
Scope of Municipal Authority over Small Cell Wireless Facilities

A Status Report

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Contents

Executive Summary	1
Introduction	2
Who Regulates Mobile Broadband Services?	2
Municipal Right of Way Authority	5
Mobile Broadband Installations in Connecticut	6
Conclusions	8

Executive Summary

Due to the complexity of the regulations governing the licensing, siting, design and installation requirements for small wireless facilities, many municipalities have assumed local governments play a limited role in guiding the development of fifth generation (5G) mobile broadband services. In order to shed light on these issues, this report is intended to identify the types of mobile broadband installations that fall within the purview of local governments in Connecticut. The report includes a review of; 1) the laws prescribing municipal responsibilities for small wireless facilities; 2) municipal right of way authorities and their impact upon the deployment of fifth generation mobile broadband services; and 3) current mobile broadband installation locations in Connecticut.

Connecticut has experienced a shift away from telecommunication towers as the sole means of ensuring effective and dependable cell phone service. The result is that the old paradigm – based on telecommunication towers as the sole means of providing wall to wall coverage at a municipal or regional level – has shifted to a more neighborhood centric model. Small cell antennas are being installed in close proximity to high density living and working environments including on billboards, chimneys, silos, church steeples, the sides and roofs of commercial and residential buildings, gas station and hotel signs, signalized intersection guy wires, decorative poles, flag poles and the list goes on.

Connecticut municipalities have authority over those installations that fall outside the jurisdiction of the Connecticut Siting Council (CSC) and PURA. The range of scenarios where municipal jurisdiction trumps the authority of the state regulatory agency is quite large and continues to expand as mobile broadband companies search for locations that can best meet the public's demand for increasing volumes of data (think; streaming videos on cell phones as the new paradigm). As many as 20% or more of all future small cell installations will fall within municipal authority and the remainder are subject to CSC and PURA with a very significant advisory role for local governments.

Municipal right of way authority can and should be used to ensure that future installations of small cell wireless facilities are not interfering with 1) public access requirements under the American Disabilities Act 2) highway safety requirements associated with intersections, road crossings and pole setback requirements and 3) the protection of existing sewer, stormwater, and water services and other buried public utilities and infrastructure. These authorities clearly cover the installation of small cell wireless facilities and ancillary equipment – whether that equipment is installed above or below grade.

The need for gigabits transmission capacity for mobile broadband services has become more salient since the COVID-19 pandemic. Our greater reliance on mobile communication services also underscores the need for a regional strategy that not only facilitates improved data capacity transmission but protects the region's community character. Municipal regulations and policies are needed to address these important economic development and community character issues.

Introduction

Due to the complexity of the regulations governing the licensing, siting, design and installation requirements for small wireless facilities, many municipalities have assumed local governments play a limited role in guiding the development of fifth generation (5G) mobile broadband services. In order to shed light on these issues, this report is intended to identify the types of mobile broadband installations that fall within the purview of local governments in Connecticut. There are three elements to this analysis; 1) a review of statutory and case law authority prescribing municipal responsibilities for small wireless facilities; 2) a review of municipal right of way authorities and their impact upon the deployment of fifth generation mobile broadband services; and 3) a review of current mobile broadband installation locations in Connecticut – based on the Connecticut Siting Council’s statewide database – as a proxy for the relative importance of municipal oversight over small cell wireless facilities.

It is important to recognize that 5G service is expected to result in the installation of over 800,000 small cell wireless facilities across the United States over the next ten years. Since the locations where these small cells will be installed is still unknown, the current locations identified in the Connecticut Siting Council’s database only provides a crude estimate of the range of new locations where these facilities may be found in the future. Nevertheless, the range of locations, building types and other structures that are already being used for small cells gives a clear indication of what the future may hold. Small cell antennas are being installed in close proximity to high density living and working environments including on billboards, chimneys, silos, church steeples, the sides and roofs of commercial and residential buildings, gas station and hotel signs, signalized intersection guy wires, decorative poles, flag poles and the list goes on.

Who Regulates Mobile Broadband Services?

A number of chief elected official in Western Connecticut have recently expressed concern that municipal regulation of small wireless facilities would have little value due to the overarching controls of the Connecticut Siting Council (CSC) and the Connecticut Public Utilities Regulatory Authority (PURA). This concern has stopped many local governments from adopting municipal or even zoning ordinances governing mobile broadband services, believing CSC has the final authority over all telecommunication tower installations including those on electric transmission lines. Similarly, since PURA has final authority over mobile broadband services installed on electric distribution lines, it is commonly believed that municipalities have no role in the regulation of small cell wireless facilities. To address these concerns, the Western Connecticut Council of Governments has worked with CSC and PURA to precisely delineate the full range of scenarios that determine who has primacy in the decision to install small wireless facilities. It should be kept in mind that with the increasing focus on enhancing mobile broadband capacities and coverage, Connecticut has experienced a shift away from telecommunication towers as the sole means of ensuring effective and dependable cell phone service. The result is that the old paradigm – based on telecommunication towers as the sole means of providing wall

to wall coverage at a municipal or regional level – has shifted to a more neighborhood centric model.

Under this new paradigm, public service companies like AT&T, Verizon and others, are now racing to install small wireless facilities at the neighborhood level to address the ever-growing consumer demand for more digital communication at increasing levels of gigabits of information per transaction. These 5G developments are changing the land use impacts of mobile broadband services. These changes, as presented in this paper, increase the need for municipal involvement in the siting of small cell facilities that fall exclusively within the authority of local governments above and beyond the important advisory role they already can play.

Connecticut municipalities have authority over the installation of small cell wireless facilities that fall outside the jurisdiction of CSC and PURA. The range of scenarios where municipal jurisdiction trumps the authority of the state regulatory agency is quite large and continues to expand as mobile broadband companies search for locations that can best meet the public's demand for increasing volumes of data (think; streaming videos on cell phones as the new paradigm). The issue is not merely adequate cell phone coverage within any given municipality in Connecticut but the data capacity of the wireless service providers in any given neighborhood.

Table 1 identifies the scenarios where municipalities have the primary responsibility for regulating small cell installations. As can be seen, municipalities have authority over installations placed; 1) on the sides of buildings, 2) on top of buildings falling within zoning height restrictions (e.g., chimneys, cupolas, spires, steeples), 3) on structures such as billboards, hotel signs, gas station signs, water tanks, silos, smoke stacks, decorative poles, flagpoles, windmills, solar energy systems, traffic signalization systems, and other structures whose principal use is not as a telecommunications tower and 4) inside buildings for purposes of amplifying cellular coverage for conference halls, hotels and other large spaces serving the general public.

The emergence of 5G mobile broadband also reinforces the need for enhancing the advisory role that municipalities play in every Connecticut Siting Council decision concerning the location, design and visual impacts of telecommunication installations. CSC is required by law to consider municipal zoning standards as they apply to the installation of telecommunication towers, as well as to small cell wireless facilities. As long as a municipality's regulations do not prohibit the installation of these facilities and comply with Federal Communication Commission (FCC) requirements for objective design standards, CSC must consider municipal policies and regulations in its decision-making process. Without municipal design standards that comply with FCC standards for objectivity and non-discrimination amongst land use types, CSC has the authority to ignore local regulations. For this reason alone, it behooves Connecticut municipalities to update municipal ordinances and zoning regulations for consistency with the 2018 FCC regulations.

Jurisdiction over the Installation of Small Wireless Facilities and Distributed Antenna Systems (DAS) in Connecticut

Scenarios of How Small Wireless Facilities (SWF) and Distributed Antenna Systems (DAS) are Regulated in the State of Connecticut P=Primary Regulatory Authority(ies) A=Advisory Authority	FCC	CSC	PURA	Municipality	CT DOT	Regulatory References
Licensing of Mobile Broadband Services	P					FCC Licensing
Radio Frequency (RF) Exposure Standards	P					FCC RF Standards & CGS Sect. 22a-162
Radio Frequency (RF) Certification for SWF	P					FCC RF Standards & CGS Sect. 22a-162
Radio Frequency Exposure Validation Assessment (CSC jurisdiction)		P				FCC RF Standards & CGS Sect. 22a-162
Radio Frequency Exposure Validation Assessment (Local jurisdiction)				P		FCC RF Standards & CGS Sect. 22a-162
Siting SWF on Towers		P		A		§16-50j-2a(30)
Siting SWF on Monopoles		P		A		§16-50j-2a(30)
Siting SWF on Towers above Bldgs. where antenna is high relative to its surroundings and owned by Public Service Company (PSC)		P		A		§16-50j-2a(30)
Siting SWF on Electric Transmission Lines		P		A		PURA DOCKET NO. 17-02-49
SWF on Bldgs. or other structures whose primary purpose is a tower		P		A		§16-50j-2a(30)
SWF on Electric Distribution Lines			P	A		PURA DOCKET NO. 17-02-49
SWF on support poles for Electric Distribution Lines			P	A		PURA DOCKET NO. 17-02-49
SWF on the sides of occupied buildings not owned by PSC				P		§16-50j-2a(30)
SWF on buildings where the antenna is not high relative to its surroundings not owned by PSC				P		§16-50j-2a(30)
SWF on structures whose principal purpose is not a tower (e.g., functioning water tanks) and not owned by PSC				P		§16-50j-2a(30)
SWF associated equipment in state road right of way on Utility Pole			P		P	47 CFR 253 (c) & CTDOT Title 13b-17
SWF associated equipment in state road right of way on Monopole		P			P	47 CFR 253 (c) & CTDOT Title 13b-17
SWF associated equipment in local road right of way on Utility Pole			P	P		47 CFR 253 (c) & CGS Sect. 7-148(c) (7)
SWF associated equipment in local road right of way on Monopole		P		P		47 CFR 253 (c) & CGS Sect. 7-148(c) (7)

FCC = Federal Communications Commission; CSC = CT Siting Council; PURA = Public Utilities Regulatory Authority

Source: Prepared by Western Connecticut Council of Governments, April 21, 2020

PURA has authority over telecommunication systems installed on electric distribution lines. This authority is especially significant as public service companies attempt to expand the outdoor level of wireless cell phone coverage in high density areas of Connecticut where increased upload and download times are being experienced with ever greater reliance on streaming services. Yet PURA's authority is not absolute; municipalities retain authority over all activities that happen within municipally owned road right of way. Municipal authority can and should be used to ensure that future installations of small cell wireless facilities are not interfering with 1) public access requirements under the American Disabilities Act 2) highway safety requirements associated with intersections, road crossings and pole setback requirements and 3) the protection of existing sewer, stormwater, and water services and other buried public utilities and infrastructure. For example, when a small cell installation is proposed on a public utility pole and the ancillary equipment associated with that installation interferes with line of sight requirements at traffic intersections, a municipality can require the applicant to comply with its highway safety regulations. Similarly, if the ancillary equipment is proposed in a location that infringes upon pedestrian street crossing space or the effective width of sidewalks, a municipality must consider policies to maintain access and mobility for wheelchair bound persons. These are just a few examples of municipal responsibilities that have a direct bearing on small cell deployments.

Municipal Right of Way Authority

Connecticut General Statutes Section 7-148 c (6) authorizes municipalities to regulate a wide range of activities that impact streets and sidewalks including the following:

- (i) Lay out, construct, reconstruct, alter, maintain, repair, control, operate, and assign numbers to streets, alleys, highways, boulevards, bridges, underpasses, sidewalks, curbs, gutters, public walks and parkways;
- (ii) Keep open and safe for public use and travel and free from encroachment or obstruction the streets, sidewalks and public places in the municipality;
- (iii) Control the excavation of highways and streets;
- (iv) Regulate and prohibit the excavation, altering or opening of sidewalks, public places and grounds for public and private purposes and the location of any work or things thereon, whether temporary or permanent, upon or under the surface thereof;
- (v) Require owners or occupants of land adjacent to any sidewalk or public work to remove snow, ice, sleet, debris or any other obstruction therefrom, provide penalties upon their failure to do so, and cause such snow, ice, sleet, debris or other obstruction to be removed and make the cost of such removal a lien on such property;
- (vi) Grant to abutting property owners a limited property or leasehold interest in abutting streets and sidewalks for the purpose of encouraging and supporting private commercial development;

The authorities granted to municipalities clearly cover the installation of small cell wireless facilities and ancillary equipment – whether that equipment is installed above or below grade. Because fifth generation mobile broadband services are still in a beta test phase across the nation, the full impacts that can be expected from the deployment of small cell wireless facilities is not fully known. However, we do know that 86% of the total miles of roadways in Western Connecticut fall within the authority of local governments. For this reason alone, it is clear that municipal road encroachment regulations, policies and permit procedures will play a critical role in future 5G deployments. For example, arguably a municipality has the authority to require all ancillary equipment associated with 5G small cell wireless facilities to be placed underground if such policies are applied in a non-discriminatory fashion and are based on sound public safety principles. Similarly, a municipality could require height restrictions for ancillary equipment installed on the ground to ensure unobstructed visibility for pedestrians along sidewalks or at street crossings. Under Section 148 c (6) municipal authority in the right of way includes the right to “... to regulate the location of any work or things thereon” which includes those “things” installed on utility poles. As of April 2020, none of the eighteen municipalities in Western Connecticut have modified their road encroachment regulations and policies to address the novel issues created by 5G mobile broadband deployment.

Mobile Broadband Installations in Connecticut

One of the best ways to understand the potential land use impacts of fifth generation mobile broadband services is by a review of current installation locations. Because by its very nature, small cell wireless facilities are being deployed in close proximity to population centers, we can anticipate that the installation of extremely tall telecommunication towers will not be the primary means of improving Connecticut’s cell phone service in the future. We anticipate small cell wireless facilities will be installed on public utility poles and other structures that are capable of providing cell phone coverage at the neighborhood level. Large towers, while remaining an essential component of the telecommunications system, will not be able to achieve the data density requirements associated with 5G. Fifth generation mobile broadband focuses on expanding current levels of service – ranging from 10 to 100 megabits – to much higher data transmission levels in the future reaching 1 to 5 gigabits. To achieve these revolutionary increases in service, mobile broadband providers need to install small cell wireless facilities in closer proximity to the intended users of these services. Higher capacity data transmission that is enabled by 5G mobile broadband also will have shorter radius of coverage – indicating that more of these facilities will be needed to achieve desired service standards. Buildings, trees, and other solid objects can interfere with 5G broadcasting and for this reason, the Federal Communications Commission anticipates a dramatically higher density of these facilities along public rights of way and other locations to achieve gigabits levels of service.

By law, the Connecticut Siting Council is required to maintain a database of all towers and small cell installations in the state. The database is the most comprehensive available in Connecticut but, because it relies on municipalities to submit data on its approved small cell installations, is not a complete portrait of all small cell wireless facility installations. Nevertheless, this database is an extremely valuable resource since it enables municipalities to identify the wide range of locations

where small cell installations are occurring and thereby serves an important role in raising public awareness of the range of land use impacts that can occur if fifth generation broadband services remain unregulated at the municipal level. Our analysis of the database reveals that nearly 20% of all telecommunication towers and small cell wireless facilities installed in Connecticut may fall within the purview of local governments. Table 2 indicates that the Connecticut Siting Council has the most significant role in the location of new towers and small cell wireless facilities accounting for about 65% of all installations in Connecticut. Because CSC’s database has limited detail on any given tower or small cell installation, it is not possible to definitively separate certain installations which fall within the CSC, PURA or municipal jurisdiction. This is an issue in the case of roof mounted small cell wireless facilities because CSC has **not** asserted authority over some building mounted small cells when the “antenna is not high relative to its surroundings.” Site specific determinations concerning roof mounted antennas is not possible within the data provided by the Connecticut Siting Council. Nevertheless, even with municipal jurisdiction limited to about 20% of all past installations, the future of 5G mobile broadband will look far different than what is revealed in CSC’s database. Perhaps, more importantly CSC relies on municipalities to provide a detailed level of analysis and assessment of environmental, design and visual impacts from each proposed small cell installation even if that input is only advisory in nature. Similarly, decisions made by the Public Utilities Regulatory Authority routinely require, as a condition of approval, local zoning and road encroachment permit oversight to ensure consistency with municipal safety and zoning concerns.

Table 2: Location of Telecommunications Facilities in CT by Authority with Jurisdiction over Siting Decisions						
Telecommunication Equipment Location	CT Siting Council	Municipalities	Municipalities/ PURA	PURA	Unknown	Grand Total
Building Mounted	7	116				123
Ground Mounted		1				1
Inside Building		53				53
Other Structure		209			25	234
Roof of Building	505	46				551
Side of Building		3				3
Tower Mounted	985					985
Unknown					7	7
Utility Poles			10	335		345
Grand Total	1,497	428	10	335	32	2,302
Percent of Total	65.0	18.6	0.4	14.6	1.4	100.0

Source: WestCOG analysis of the CSC database, accessed April 2020
 Note: The terms “Building Mounted” and “Roof of Building” are descriptions provided by Mobile Broadband companies and have limited value in defining the precise location of small cell antennas.

Conclusions

Connecticut's 169 municipalities will play an ever-increasing role in the regulation of small cell wireless facilities as mobile broadband providers begin to deploy these installations in areas that are currently experiencing limited data capacity transmission levels. The burgeoning growth of online streaming services such as YouTube, Netflix, Zoom conferencing and similar high definition video services have transformed past uses of the internet from simple text and document messaging services into a pipeline for telecommuting, remote entertainment, remote shopping and many other data intensive activities. The need for gigabits transmission capacity for mobile broadband services has become more salient since the COVID-19 pandemic. Our greater reliance on mobile communication services also underscores the need for a regional strategy that not only facilitates improved data capacity transmission but protects the region's community character.

Connecticut's legal structure has placed the Connecticut Siting Council as the primary arbiter of small cell wireless facility installations but because its authority was never focused on small-scale neighborhood level installations of 5G services, the range of locations where 5G antennas and ancillary equipment will be placed in future years is expected to include many locations that are entirely within the regulatory authority of local governments. Installations on or inside buildings and other structures, whose primary purpose is **not** for telecommunications, generally fall within local authority provided that those buildings and other structures are not owned by a public service company and the antenna is not high relative to its surroundings. These caveats may make siting decisions "clear as mud" but these jurisdictional challenges are expected to become less confusing in time as municipalities exercise their statutory authorities to regulate the siting of small cell wireless facilities.