

ctc technology & energy

engineering & business consulting

April 21, 2021

Bill Zolper
Town Manager
Town of Dewey Beach, Delaware
Via e-mail: townmanager@townofdeweybeach.com

Subject: Proposal for consulting on wireless facility siting and related issues

Dear Bill:

Thank you for the opportunity to provide a proposal to the Town of Dewey Beach. Below please find a scope of work and pricing, along with the contents of the qualifications document we sent you in March.

As noted previously, our engineers have decades of collective experience both with wireless technologies and issues related to utility pole attachments and rights-of-way. We have staff who formerly worked for the FCC and wireless carriers, as well as staff who have developed and implemented wireless review and permitting processes. CTC's engineers have submitted technical guidance to the FCC on proceedings related to rights-of-way issues and telecommunications facilities siting matters.

We manage the wireless facility siting application review processes and review hundreds of applications annually for public sector clients and support those clients in public meetings. We have developed and continuously improve processes that enable us to comply with shot clock requirements and scale up capacity to handle increases in application loads. These include our electronic portal; comprehensive application forms customized to each community for new and collocated sites and modifications; and a transparent process that enables (depending on the client's preferences) a view of each application's status to the City, the applicants, and the public.

Please do not hesitate to contact me with any questions.

Sincerely,



Andrew Afflerbach, Ph.D., P.E.
CEO/CTO | aafflerbach@ctcnet.us

Columbia Telecommunications Corporation

10613 Concord Street • Kensington, MD 20895 • Tel: 301-933-1488 • Fax: 301-933-3340 • www.ctcnet.us

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1. Proposed Scope of Work

Current trends in the wireless industry mean that tower and rooftop cells may be augmented with over a million small cell antennas in public rights-of-way nationwide. Concurrently with this wave of permit applications, the FCC's preemption Order¹ ("In the Matter of Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment") changed the dynamic between local governments and the wireless companies by giving wireless companies low-cost, streamlined access to public property to mount wireless facilities.

To help the Town efficiently respond to applications for siting wireless facilities in the public rights-of-way—and to effectively respond to changes in the industry and the FCC's regulatory framework—we propose to perform the range of strategic and tactical tasks described below. We anticipate completing these tasks within four to six weeks of notice to proceed.

Task 1: Review and Revise Small Cell Ordinance

Subtask A: Develop wireless application "submittal requirements" checklist

Based on the Town's existing application process and application, we propose to develop a completion checklist that can be attached to the application as a guide for both applicants and the Town's reviewers. The checklist, with simple "yes" or "no" boxes, will streamline the review process by highlighting missing items.

To gather related information and requirements for this task, a CTC analyst will conduct a meeting with designated representatives of the Town.

Subtask B: Provide technical and strategic guidance on revisions and future amendments to the Town's small cell ordinance ✓

We will begin by reviewing the Town's ordinance and related issues with the appropriate Town representatives.

To the extent necessary, we will develop more detailed **technical standards** for wireless attachments to utility poles and utility streetlights as well as for constructing new poles to support wireless sitings. (We have provided similar support to Montgomery County, Maryland, over the past few years as that government developed zoning text amendments to address small

¹ In the Matter of Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment, Declaratory Ruling and Third Report and Order, WT Docket No. 17-79, WC Docket No. 17-84, 2018 WL 4678555, (rel. September 27, 2018) ("Order") (available online: <https://docs.fcc.gov/public/attachments/FCC-18-133A1.pdf>).

cell deployment issues,² and to the governments of Prince George's County³ and Anne Arundel County⁴ in Maryland). These standards will include but not be limited to sizes, clearances, mounting requirements, noise levels, powering, and emergency practices, taking into consideration the proximity to the beaches and the requirements of the Department of Natural Resources and Environmental Control (DNREC). These standards will also consider requirements for submitting Non-Ionizing Electromagnetic Radiation (NIER) reports.

We will also review the ordinance and assist in developing or expanding **aesthetic standards** consistent with practices in the Town, as described to us by the Town and documented in any relevant Town guidelines or requirements. We will collaborate with the Town and its counsel (internal or external) to confirm counsel's interpretation of the requirements in this regard.

These aesthetic standards may include requirements or guidance related to:

- Size of antennas, equipment boxes, and cabling
- Painting of attachments to match mounting structures
- Use of shrouds, stealth techniques, or other camouflage
- Flush-mounting of antennas
- Placement of equipment
- Consistency with the character of historic neighborhoods
- Minimum spacing between attachments

After reviewing the suggestions with the City, we will provide an edited version of the ordinance.

Task 2: Review Permit Applications

We understand the City seeks independent third-party review of applications it receives for wireless facility siting. We propose to perform the following tasks for each application you assign us:

² "2018 Proposed Zoning Text Amendment (ZTA)," Montgomery County, Maryland, Government, <https://montgomerycountymd.gov/cable/towers/zta-links.html>

³ "Prince George's County Design Manual for Small Wireless Facilities," <https://www.princegeorgescountymd.gov/DocumentCenter/View/29822/Prince-Georges-County-Design-Manual-for-Small-Wireless-Facilities>. See also: "Small Wireless Facilities," Prince George's County, Maryland, Government, <https://www.princegeorgescountymd.gov/3230/Small-Wireless-Facilities>

⁴ "Anne Arundel County Guide to Technical and Aesthetic Standards for Small Wireless Facility Siting," <https://www.aacounty.org/departments/public-works/resources/Small-Wireless-Facility-TAS.pdf>. See also: "Ordinance," Anne Arundel County, Maryland, <https://www.aacounty.org/departments/county-council/legislation/bills-and-resolutions/an-ordinance-concerning-purchasing--zoning---small-cell-systems---leases>

- Enter application information into CTC's database. Review application data before forwarding to CTC's reviewer and Town Engineering (as required).
- Review the description of the proposed installation provided. Review the scope for consistency and continuity with other supporting documents (ordinance, design standards, RF regulations, etc.).
- Verify that the quantities of removed, added, or relocated antennas match on the application and all the supporting documents.
- Review zoning and engineering comments.
- Review that proposed installations are mindful of possible colocation opportunities.
- Review that applications offer justification for co-location due diligence.
- Check the description of the proposed installation provided. Review the scope for consistency and continuity with other supporting documents. Verify that the quantities of removed or added or relocated antennas match on the application and on the supporting documents.
- Check that applicant correctly and completely fulfilled requirements of application (e.g., plans being signed and sealed by the Engineer; addresses or coordinates in the application and supporting documents matching).
- Compile notes from completed reviews and compose a Request for Information (RFI) if one is needed.
- Send RFI to applicant (if required).
- If no RFI is needed, pass along to recommendation/report stage.
- Once an RFI response is received from the applicant, compile and review amended documents. Check that the RFI response satisfies the RFI request, and no further RFI items have arisen from new information or revisions submitted.
- Compile the follow-up RFI if items are not satisfied.
- Send the follow-up RFI to the applicant if items are not satisfied.
- Compile and highlight engineering and zoning review comments (if further information is needed from the applicant).
- Once the application is complete and accurate, provide a recommendation to the Town.

Task 3: Additional Services

CTC can provide additional broadband services to the Town on a time-and-materials basis as needed:

- We can provide general broadband advisory services to the Town as requested.
- CTC's wireless siting team can review telecommunications and wireless facility structures for compliance with engineering standards agreed-upon with the Town and based on our experience. These tasks may include performing site visits of facility structures as required and conducting physical inspections of the structure and surrounding areas (or substituting Google Earth or similar desk survey approach).
- We can provide expert guidance to the Town on land-use issues related to telecommunications and wireless facility siting. These tasks may include, but are not limited to:
 - Serving as liaison between telecommunications service providers and land use agencies, to assist in identification of sites for co-location
 - Preparing and circulating documentation, presenting cases, and responding to Town and public questions
 - Providing guidance to the Town on leasing fees for wireless facilities on public lands
 - Performing site visits of proposed antenna and new tower siting locations and conducting physical inspections of surrounding areas to determine level of community impact (or substituting Google Earth or similar desk survey approach)
 - Providing a centralized source for private providers, Town agencies, and the public to obtain information regarding the Town's tower siting process and the location and description of potential sites
- CTC is located within driving distance of Dewey Beach, enabling staff to attend Town and public meetings as requested with advanced notice.

2. Fees

We propose to perform Task 1 for a flat fee of \$8,000.

We propose to perform Task 2 and Task 3 at the Town's direction on a time-and-materials basis. We will bill our work at the hourly rates listed below. Travel and other direct expenses will be billed at cost.

Labor Category	Rate
Chief Technology Officer	\$225
VP of Analytics and Wireless Siting	\$200
Principal Engineer/Analyst	\$200
Senior Engineer/Analyst	\$175
Staff Engineer/Analyst	\$155
Aide	\$80

For the Town's planning purposes, we note that our average billings for Task 2 application reviews (i.e., in other jurisdictions where we process wireless facility siting applications) are as follows:

Type of Application	Average Cost
New wireless facility	\$3,500
Colocation	\$1,500
Replacement	\$1,600
Minor modification of existing site	\$975

3. About CTC

CTC is an established, financially stable, woman-owned consulting firm with a national client base, including the cities of Cambridge, Boston, Palo Alto, Cupertino, San Francisco, and New York City. We offer a unique combination of qualifications and capabilities in wireless and fiber engineering, Smart City planning, broadband business modeling, and network strategic planning.

Founded in 1983, we have a staff of 50 analysts, engineers, GIS specialists, technical writers, technicians, and support staff. Our headquarters office is in Kensington, Maryland, directly outside Washington, D.C. We have satellite offices in California, Illinois, Massachusetts, Minnesota, Montana, North Carolina, and Virginia.

We have strong but independent relationships with wireless technology vendors and are conversant with the wireless carrier small cell, DAS, and macro equipment as well as emerging millimeter-wave and other 5G technologies that will become increasingly dominant in the rights-of-way. To ensure that we can provide independent guidance, we are not affiliated with equipment manufacturers, cable operators, wireless providers, or tower companies.

We currently are supporting local and state government clients with wireless and fiber network strategic planning in the states of Alabama, Arizona, California, Delaware, Georgia, Indiana, Kentucky, Maryland, Massachusetts, New Mexico, North Carolina, Pennsylvania, Texas, Tennessee, Virginia, and Washington.

We were pioneers in developing comprehensive technical and aesthetic standards for wireless facility siting—even prior to the FCC’s small cell Order—and continue to offer our clients innovative, strategic guidance on the range of issues related to small cell siting.

Our wireless technology expertise includes the following:

Developing technical and safety standards for wireless attachments

Our engineers develop and help enforce **technical standards to protect the public interest, public safety, public assets, and utility worker safety**, including through:

- Assessing whether proposed attachments increase congestion on a sidewalk or block motorists’ views of traffic
- Ensuring that proposed installations meet ADA requirements and DOT rules that allocate right-of-way space for varying uses
- Verifying adherence with pole spacing requirements and—in the case of new tall towers—standards for soil and drainage

- Confirming clearances between new equipment and roads and buildings, and proper placement of power meters and shutoff devices
- Verifying compliance with FCC rules on RF emissions and related warning signage
- Testing RF signals to ensure non-interference with public safety, city, and utility wireless operations

We have developed technical standards for small cell siting in the rights-of-way on behalf of clients that own traffic, light, and utility poles, including the **City of Napa**, **CPS Energy** (San Antonio, Texas), **Huntsville (Alabama) Utilities**, the **City of Opelika, Alabama**, **Baltimore County, Maryland**, and a half-dozen municipal light plants in Massachusetts.

We have also worked alongside local government staff to develop **new and revised small cell ordinances** in Anne Arundel, Baltimore, Montgomery, and Prince George's counties in Maryland and many California cities.

Developing aesthetic standards and fee justifications for wireless attachments

In light of the FCC's wireless preemption Order limiting local agency authority in wireless siting and asset use, CTC's analysts develop strategies for technical compliance that address policymakers' desire for new deployment while **protecting public assets, interests, and mission-critical public infrastructure**.

For example, in response to the FCC's establishment of restricted fees for small cell applications, CTC's engineers performed a **cost analysis** of the City of Baltimore's small cell and distributed antenna system (DAS) application and review process. By documenting the various elements of the process, we established an accounting of actual costs that the City can use to justify the fees it charges applicants.

We have also developed **technical and aesthetic standards** that our local government clients can apply to wireless facility sitings in light of the FCC's new limitations. In 2019 we developed such standards for several municipal utilities in Massachusetts. Our work builds on our extensive experience in this area; for many years we have advised a dozen California cities (including Palo Alto and Sonoma) on **standards that minimize the visual impact of wireless facilities while improving mobile coverage**.

We have also written extensively on these matters, including the following guidance that we developed for our public sector clients:

- Ten Strategies to Protect State and Local Property After the FCC's Small Cell Preemption Order (<https://bit.ly/2RI7N4I>)

- The Three “Ps” of Managing Small Cell Applications: Process, Process, Process (<https://bit.ly/35GusGD>)
- Documenting the True—and High—Local Administrative Costs of Small Cell Siting (<https://bit.ly/2MkxB7j>)

Designing infrastructure and business plans for neutral-host infrastructure

We also **design neutral-host infrastructure and business plans** for localities and utilities seeking opportunities to support wireless carriers and expand wireless broadband.

For example, our engineers designed a neutral-host DAS to enable **Washington, D.C.**, to use its fiber network to distribute wireless signals, including within buildings where poor coverage led to public safety challenges. We also developed a program for installing commercial, public safety, and Wi-Fi wireless DAS networks.

We currently provide strategic and technical guidance to the City of San Antonio’s Aviation Department on the design of a neutral-host DAS and Wi-Fi implementation in the **San Antonio International Airport**.

Developing wireless engineering plans and strategy

Our engineers and analysts advise public agencies across a range of tasks related to wireless facilities siting and planning. A few illustrative examples:

For the **City of San Francisco**, we evaluated the potential design and cost of 5G fixed and mobile deployment, including adequate fiber backhaul and use of street furniture. We are in the process of developing a citywide Smart Cities plan that incorporates City-deployed wireless infrastructure, City poles, and wireless infrastructure being deployed by the commercial wireless industry.

For the **Texas Department of Transportation (TxDOT)**, we developed a full strategic plan and guidance for wireless siting requirements, developing technical standards, establishing processes that included coordination with municipalities, and recommending appropriate fees—all intended to protect state interests while enabling efficient private use of TxDOT assets.

For **Montgomery County, Maryland**, we developed a comprehensive wireless siting process, which the National Association of Counties recognized as exemplary and the FCC’s Intergovernmental Advisory Committee recognized as providing notable best practices.

Ensuring coordinated, efficient processes for wireless facility siting

We develop processes and standards that align public interests among land-owning agencies and among local governments and public utilities. For example, in **Huntsville, Alabama**, CTC helped the utility and city develop and harmonize complete processes for managing pole attachments

so that existing assets could be maximized, and so that wireless carriers would not install new poles just feet away from existing utility poles.

Evaluating and vetting wireless facility siting applications

Since the advent of the cellular industry, CTC has provided expert advisory services on the technical, strategic, and business aspects of wireless facilities siting. These services are as critical as ever, given that local and state authorities are being inundated with small cell wireless siting applications as the wireless industry densifies existing networks, prepares for 5G, and upgrades public safety networks.

CTC provides expert, independent guidance and staffing for public agencies seeking to protect their assets and the public interest while facilitating deployment of new services. CTC's wireless team has helped local governments, state agencies, public utilities, and nonprofits vet applications for thousands of towers, colocations, small cells, and distributed antenna system deployments.

Our expertise includes:

- Developing best practices in wireless siting to enable efficient deployment while protecting community interests
- Defining technical standards for wireless facilities that protect public assets and public safety
- Addressing technical challenges in siting, including ADA violations, radio frequency (RF) interference, and unsightly deployment
- Developing strategies to comply with state, federal, and local requirements and zoning considerations
- Vetting applications for zoning compliance, RF coverage, interference, and colocation opportunities
- Developing local processes and standards to enable deployment while protecting public interests and property
- Analyzing and justifying the cost of wireless review and permitting processes
- Participating in discussions with elected officials and the public regarding wireless infrastructure and applications by the wireless industry

Our engineers analyze siting applications and RF studies to evaluate the accuracy of applicant-claimed technical service objectives, the extent to which proposed wireless sites are necessary to fill gaps in coverage or capacity, and the significance of such gaps. Analysis typically includes:

- Vetting an applicant's application, including RF propagation studies or drive tests
- Identifying colocation options in the vicinity of a proposed site
- Considering options to minimize the visual or other community impact of a wireless facility, such as painting antennas to match a mounting location, requiring a stealth monopole design, or requiring that equipment meets local noise ordinances
- Visiting and reviewing sites to evaluate community impact
- Reviewing applications and requesting additional information as necessary
- Evaluating relevant reports, studies, public input, and other materials
- Presenting findings to planning departments, counsel, and elected bodies
- Preparing reports, maps, charts, documentation, or presentations to document findings and recommendations

We coordinate the wireless facility siting application and review processes for **Montgomery and Prince George's counties** in Maryland; **Fauquier and Louisa counties** in Virginia; and a dozen cities in California, including **Palo Alto, Napa, and Sonoma**.

Developing business and revenue strategy

We develop strategy to enable public utilities and localities to **maximize assets** to enable wireless service, to deploy new pole and fiber assets as necessary, to lease dark fiber for backhaul, and to realize associated revenues.

Developing Smart City strategies that benefit from cellular expansion and densification

As wireless carriers densify 4G networks with small cells and add infrastructure for 5G, there is opportunity for agencies to **leverage new infrastructure for public purposes**, such as installing public safety cameras, other kinds of sensors, and traffic controls.

In **Baltimore**, our engineers developed **small cell policies and standards that align with Smart City goals**. Our analysts developed a public-private partnership strategy for **Seattle** for deployment of wireless infrastructure and services. We are also working with **Boston** to implement Smart City initiatives in conjunction with provider network buildout.

Advising on public safety wireless

As the FirstNet and other public safety broadband networks are made available, states and localities face challenges related to vetting the adequacy of the service and developing business strategies for public safety broadband, including the degree to which FirstNet can serve public safety needs and potential migration plans. In suburban New York, we developed a **plan for public safety wireless network development and operations**. For **Kansas DOT**, we evaluated a **public-private partnership strategy** for land mobile radio and wireless broadband.