fostering Innovation and Investment in the Wireless Communications Market	)	GN Docket No. 09-157
	)	
	)	
A National Broadband Plan for Our Future	)	GN Docket No. 09-51

To: The Commission

COMMENTS OF EXTENET SYSTEMS, INC.

I. INTRODUCTION

ExteNet Systems, Inc. ("ExteNet") is an innovative telecommunications company that builds and operates customized distributed antenna system ("DAS") networks that extend or enhance the capabilities of wireless service providers in areas that are difficult to serve with traditional wireless sites.

ExteNet supports the Federal Communications Commission's ("Commission") efforts "to understand better the factors that encourage innovation and investment in wireless and to identify concrete steps the Commission can take to support and encourage further innovation and investment in this area."[1] Specifically, we commend the Commission for its decision to seek information specifically on how DAS networks may play a role as a wireless deployment resource.[2]

ExteNet is pleased to take this opportunity to inform the Commission of its experience

[1] *Fostering Innovation and Investment in the Wireless Communications Market*; *A National Broadband Plan for Our Future*; GN Docket Nos. 09-157; 09-51, *Notice of Inquiry*, FCC 09-66 (rel. Aug. 27, 2009) at ¶ 1 ("*NOI*" or "*Notice of Inquiry*").
[2] *Id.* at ¶ 53.

deploying DAS infrastructure throughout the United States to extend the networks of the wireless service providers and thus meet the growing needs and demands of customers, who feel nothing but seamless and fast wireless coverage is sufficient. However, barriers still exist, and ExteNet urges the Commission to take a hard look at the suggestions contained herein that would remove the obstacles and deterrents to DAS infrastructure deployment.

II. DAS NETWORK INFRASTRUCTURE

A. Construction of DAS Networks

DAS networks enable wireless service providers to improve their service offerings, operate more efficiently and be more competitive in a number of ways, including (i) providing better coverage in areas that cannot be reached by traditional wireless sites due to various factors such as topographic, zoning, or financial impediments and (ii) increasing capacity in areas of high demand.

Unlike tower and roof top sites, which utilize private property, outdoor DAS network are almost exclusively deployed in the public rights-of-way on existing utility and municipally owned infrastructure, such as utility poles, street lights, and traffic signals. Multiple DAS antennas are connected by fiber optic cable that terminates at the base station hub of the wireless service provider or providers utilizing the network. Depending on the geographic location, in excess 300 DAS antennas could be linked back to a single base station hub, thus allowing certain technological upgrades to be made at one central location to reach a vast geographic area.

ExteNet is a neutral host DAS provider, so once a DAS network is deployed, multiple wireless carriers may simultaneously use it. For example, in one particularly difficult area to cover in California, three wireless service providers are using ExteNet's DAS network to provide improved coverage and capacity to their customers. DAS infrastructure also allows multiple

wireless frequencies and technologies to cohabitate, so in that same California network, carriers are utilize CDMA, UMTS, IDEN, and GSM technologies.

Constructing a DAS network requires a substantial upfront capital investment. Because networks may be used by a traditional wireless service provider for gap filling and/or increased capacity, by a new wireless entrant seeking to launch an entire market, or a combination of both, DAS networks are highly customized designs, which makes DAS infrastructure deployment very transaction cost sensitive. Excessive or unreasonable construction costs or attachment charges can effectively prohibit a DAS network from being constructed.

B. Benefits of DAS Networks

As the Commission points outs in this Notice of Inquiry, "Wireless communications is one of the most important sectors of our economy and one that touches the lives of nearly all Americans."[3] DAS networks are a key deployment resource to allow wireless service providers to offer customers the seamless coverage and increased capacity they demand in today's market place, particularly as wireless broadband emerges. DAS infrastructure plays a key role in wireless broadband investment because it offers a number of unique benefits.

1. Efficient Use of Spectrum

The Commission recognizes that "as wireless is increasingly used as a platform for broadband communications services, the demand for spectrum bandwith will likely continue to increase significantly."[4] The networks of the wireless service providers must absorb these increasing demands due to the continued and growing popularity of "smart phones," such as the Blackberry and the iPhone. In effect, consumers' demand for high speed data in addition to traditional voice services have turned handsets into portable internet browsers. DAS

[3] *Id*. at ¶ 1.
[4] *Id*. at ¶ 20.

infrastructure helps ease this burden by making existing spectrum function more efficiently.

Two of the key differences between a DAS network and a traditional tower or roof top site are (1) the relatively low height of the antenna on a utility pole or street light and (2) the greater proliferation of DAS antennas to cover the same geographic area. These two aspects combine to put a wireless devise, such as a handset or internet air card, in closer proximity to the antenna than it would be otherwise. Closer proximity of a wireless devise to an antenna allows spectrum to be used more efficiently, thus boosting throughput speeds, which is especially important as Fourth Generation ("4G") technology is deployed. DAS networks are ready to meet that demand.

2. *Energy Efficiency*

The Commission seeks comment on how wireless innovations may be "more energy efficient or address other environmental concerns."[5] DAS networks offer increased energy efficiencies as another benefit of the close proximity of a wireless handset to an antenna. When a handset cannot receive a full-strength signal from a distant tower, the handset increases output power, which in turn decreases the battery life. As the United States moves towards greater energy efficiency, the less time wireless handsets spend recharging could result in significant energy savings for the nation as a whole.

3. *Efficient Use of Existing Infrastructure*

The Commission mentions the possibility of "DAS towers" being constructed.[6] However, DAS networks typically require minimal construction of new infrastructure because existing utility and municipal infrastructure is used for antenna and fiber attachments.

ExteNet has entered into pole attachment agreements with numerous electric utilities and

[5] *Id.* at ¶ 54.
[6] *Id.* at ¶ 53 n. 63.

incumbent local exchange carriers ("ILECs") across the United States in order construct DAS networks. When there is not available utility infrastructure, ExteNet has worked with the appropriate municipality to attach to street lights and traffic signals.

DAS networks are able to be constructed once the appropriate pole attachment and municipal agreements and permits are in place. So long as a DAS network does not cross numerous municipal boundaries or utility service areas, large geographic areas may be covered with DAS infrastructure based on relatively few underlying agreements. For example, ExteNet deployed a city-wide DAS network in Providence, Rhode Island supported by three agreements and the appropriate permits.

III. OBSTACLES AND DETERRENTS TO DAS NETWORKS

The Commission seeks comment on "the most significant obstacles and deterrents to wireless innovation and investment."[7] Even though a large DAS network may be deployed with relatively few underlying agreements, ExteNet regularly encounters obstacles and deterrents that introduce unnecessary costs and delays into the construction of DAS infrastructure. In some cases, these obstacles are insurmountable.

A. Utility Infrastructure Owner Obstacles

As mentioned above, ExteNet has been able to enter into pole attachment agreements with many utility infrastructure owners (*i.e.*, electric utilities and ILECs) throughout the United States. However, there is still a significant number of electric utilities that refuse to acknowledge that wireless attachments are "telecommunications attachments" with the same attachment rights and cost recovery rates as traditional telecommunications equipment.[8]

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[7] *Id.* at ¶ 11.

[8] *Amendment of the Commission's Rules and Policies Governing Pole Attachments,* CS Docket No. 97-151, Report and Order, 13 FCC Rcd 6777, 6798-99 ¶¶ 39-41 (1998) *("1998 Implementation Order"), aff'd NCTA v. Gulf Power,* 534 U.S. 327, 340-42 (2002).

ExteNet has engaged in dialogue with these electric utilities in order to come to a reasonable compromise regarding wireless attachment rights and rates. In some cases, both parties were able to arrive at an acceptable solution. However, there are certain sections of the country where DAS deployment is virtually impossible because of an electric utility's outright refusal to allow wireless attachments or insistence on charging cost-prohibitive attachment rates.[9]

When utility infrastructure owners refuse access to their poles for wireless attachments or demand cost-prohibitive rates, DAS companies are forced to go to the local government and seek permission to set new poles.[10] Setting new poles in the public rights-of-way not only defeats the policy of reducing clutter by sharing existing utility infrastructure, but it also introduces local government delay and community opposition where none should have been necessary.

Even when a utility infrastructure owner agrees to allow DAS infrastructure on its utility poles, ExteNet often encounters months of unnecessary delay due to an inefficient make-ready process. When this occurs, ExteNet tries to work with the utility infrastructure owner to bring on additional resources at ExteNet's full expense; however, the level of cooperation varies widely and introduces unknowns into a DAS network's deployment schedule.

As will be discussed in greater detail below, the Commission may take steps to reduce or eliminate these obstacles, which will greatly improve the investment in DAS infrastructure nationwide.

B. Municipal Deterrents

Unlike the typical wireless service provider, ExteNet obtains competitive local exchange

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[9] *See generally* In the Matter of Implementation of Section 224 of the Act; Amendment to the Commission's Rules and Policies Governing Pole Attachments, WC Docket No. 07-245, *Comments of ExteNet Systems, Inc.* (filed March 7, 2008) ("*Comments of ExteNet*").

[10] *See* Jack Shea, *Busy Signal for DAS Plan*, THE MARTHA'S VINEYARD TIMES, Apr. 9, 2009, *available at* http://www.mvtimes.com/marthas-vineyard/news/2009/04/09/das-plan.php (discussing the challenges faced by a DAS company to set twenty-five new poles when wireless attachment access was denied by the electric utility and ILEC on Martha's Vineyard).

carrier ("CLEC") authority from the state to operate as a telecommunications provider in the public rights-of-way before constructing DAS infrastructure. In addition to state authority, some municipalities have their own ordinances and fees governing telecommunications providers. ExteNet works diligently with municipalities to comply with agreement and/or permitting requirements; however, when these requirements are discriminatory or unreasonably costly they introduce extensive delays and expense into the deployment of DAS networks.

It has been a challenge to come to timely and reasonable terms with some municipalities. In these situations, ExteNet struggles to explain that it is a telecommunications provider and should be treated the same as any other CLEC even if DAS infrastructure includes wireless attachments.

ExteNet understand that municipalities are under great budgetary pressures, yet municipalities should not be allowed to extract excessive and unreasonable fees from telecommunications providers in violation of the Federal Telecommunications Act in order to meet their own bottom lines.[11] The most egregious municipalities have refused to issue the proper agreements and permits until the DAS provider agrees to the unreasonable fees, which have little to no relationship with the actual costs incurred by the municipality to manage the public rights-of-way.

Given the variability and non-predictable nature of municipal management of the public rights-of-way, anything that can be done to increase uniformity across state and local government boundaries will increase investment in DAS infrastructure.

IV. THE FCC CAN ACT NOW TO PROMOTE DAS BY REMOVING IMPEDIMENTS

The Commission recognizes that 4G "wireless networks may represent the most

[11] 47 U.S.C. §253(c) (stating that State and local government management of the public rights-of-way includes "fair and reasonable compensation" and must be "on a competitively neutral and non discriminatory basis").

significant advance in wireless communications in a decade" and asks "What policies should the Commission adopt to facilitate deployment of 4G technologies?"[12] With regards to DAS infrastructure, "there are steps [the Commission] could take to promote their utility."[13]

As discussed above, DAS offers a number of advantageous characteristics in the deployment of 4G technologies. DAS can be deployed in areas where traditional siting is simply not possible due to functions of terrain and population density. DAS effectively makes use of existing infrastructure, and the network can be used to provide service for multiple carriers, thereby reducing visual impact in a community.

One advantage of DAS—its easy and quick installation on existing infrastructure—is unfortunately frequently offset due to problems in developing and implementing pole attachment agreements. As ExteNet has repeatedly stated in another docket before the Commission, Commission action is needed to remedy the obstacles associated with utility infrastructure owners. [14]

The Commission should facilitate the deployment of 4G technologies by taking the following actions:

- Adopt the Broadband & Wireless Pole Attachment Coalition's proposal to institute a time period to complete make-ready construction and issue pole attachment permits;[15]
- Establish a rebuttable presumption that wireless attachments that comply with the National Electric Safety Code as well as Commission and Occupational Safety & Health Administration regulations are safe;
- Confirm that wireless attachments have access to utility poles above the power supply; and

[12] *NOI* at ¶ 50.
[13] *NOI* at ¶ 53.
[14] *Comments of ExteNet*, *supra* note 9; In the Matter of Implementation of Section 224 of the Act; Amendment to the Commission's Rules and Policies Governing Pole Attachments, WC Docket No. 07-245, *Reply Comments of ExteNet Systems, Inc.* (filed April 22, 2008).
[15] Comments of Broadband & Wireless Pole Attachment Coalition, WC Dkt No. 07-245 (Feb. 23, 2009) at 7 (Proposing a time limit of 105 days for a utility to issue a pole attachment permit where no pole replacement is necessary and a limit of 135 days where a pole replacement is necessary).

- Confirm that wireless attachments are entitled to regulated rates pursuant to applicable Commission cost-based formulas.

The Commission proceeding on pole attachments has an extensive record that conclusively demonstrates that unnecessary delays in the pole attachment process delays broadband deployment.

Additionally, the Commission should take action to promote greater uniformity between state and local governments in the management of public rights-of-way and encourage them to support increased DAS infrastructure, rather than act as a "barrier to entry" in violation of the Federal Telecommunications Act.[16] ExteNet is committed to working with the Commission to solve this problem.

Finally, the Commission requested input on how "rules and policies may have lagged behind important developments in the wireless industry and might be amended to better accommodate such developments without impairing the Commission's purpose."[17] While ExteNet understands the importance of completing the Commission's National Environmental Protection Act ("NEPA") Checklist for wireless antennas, the checklist could be refined for DAS infrastructure.[18]

The Commission would promote DAS infrastructure, and therefore wireless broadband deployments, by clarifying the 2001 Nationwide Programmatic Agreement for the Collocation of Wireless Antennas ("2001 Collocation Agreement") to exclude utility poles from historic review.[19] The 2001 Collocation Agreement has a provision that is designed to protect against

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[16] 47 U.S.C. 253(a).
[17] *NOI* at ¶ 11.
[18] 47 CFR Subpart 1, Chapter 1 Sections 1.1301-1.1319.
[19] Nationwide Programmatic Agreement for the Collocation of Wireless Antennas, Section I (Mar. 16, 2001) ("2001 Collocation Agreement"), *appended to Public Notice*, Wireless Telecommunications Bureau Announces Execution of Programmatic Agreement with Respect to Collocating Wireless Antennas on Existing Structures, 16 FCC Rcd 5574 (WTB 2001).

collocations where "the building or non-tower structure itself could be a historic property."[20] Specifically, the rule states that Section 106 review is necessary for collocations where "the building or structure is over 45 years old."[21]

Though ExteNet appreciates the intent behind this rule, the practical application is that ExteNet encounters situations where Section 106 review is necessary because a *utility pole* is over 45 years old. While utility poles may be old, they are not often considered "historic," making this level of review an unnecessary impediment to the collocation process. Additionally, utility infrastructure owners have sparse and often unreliable records of utility pole age, adding further delay and expense to the process. ExteNet therefore requests that the Commission assess how it can best clarify that utility poles are not subject to the review procedures of the 2001 Collocation Agreement.

By taking these much needed actions, the Commission could effectively enable DAS as a much more feasible network deployment tool where wireless service provides need increased network capacity, coverage, and broadband speeds.

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[20] *Id.* at 7.
[21] *Id.*

Conclusion

DAS provides are ready to assist wireless service providers in their investment and innovation in wireless broadband and 4G deployment. We ask the Commission to take the steps described above to remove unnecessary obstacles and deterrents to DAS infrastructure and thereby enable increased and improved wireless services for all Americans.

Respectfully submitted,

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