



Local Government Regulation of Wireless Telecommunications Facilities





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Comments or inquiries on the subject matter of this publication should be addressed to:

Governor's Center for Local Government Services
Department of Community and Economic Development
Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, Pennsylvania 17120-0225

(717) 787-8158
1-888-223-6837
E-mail: ra-dcedclgs@pa.gov
newPA.com

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Prepared by Natausha M. Horton, Attorney, Cohen Law Group

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I. Introduction

Designed to foster a competitive market among mobile service providers, Congress' enactment of the Telecommunications Act of 1996 (Act) dramatically altered the nation's telecommunications landscape. Generally, the Act preserved local zoning authority over wireless telecommunications facilities, created a new potential revenue stream for local budgets, and permitted the delivery of wireless services in innovative and efficient ways. At the time that the Act was passed, the wireless facilities provisions intended to address local regulation of large cellular towers and other types of traditional telecommunications structures.

Today, telecommunications law and policy is far more complicated as compared to when the Act was originally passed. Over the past twenty years, there have been substantial policy changes at the state and federal levels. The Federal Communications Commission (FCC) has issued two influential orders, the United Supreme Court has spoken on the issue of wireless facilities law, and the Pennsylvania State Legislature has enacted a statute that addresses collocated facilities, i.e., the placement of new facilities on existing wireless support structures.

Additionally, the increased usage of smartphones and tablets has created an insatiable demand for broadband and mobile data. This demand has resulted in many technological advancements, the most significant of which are Distributed Antenna Systems (DAS) and small cell networks. Newer cellular and broadband technologies generally have a smaller signal radius than their more traditional predecessors, necessitating a greater number of facilities to boost cellular capacity and coverage to avoid gaps in service. In order to address capacity issues most efficiently, the newest technologies are usually sited in public rights-of-way via a Certificate of Public Convenience and Necessity obtained from the Pennsylvania Public Utilities Commission (PUC).

To comply with the federal and state law, as well as to address community concerns, local governments should review their zoning and land use ordinances and revise them to address these new wireless telecommunications facilities. Under federal law, municipalities can use their zoning codes to exercise control over the placements of wireless telecommunications facilities in their jurisdictional boundaries. The purpose of this publication is to provide guidance in drafting an ordinance to achieve a legally sustainable balance between community preservation and industry needs.

II. The Proliferation of New Wireless Facilities

In most parts of the United States, coverage issues have by and large been addressed by the construction and placement of traditional cellular towers by the major wireless telecommunications companies. At this point in time, there are fewer new traditional towers being installed because there are fewer coverage issues; however, capacity problems still exist in most municipalities across the commonwealth. In order to solve these issues, DAS and small cell networks are commonly employed.

From 2007 through 2013, the number of wireless U.S. subscriber connections increased from 233 million to 331.6 million, a 42% increase. Correspondingly, global mobile data traffic reached 1.5 exabytes per month at the end of 2013 and is expected by Cisco to increase to 10.8 exabytes per month by 2016. (An exabyte is 1 billion gigabytes.) As a result of this data demand, over 10,000 DAS networks were installed nationwide by the end of 2011; industry experts project that number to reach as high as 150,000 by end of 2017.

DAS and small cell networks are quickly becoming the vital to the existence and operation of wireless telecommunications infrastructure. Local governments can expect a large increase in applications for the placement of wireless facilities over the next few years.

III. The Two Most Common Types of Wireless Facilities

Cellular telephone service has been offered commercially for nearly thirty years and has evolved from simple telephone service into PCS (Personal Communications Services). The difference is that the latter utilizes digital technology to provide data transmission, computer networking, wireless Internet access and related services. Prior to the development and introduction of cellular phone service, mobile telephone service offerings were limited. The older, non-cellular systems used a single high-powered radio transmitter to cover an entire community. With few allocated frequencies and channels, the old systems could provide service to only a limited number of subscribers.

Today's wireless systems overcome this limitation by subdividing their service area into small cells, each with a low-powered radio transmitter.

A typical Pennsylvania cell can range from eight miles to less than one-quarter of a mile in diameter, depending on the topography of the area and how many users in that area are utilizing cellular and data connections. The following describes the sequence of events that occur when a call is placed:

1. Each cell has a transmitter/receiver. A call from a wireless phone is sent to the transmitter/receiver via radio waves.
2. From there it is sent to a Mobile Switching Center (MSC), which serves multiple cell sites. As a wireless phone signal moves from cell to cell, a switch at the MSC hands off the signal from one cell transmitter to the next to keep the signal strong.
3. The MSC sends the call to a local or long-distance telephone network.
4. The network connects the call over phone lines to the number the user is calling, whether it is a person, a computer, a data network, voice mail, fax or messaging system.

There are two types of facilities to allow the call or data download to occur: traditional wireless facilities and DAS facilities. In both cases, the wireless antennae that house the transmitters/receivers have been installed on communications towers, electric transmission towers, water tanks, building rooftops and streetlights. In some areas, facilities have been installed in church steeples, clock towers and silos.

Traditional wireless communications towers take many forms and vary significantly in height. A tower may be free standing or "guyed," anchored with cables. A guyed tower needs significantly more land than a freestanding tower. Free standing or self-supporting towers include monopoles (steel poles) and three or four-sided steel-lattice towers. Tower and tower foundation specifications depend on a variety of factors including design load, wind speed, ice load, soil conditions, building code requirements and antenna loading.

DAS networks are often installed in the public rights-of-way and, therefore, are much shorter in height than traditional towers. Unlike traditional towers, they are generally installed by third party contractors that hold public utility status with the Pennsylvania PUC, rather than one of the major wireless carriers (e.g., Verizon or Sprint). They are usually comprised of between several cylindrical antennae (commonly referred to as nodes) located on poles between 25 feet and 45 feet tall, all of which are connected by fiber optic cables running either aurally or below ground. DAS networks involve different types of installations; however at the very least, all include poles, nodes, control boxes on poles, cabinets on the ground, and fiber optic cable to a central hub site.

Whether a DAS antenna is installed on a communications tower, a utility pole, or a building, an antenna's height depends on several factors, including the range and characteristics of the geographic area it is expected to serve. The number of antennae in a community also depends on several factors, most commonly broadband demand and local topography. As demand for broadband service grows, the number of wireless installations increases.

IV. Local Zoning Authority over Wireless Telecommunications Facilities

Local governments exercise zoning authority to protect the health, safety, and welfare of their residents, as well as to ensure orderly land use development. The Telecommunications Act of 1996 generally preserves local zoning authority over the placement of wireless telecommunications facilities, both traditional and DAS. Simultaneously, the Act, in conjunction with the Pennsylvania Wireless Broadband Collocation Act and applicable FCC orders, creates some caveats to that authority.

V. Caveats to the Preservation of Local Zoning Authority over Wireless Telecommunications Facilities

1. TELECOMMUNICATIONS ACT OF 1996

In order to maintain their zoning authority over wireless telecommunications facilities, local governments must satisfy five conditions or requirements. Failure to comply with any of these five requirements would result in the Act preempting local government zoning regulation.

A. Local zoning requirements may not unreasonably discriminate among wireless telecommunications providers that compete against one another.

As a general rule, local governments cannot enact a zoning schema that gives one provider of wireless service a competitive advantage over another provider. That is, if a local government has no rational basis for making a distinction among providers whose facilities have substantially identical characteristics, differential treatment of those providers is prohibited. For example, a zoning ordinance permitting one provider of wireless services to construct a tower in a commercial district, but prohibiting the construction of a similarly sized tower by another provider in that same commercial district with no distinguishable differences in impact is subject to a challenge based on unreasonable discrimination. Similarly, attempts to regulate antenna size may unintentionally discriminate against some providers.

B. Local zoning requirements may not prohibit or have the effect of prohibiting the provision of wireless telecommunications service.

This requirement is designed to prevent local governments from imposing outright bans on wireless telecommunications services or from limiting the number and placement of facilities in a manner that has the effect of prohibiting a provider's ability to offer service. For example, an ordinance could not include such severe restrictions on the placement or number of towers in a community that the antennae cannot properly operate and deliver service. In such a case, the fact that an ordinance permits the siting of cellular towers is insufficient to meet the requirements of the Act if a carrier remains unable to provide satisfactory service.

C. A local government must act within a reasonable period of time on requests for permission to place or construct wireless telecommunications facilities.

In 2009, the FCC issued an administrative ruling (commonly referred to as the "Shot Clock" Ruling) requiring that local governments act upon applications for proposed collocations within 90 days of receipt and act upon all other applications (i.e., applications to construct a new tower) within 150 days of receipt. If the local government does not act within the designated time period, the application is deemed approved. The ruling also prohibits local governments from rejecting an application for a wireless telecommunications facility "solely" because another carrier or carriers serve the area. The legality of the Shot Clock Ruling was challenged in the *City of Arlington v. FCC*, 133 S. Ct. 1863 (2013), and was subsequently upheld by the United States Supreme Court.

Several years after the issuance of the Shot Clock Ruling, in November 2012, the Pennsylvania State Legislature passed the Wireless Broadband Collocation Act, requiring that local governments approve applications for collocated facilities within 90 days of receipt, unless the proposed collocation triggers one of several exceptions. If the local government does not act within the specified time period, the application is deemed approved and any subsequent appeal must be initiated in the local court of competent jurisdiction. The 90-day approval period created by the Pennsylvania Wireless Broadband Collocation Act was further limited to 60 days by the report and order adopted by the FCC in October 2014.

D. Any local government decision denying a request for permission to install or construct wireless telecommunications facilities must be in writing and must be based on evidence in a written record before the local government body.

The MPC already requires decisions by local governing bodies to be in writing and to be based upon substantial evidence. As such, this provision does not significantly change local Pennsylvania procedure.

E. Health Considerations: If a wireless telecommunications facility meets technical emissions standards set by the FCC, it is presumed safe. A local government may not deny a request to construct a facility on grounds that its radio frequency emissions would be harmful to the environment or the health of residents if those emissions meet FCC standards.

The Act gives the FCC, not local governments, the sole authority to determine what standards wireless facilities must meet to ensure that their radio frequency emissions do not harm humans or the environment. While local governments can require facilities to comply with the FCC emissions standards, they may not adopt their own standards or their own monitoring or reporting requirements. If the facilities meet FCC emissions standards, concern about the effect of emissions from cellular towers on the health of nearby residents is not a permissible reason for making zoning decisions about the placement of wireless telecommunications facilities.

Municipalities may require providers to comply with other federal regulations prior to issuing a tower construction or modification permit. For example, towers taller than 200 feet and located within a certain distance of airport runways must be registered with the FCC and appropriately lighted. The FCC works with the FAA to ensure that such towers are appropriately constructed, marked, painted, and lighted so that they do not create a hazard to air navigation and traffic.

2. PENNSYLVANIA WIRELESS BROADBAND COLLOCATION ACT

In November 2012, the Pennsylvania Wireless Broadband Collocation Act (WBCA) was enacted to streamline the application process for the collocation, modification, and replacement of certain types of existing wireless telecommunications facilities. In pertinent part, the Collocation Act requires a local government to approve the collocation of facilities unless the proposed collocation: (a) substantially increases the size of the wireless support structure; (b) increases the dimensions of the equipment compound approved by the municipality; (c) does not comply with applicable conditions of approval applied to the initial wireless telecommunications facilities, equipment compound and wireless support structure; (d) exceeds the applicable wind loading and structural loading requirements for the wireless support structure; or (e) changes the height of the support structure by more than 10% of its original approved height or by the height of one additional antenna array.

The local government can require no more than an administrative approval for any collocation, modification or facility replacement that falls under the provisions of the WBCA. Furthermore, permit fees for such application cannot exceed \$1,000 per facility application and all applications must be approved within 90 days of receipt. (This time period has since been shortened to 60 days. See below.) For example, if Crown Castle wanted to replace the node on one of its fiberglass poles located in the public rights-of-way, it could do so via a building permit that the local government must approve, so long as the proposed replacement did not trigger one of the above exceptions.

3. FCC'S OCTOBER 2014 ORDER

The most recent change in federal wireless telecommunications law is the FCC's October 2014 Report and Order (Order), which was adopted to increase and expedite national broadband facility deployment. Though the Order is lengthy and involves quite a bit of minutiae, it addresses several gaps in federal law created by the Telecommunications Act of 1996 and related legislation. From a municipal standpoint, the most important sections of the Order are as follows:

A. Clarification of FCC's 2009 Declaratory Ruling

Pursuant to the Order, municipalities now have a 60-day window to approve applications for collocations that do not substantially change the height of the underlying support structure. The “shot clock” for collocation application and new facility applications begins to run when the application is first submitted, not when the application is “deemed complete” by the local government. The only manner by which a local government can toll the shot clock is to provide notice of an incomplete application to the applicant within 30 days of receipt of the application. Finally, the Order specifically states that the 2009 Shot Clock timeframes (90 and 150 days) apply to DAS deployments.

B. Section 106 Exclusion

The Order created an exclusion from National Historic Preservation Act (NHPA) Section 106 review for collocations on utility structures. This section requires the FCC to consider the effects of its proposed undertakings on historic properties and, in certain cases, consult with the State reservation Historic Officer. The process is lengthy and, from an industry standpoint, hampers the speedy construction and placement of collocated wireless facilities. In pertinent part, the Order requires that NHPA support structures and proposed collocations must meet various criteria including, but not limited to, the following: 1) the building already holds an antenna or other wireless facility; 2) the new facility will not create any ground disturbances; 3) the proposed facility will comply with all applicable zoning requirements; and, 4) the proposed facility is not located within an historic district.

C. Clarification of Vague Definitions in Section 6409 of the Middle Class Tax Relief and Job Creation Act of 2012.

Congress enacted a series of federal collocation provisions as part of the Middle Class Tax Relief and Job Creation Act of 2012. In doing so, it neglected to define key terms such as “tower,” “base station,” and “substantially change.” The FCC’s recent Order defines these terms, clarifying gaps left in place by Congress. In pertinent part, “tower” is now defined to include any structure constructed for the purpose of supporting wireless facilities or infrastructure.

D. Amendment to NEPA Categorical Exclusions and NHPA Exemptions

The Order provides for refined National Environmental Policy Act (NEPA) and NHPA review processes to reconcile the FCC’s streamlined approach to collocation with federal environmental and historic preservation policies. The Order establishes new NEPA categorical exclusions for collocations and deployments. It also amends NEPA categorical exclusions for proposed collocations to clarify that such exclusion includes equipment associated with the wireless installations and that it includes covers collocations in a building’s interior.

E. New Notification Standards for Temporary Antenna Structures

The FCC has exempted temporary tower owners from the mandatory 30-day notification requirements intended to provide the public with an opportunity to question and comment upon a proposed tower’s environmental effects. “Temporary towers” must meet the following criteria: 1) they will be in use for less than 60 days; 2) they necessitate the filing of certain form with the FAA; 3) they do not require marking or lighting pursuant to FAA regulations; and 4) they will be less than 200 feet in height.

VI. Dispute Resolution

If a wireless provider claims that a local government has violated any of the conditions listed in the Telecommunications Act of 1996, as described above, the provider may seek relief in state or federal court. An unsuccessful applicant may file a claim with the FCC if it claims that the locality improperly based its adverse siting decision on the harmful effects of radio frequency emissions from the proposed facility.

VII. Key Considerations in Preparing a Wireless Telecommunications Facility Ordinance

Following the deregulation of the telecommunications industry by the Telecommunications Act of 1996, many communities across the commonwealth have witnessed a substantial increase in wireless facilities applications. Many communities have concluded that they lack adequate zoning and land use authority to deal with these rapidly proliferating technologies. This is incorrect, because local governments continue to hold significant power in the siting of wireless facilities so long as they choose to exercise this power. Some local governments were better prepared because the early growth of the cellular telephone industry in their areas, leading to comprehensive land use and zoning procedures for the siting of towers. Most communities, however, have been handling siting requests on a case-by-case basis while trying to educate themselves and their constituents about these new technologies and the most effective means for integrating them into the community.

In order to exercise authority over wireless facilities, local governments should have zoning ordinances that specifically address the placement of wireless communications towers in the community. Now, most telecommunications ordinances only address traditional towers constructed in the late 1990s or early 2000s. After reviewing state and federal law, local officials should review the zoning ordinance. Many communities will find that their current ordinance completely prohibits towers, does not address facilities in the public rights-of-way or emerging technologies, such as distributed antenna systems and small cell networks. Each of these situations presents a potential problem for the locality.

In the absence of appropriate provisions, the industry can argue that it has a right to place towers, DAS or antennae in any location in the community. On the other hand, an ordinance that bans the placement of towers anywhere in the community violates longstanding Pennsylvania zoning law and the 1996 Telecommunications Act if the ban prohibits access to the services provided by the industry.

While ordinances are as different as the community for which they are written, local governments should consider updating their current ordinance to address new issues arising as a result of the emergence of new technologies and recent changes in the law.

VIII. “DOs” and “DON’Ts” in Drafting a Wireless Telecommunications Facility Ordinance

Do

1. Do define relevant terms in the ordinance such as "Communications Antenna," "Communications Equipment Building," "Communications Tower" and "Height of a Communications Tower." In many existing ordinances, terms such as "Essential Services" are vaguely defined and could be argued to include telecommunications towers or antennae.

Such definitions should be amended to exclude wireless facilities so that their placement in the community can be reasonably controlled.

2. Do encourage the installation of antennae upon existing structures, including building rooftops, water tanks or existing towers, rather than the construction of new towers. If community residents raise aesthetic objections to wireless facilities, such objections are almost always directed at towers and rarely at antennae mounted on existing structures. The best way to encourage such "collocation" of antennae on existing structures is to make it easier and quicker for providers to obtain a building permit for collocation than for construction of a tower. Typically, this is accomplished by making collocation of antennae on existing structures a use by right (requiring only a building permit) while making construction of towers (at least in some districts) a special exception or conditional use requiring public hearings and satisfaction of specific requirements.
3. Do encourage the construction of towers in the community's least restrictive zoning districts by considering making construction of towers in such districts (e.g., industrial and manufacturing districts) a use by right. Another incentive would be to allow higher towers in the least restrictive zoning districts.
4. Do define height limitations specifically applicable to towers and to the permitted height of collocated antennae above the highest point on the building or other structure.
5. Do require the provider proposing to collocate antennae to certify that the proposed installation will not exceed the structural capacity of the building or other structure.
6. Do require collocated antennae to meet applicable building codes and other regulations.
7. Do require that wireless facilities comply with all applicable standards established by the FCC governing human exposure to electromagnetic radiation.
8. Do establish reasonable setback requirements for towers and equipment buildings.
9. Do establish reasonable standards for communications towers in more restrictive districts as special exceptions or conditional uses, such as compliance with applicable FAA and Airport Zoning regulations.
10. Do require that access be provided to the tower by means of a public street or adequate easement with an improved cart way.
11. Do require that the base of a tower be landscaped to screen the tower foundation and base and the communications equipment building from abutting properties.
12. Do require that the provider certify that a tower will be designed and constructed in accordance with current national standards for steel towers. Such standards include the Structural Standards for Steel Antenna Towers and Antenna Support Structures published by the Electrical Industry Association/Telecommunications Industry Association.

13. Do require that a security fence be placed around a traditional tower and equipment building.
14. Do require that a tower remaining unused for 12 months be dismantled and removed by the provider.
15. Do encourage the use of appropriate public property for communications facilities. Many such properties are less intrusive locations than privately owned property for wireless facilities, and the revenue benefits to the municipality can be significant.
16. Do draft provisions and standards that apply to facilities specifically in the public right-of-way.

Don't

1. Don't unreasonably limit wireless facilities to a small portion of the community.
2. Don't treat collocation and tower construction applications the same. Encourage collocation by simplifying the approval process.
3. Don't require unreasonable "fall zones" or setbacks from adjoining property lines or unreasonably large minimum parcel size. A properly constructed tower designed and built to current national standards will be at least as reliable as surrounding structures.
4. Don't establish local safety or environmental standards for human exposure to radio frequency emissions. The 1996 Telecommunications Act prohibits it.
5. Don't require providers to construct towers to accommodate several providers. This will probably result in towers unnecessarily tall and thick to accommodate such users.
6. Don't apply the same standards to traditional towers and DAS facilities in the public rights-of-way.

IX. Conclusion

With the growth in demand for wireless communications services, local government faces the challenge of integrating these new facilities while reasonably controlling their location and impact upon the community. The careful drafting of a wireless telecommunications facilities ordinance is a critical element in accomplishing these goals and assuring compliance with the requirements of federal and state law.

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Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, PA 17120-0225

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