Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of A National Broadband Plan for Our Future	GN Docket No. 09-51

REPLY COMMENTS OF MONTGOMERY COUNTY, MARYLAND

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SUMMARY

Montgomery County, Maryland, supports the development of a national broadband plan that reflects the important role played by the County and other local governments in providing and promoting access to broadband services. Such a plan should: (i) acknowledge the fact that local governments operate extensive broadband networks and make broadband services available to their residents for a variety of purposes; (ii) recognize that interference with local control over land use decisions would be inappropriate and counter productive, because wireless providers are often responsible for delays in the siting of wireless facilities; and (iii) address the need for improved access to utility poles by local government users.

The County Provides and Promotes Access to Broadband Services.

A national broadband plan should acknowledge the role that community anchor institutions will continue to play in delivering broadband to each community, as well as the resources that government, community, and non-profit agencies provide for broadband infrastructure and training to these institutions. The County's current generation FiberNet, for example, provides broadband services to 201 government and community buildings and 88 public schools, at speeds no less than 100 Mbps and as high as 10 Gbps. County agencies also make a broad range of services available to the public that rely on broadband technology – everything from free Internet service in public libraries, to on-line filing of permit applications, to broadband education and job training classes at local community locations. And FiberNet is used to provide broadband connectivity to wireless access points delivering WiFi service to the public at selected locations in the County. Thus, the County is extensively engaged in providing and promoting access to broadband services. And the more services that local governments make available in this fashion, the more individual residents will see the value of subscribing to

services themselves. The County urges the Commission to develop a national plan that reflects this important and ubiquitous local role.

The National Plan Should Reject Calls for Interference in Local Siting Authority.

In their comments, representatives of the wireless industry repeated their persistent calls for federal interference in the local zoning process, notwithstanding Congress's clear decision to leave such matters to local authorities. In fact, the success of local governments in advancing the rapid deployment of wireless services while also addressing the other concerns of local residents since the passage of the Telecommunications Act of 1996 affirms Congress's judgment. In addressing the wireless industry's proposals for strict timeliness and other restrictions on local authority, the Commission should consider that wireless companies are themselves responsible for many of the processing delays of which they complain. For example:

- Contractors retained by providers often knowingly submit incomplete applications, in an effort to meet internal deadlines, leaving it up to the local government to find the omissions and ask that they be remedied.
- Carriers often do not manage their contractors efficiently, leading to delays that are then blamed on the local government. In one case, a carrier changed contractors four times while an application was pending, leading to delay each time as the new contractor was brought up-to-date – often by (and at the expense of) the County on the status of the application.
- Applications are sometimes delayed at the request of property owners who identify problems unrelated to the application itself, such as a failure to notify the owner of a co-location request in advance, or failure to make lease payments.

- Carriers often submit applications for co-location on existing towers that have already exceeded their structural capacity.
- Carriers sometimes submit applications based on erroneous or outdated information, even though they knew or should have known the correct information. For example, applicants have been known to propose placing new antennas at exactly the same place on a tower where an existing antenna was already located.

There is no reason to interfere with local authority when carriers themselves are responsible for so many problems. Nor does it make any sense to adopt special rules for co-locations. Co-location requests can easily raise important issues, as shown by some of the examples above. Local governments continue to support local procedures that balance rapid deployment of wireless broadband and telecommunications with appropriate protection of public safety, preservation of community aesthetic guidelines, and public notice as required by law.

The National Plan Should Consider Comprehensive Reform of Pole Attachments.

A national plan to facilitate additional deployment of broadband services will need to address the limited physical space available to deploy broadband facilities on existing utility poles. The County has a particular interest in reform of the pole attachment rules, because the County requires access to poles for its own facilities. Many existing poles are structurally incapable of supporting additional facilities, and pole owners require lead times of as long as 18 months to complete make-ready work. Thus, pole attachment issues are interfering with access to broadband. The County believes that the extension of smart grid technology provided for in the American Recovery and Reinvestment Act of 2009 may offer an opportunity to alleviate this problem by making more space available on poles.

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Montgomery County, Maryland (the "County"), respectfully submits these Reply Comments in order to emphasize the valuable role local governments play in providing and promoting broadband access and to urge the Commission to preserve and promote local authority in this area. The County also strongly supports the points made in the Reply Comments of the National Association of Telecommunications Officers and Advisors ("NATOA"), *et al.*

I. THE NATIONAL BROADBAND PLAN SHOULD RECOGNIZE THE ROLE LOCAL GOVERNMENTS PLAY IN PROMOTING BROADBAND ACCESS.

The County and other local governments across the country help advance the national policy of promoting broadband access every day. Discussion of this issue often centers on the activities, needs, and interests of the private sector and of commercial service providers, for understandable reasons. But local governments play a critical role by providing services to the public, often without charging a fee to end users. The County and many other local governments own and operate broadband networks and provide a range of broadband services. Indeed, every local jurisdiction of any size is engaged in such activities in one way or another. Local governments also have a strong and growing interest in promoting private sector broadband deployment because of the benefits it offers to their residents. Any national broadband plan

should consider the particular needs of local governments, and also note the local role in rolling out new services. The national plan should also promote public-private partnerships as a means of making the best use of both public funds and private capital: Recognizing and building on the services local governments already provide may help generate new models for such partnerships.

The County strongly believes that if providers could be dissuaded from seeking only to advance a traditional and narrow view of their self-interest, and encouraged to recognize that local government control over rights-of-way benefits all of the stakeholders in a community, they might be able to move beyond the adversarial relationship that often exists between local governments and providers. The Commission can aid in this process by making it clear that it will protect the interests of local governments in preserving control over local property and by encouraging providers to think creatively about how to work with local governments towards common goals.

A. The County Is Supplying Broadband Access in the Community.

Like many local governments, Montgomery County has invested large sums of money and other resources in constructing a broadband network to serve local needs. The County operates a communications network, known as "FiberNet," consisting in part of an institutional network provided under the terms of its cable franchises, but also of second generation broadband facilities constructed by the County with public funds. As a whole, the County's network serves 201 government and community buildings, including libraries, public safety facilities, social service agencies, and 88 public schools. FiberNet is deployed throughout the 496 square miles of the County and makes it possible for County agencies to offer a broad range of services to more than 950,000 County residents.

Furthermore, by providing advanced services over its own network, the County is dramatically increasing the availability of broadband services, because the cost of paying a commercial provider for connectivity to so many sites would be cost prohibitive. For example, FiberNet currently provides 100 Mbps connectivity to the County's public high schools and middle schools, and provides as much as 10 Gbps to central government, public safety and educational sites. It simply would not be economically affordable for the Montgomery County Public Schools to pay a commercial provider for that level of service. As it stands, however, the schools are able to incorporate high levels of broadband use into the curriculum at all levels, at relatively low cost. "Sailor," the State library network, also uses County FiberNet facilities to offer free Internet access to patrons of each of the County's public libraries. Network Maryland is a state communications network that uses the County's FiberNet facilities to make state databases available to every FiberNet site. The schools and the libraries are continually trying to meet the needs of the populations they serve, which change as quickly as technology develops. The County is thus promoting access to broadband and providing broadband service at the same time.

B. The County Is Dedicated to Increasing the Demand for and Availability of Broadband Service in the Community.

The County is keenly aware of the importance of broadband services as a tool for promoting economic development, employment opportunities, and individual empowerment. County agencies work to increase demand and improve access to broadband services in many ways. As a consequence, many County residents who cannot afford to pay for broadband services themselves have access to services. In addition, all County residents benefit from the availability of a range of services that would either simply not be provided by commercial providers, or would require substantial public funds to make available. The following are some

examples of the ways in which the County is currently expanding access to and demand for broadband services for its residents and local businesses.

- The County has made an extensive range of services available to the public online, ranging from the ability to file housing discrimination and code violation complaints, pay tax bills, and view volunteer events.[1]
- County agencies offer job training and job search services that rely on broadband technology, and the County's Senior Centers offer training in using computers and broadband technologies. The County provides economic development information on the County website, such as a directory of local farms and their products,[2] and is considering other training programs to teach local farmers and businesses how to develop basic websites.
- The County's Department of Economic Development demonstrates the County's commitment to fostering the entrepreneurial growth of small business by transporting broadband Internet traffic for the County's innovation centers over FiberNet. The growing ubiquity and maturity of FiberNet fosters the County's ability to leverage this communications infrastructure well beyond the vision of its original sponsors.

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[1] Examples of such services can be found throughout the County's website. A few examples appear at http://www.montgomerycountymd.gov/apps/opi/service/services.asp?type=OnlineService. Other examples include: an apartment rental guide; online bicycle registration; bikeway maps; paying library fines; catalog searches; renewing library book loans; reserving park and recreation facilities; paying parking tickets and property taxes; reporting potholes, street light outages, unshoveled streets and sidewalks; vendor registration; renting space in County facilities; information about polling places; information about procurement solicitations; filing of taxicab complaints; and maps of the County's Ride On bus system.

[2] *See e.g.*, http://www.montgomerycountymd.gov/agstmpl.asp?url=/content/ded/agservices/agfarmdirectory.asp

- The County library system and the Montgomery County Public Schools promote demand for broadband because they provide training in the use and capabilities of broadband services, and because they make such services directly available to the public and to students. These educational functions are enormously important to commercial providers, because once student and library patrons become aware of the capabilities of broadband services, they are not only more likely to continue to use them, but also much more likely to subscribe to those services in the future.
- The Montgomery County Public Schools use "Ed Line," a service that enables parents and students to view current and future homework assignments on-line, as well as e-mail for teachers to permit parents to easily communicate with their children's teachers.
- The County's public safety and emergency preparedness agencies look forward to deploying true mobile broadband capabilities in the near future. The capability, for example, to transmit real-time video from an incident scene anywhere in the County would enormously advance the efficiency of the County's public safety agencies. Even today, however, public safety agencies and the public benefit from the County's investment in broadband technology, because FiberNet provides backhaul capability for the existing public safety wireless network. The State of Maryland's plans for deploying a 700 MHz public safety network also call for use of FiberNet for backhaul transmission.
- Providers of public, educational, and governmental access programming in the County are making their programming available over the Internet – access to this programming meets a public need for information about local government and community affairs, and promoting access to the programming increases demand for

commercial broadband services by making more bandwidth-intensive video content available to the public.

- The County's Office of Cable and Communications Services and Office of Consumer Protection assist County residents in resolving disputes with broadband service providers. By acting as an intermediary in this fashion, the County plays a small role in sustaining broadband subscribership, and a larger role in creating smarter broadband consumers.
- The County privately peers with all of its neighboring local governments, municipalities and the State of Maryland over FiberNet. This level of connectivity reduces the cost of interoperability and protects communications services in the event of a local emergency. Local government communications are protected from both Internet and PSTN link saturation in the event of a disaster or other public safety emergency.
- The County provides ISP services to other County agencies and transport layer services to municipalities and non-governmental agencies over FiberNet. This reduces their costs and improves service levels above those each could afford by their own means. With the assistance of FiberNet, County residents receive better response times and higher service levels because local governments can turn LEC loop charges into larger ISP connections for the same monthly charge.
- The County has developed a broadband capability in FiberNet that gives County agencies the ability to communicate entirely over a private facilities-based network at a fraction of the market cost for equivalent services. Data communications are in place. Voice connectivity is next, and plans are in the early discussion stages to

enable on-net voice communications among all of the County agencies. FiberNet will also be used by County agencies to access disaster recovery sites and resources.

- The County is making wireless broadband Internet access available to the public in the downtown areas of Bethesda and Silver Spring. This WiFi service is provided by a commercial ISP, but the ISP's Internet connectivity is delivered over the County's FiberNet.

Thus, the County, like other local governments, is actively engaged in promoting the national goals of extending the reach of broadband networks, expanding the range of services available over those networks, and ensuring that every resident has access to the broadband services they need. The County urges the Commission to develop a national plan that reflects these facts.

II. THE PLAN SHOULD CONSIDER THE FACTS BEFORE SUPPORTING THE ADOPTION OF FIXED TIMELINES FOR LOCAL TOWER SITING.

Various commenters on behalf of the wireless industry have used the opportunity of this proceeding to continue their efforts to undermine local authority over wireless placement matters, not withstanding Congress's express statement that such matters should be left to the local zoning process.[3] These commenters argue that the Commission should adopt strict timelines for reviewing siting applications, and that local authority to consider co-location requests should be restricted. Leaving aside the substantial questions about the Commission's authority – or more precisely its lack of authority – to regulate in this area, as addressed by NATOA,[4] the County wishes to emphasize the one-sided nature of the industry's position. To read the comments of CTIA and others, one would think that wireless carriers and other

[3] *See, e.g.*, CTIA Comments at 15-19; Clearwire Comments at 8-9; Verizon Comments at 65.
[4] NATOA Comments at 41-46; NATOA Reply Comments at 5-7.

applicants seeking to install antennas and support structures always act in compliance with the law, never submit incomplete applications, always respond to requests for missing information in a timely manner, and have no incentive to cut corners. The truth of the matter is that carriers are responsible for many of the processing delays of which they complain. To subvert local authority in this area would discourage operators from ensuring that their installations take proper account of important issues. In the end, local oversight promotes the public interest because it ensures that a fair and reasonable balance is struck between a range of diverse interests.

A. Montgomery County and Other Jurisdictions Have Established Streamlined Procedures for Efficiently Processing Antenna and Tower Siting Applications.

Montgomery County has established a process for evaluating applications for the siting of wireless facilities, which is managed by the County's "Telecommunications Facility Coordinating Group" ("TFCG"). The TFCG consists of representatives of public land-owning agencies, such as the Department of General Services, the Montgomery County Public Schools, the Maryland-National Capital Parks and Planning Commission, and the Washington Suburban Sanitary Commission; land use agencies, such as the Department of Permitting Services; and other parties involved in telecommunications services for the County, such as the Department of Technology Services, the Office of Cable Communications Administration, and the Office of Management and Budget. The TFCG reviews applications for siting wireless facilities on both public and private property, considers information compiled by staff, and formulates a recommendation that goes forward to the responsible agencies.

Under Montgomery County's zoning ordinance, co-location of antennas and in some cases construction of monopoles can be done by right, without the need for zoning approval. All installations on public property require the consent of the land-owning agency, however, and

some installations on private property may require a variance or special exception. In every case a building permit is required. The TFCG addresses the issues raised by siting requests through a uniform process, in which potential problems are identified and resolved early. The TFCG conducts a preliminary review and then makes a recommendation, which can be to approve the request, approve it subject to specified conditions, or deny the request. Once the TFCG has made its recommendation, the applicant can proceed to obtain a building permit from the Department of Permitting Services. In some cases, separate approval by the Maryland National Capital Planning Commission may be required, and installations that require a special exception or variance will require further review by the Board of Appeals. A positive recommendation from the TFCG, however, streamlines the process because many of the issues often raised before the agencies with final authority over an application will already have been addressed in the recommendation.

The TFCG facilitates coordination between the applicant and affected County agencies, and provides information to the public about facilities in the community. The TFCG's work has emphasized the use of a streamlined application process, identifying opportunities for the co-location of facilities when possible, and minimizing the adverse effects of particular siting requests on County residents. This process has worked very well in the County because it ensures both that wireless service providers and County staff coordinate with each other over the details of proposed installations, and that the decision-making body receives ample information for evaluating a particular request. This communication and interaction promotes balanced decision-making, addressing the needs of carriers and the community.

Other jurisdictions use similar processes, and have successfully aided the industry in deploying facilities safely and expeditiously. Exhibit A, for example, shows the accelerating pace at which neighboring Prince George’s County, Maryland, has reviewed applications for

antenna siting since the year 2000. The exhibit shows both that the county is reviewing and approving large numbers of applications, and that the number is growing. In Montgomery County, the number of applications being reviewed has increased by 359% since the TFCG was established in 1996; the number of applications considered has increased by 161% in the last five years alone.

B. Carriers Themselves Are Responsible for a Great Many Antenna Siting Delays.

Sometimes the County's review process does not work as smoothly as it might, but it is important to understand that applicants themselves are often responsible for false starts and delays. There are many reasons for those delays, including: incentives for wireless siting contractors to submit incomplete applications; failure of contractors and carriers to communicate with each other; issues related to the terms of carrier leases; failure to comply with other legal requirements; failure to consider obvious technical issues; and reliance on outdated or incorrect information. Each of these errors or omissions by a wireless provider raises the cost of review, and increases the complexity of the review process.[5] Each will be addressed in turn.

Industry Contractor Incentive Structure. The County believes that one of the most critical reasons underlying delays in application processing arises from the nature of the relationship between carriers and the contractors they hire to select sites and prepare and submit applications. The County believes that contractors sometimes knowingly submit incomplete applications. One reason for this may be that site acquisition contractors are compensated for their work upon accomplishing specific tasks. In the past, in at least some cases, one of these tasks was the submission of an application by a deadline set by the provider. Another reason may be that

[5] Regulatory action by the FCC that does not take the fact of applicant error into consideration will undoubtedly raise costs for local governments. This could have the unintended effect of causing local governments to increase uniform application fees on all applicants, or induce local governments to impose cost-based fees on applicants.

contractors submit incomplete applications in an effort to speed up the overall processing time, assuming that any missing information can be provided later, if and when it is requested. In any event, there is no question that applications are often submitted without required supporting documentation, which may include complete and accurate stamped engineering site plans; proof of public notice; fundamental engineering information such as antenna specifications, effective radiated power from the antennas, latitude and longitude; site information such as the elevation of ground, antenna and support structures; information about other facilities already on the site with which there may be conflicts; structural integrity analyses; and proof of coordination with public property owners, when placing facilities on public property. In addition to omitting important information, applications often contain obvious errors, inaccurate or illegible plans and exhibits, or internally contradictory information. Such applications cannot be processed until they are correct and complete.

Again, the County believes that the incentives of the industry's contractors may explain these problems; whatever the reasons, however, it is clear that carriers and their contractors are frequently careless. Either they do not take the application process seriously, or they need to improve their internal quality control mechanisms.

Failure of Contractors and Carriers To Communicate with Each Other. A related issue concerns the failure of carriers and their contractors to communicate effectively. Many providers have numerous, separate outside contractors: one to identify sites, another to prepare drawings, a third to prepare a structural report, and so on. If the activities of these multiple entities are not coordinated by the carrier, errors and omissions lead to delays, and each entity has its own incentive to lay the blame at the local government's feet. Similarly, carriers sometimes change consultants, and the resulting loss of continuity results in additional delays as each new

contractor must become acquainted with the specifics of each application. In one case, a carrier changed contractors four times while an application for a new tower was pending.

Complications Related to or Arising from Lease Arrangements. Sometimes applications are delayed because of legal issues unrelated to the application and approval process. For example, the Washington Suburban Sanitary Commission ("WSSC") owns various sites in Montgomery County, such as water towers, on which it has leased space to several carriers, including Sprint. Applications to install antennas on WSSC property are subject to review by the TFCG. Clearwire recently submitted several applications to the TFCG for approval of co-location on WSSC sites currently occupied by Sprint. At the same time, Sprint contacted WSSC and asked that Sprint's leases be amended to allow Sprint to sublease to other users without WSSC's consent. WSSC's leases forbid Sprint from subleasing space on WSSC property, and the amendment would have allowed Clearwire – which was recently acquired by Sprint – access to WSSC's property under the terms of Sprint's leases. But Sprint had not informed WSSC of the fact that Clearwire was seeking to co-locate antennas with Sprint. WSSC only became aware of the co-location requests as a result of the TFCG process. Once WSSC learned of the pending applications, WSSC asked TFCG to suspend processing of Clearwire's siting requests until the sub-lease issue was resolved.

Another example of a legal issue created by an applicant's actions involved space on sites owned by the Montgomery County Public Schools. Both Sprint and AT&T have recently sought permission to add antennas on certain existing monopoles located on school property. At the time, however, the carriers were in arrears on their lease payments to the schools. Not surprisingly, the school district withheld its consent to the additional siting requests until the carriers brought their accounts up to date by paying back rent in full. Processing of the Sprint

and AT&T applications was therefore delayed until this issue – created entirely by the carrier's own actions – was resolved.

Failure To Comply with Other Legal Requirements. The Montgomery County Public Schools ("MCPS") report that, on numerous occasions, applications have been filed with the County's TFCG for approval to attach additional antennas to support structures located on school property before the applicants even contacted the school district's facilities management personnel. In these cases, TFCG approval was delayed until agreement was reached with the school district on the contractual terms of the co-location. In one case, the carrier was expressly instructed by MCPS to design a utility connection in a particular way, in anticipation that a grant of a utility easement would be executed before the lease for placement of the antenna was signed. The provider, however, ignored this instruction and proceeded to connect its utilities to an underground electrical storage vault without informing MCPS.

Failure To Consider Obvious Technical Issues. Carriers also cause delays when they ignore technical issues that obviously might affect the safety of a proposed installation. There have been numerous instances in which a carrier sought to co-locate on an existing tower that was close to or had exceeded its structural capacity, but simply ignored the ramifications of that fact. The TFCG often asks whether a structural analysis has been performed to verify that the additional antennas can be safely attached.[6] Submission of a structural analysis is not an application requirement, but the TFCG may request to see a copy of any structural analysis that

[6] Structural integrity is a very important issue not only because of the obvious safety implications but because new structural standards were recently adopted by the Telecommunications Industry Association, and because many older towers are at risk of being weakened by corrosion. *See* E. Gazzala, *Effect of the New "RevG" Structural Standard on the Wireless Industry*, ABOVE GROUND LEVEL (Oct. 2007) at 40; D. Southern, *Use Wireless Technology to Protect Towers as they Age*, ABOVE GROUND LEVEL (Apr. 2008) at 24 (articles attached as Exhibit B).

the carrier may have performed. The remarkable fact is that carriers have been known to ignore the findings of reports they themselves commissioned.

The importance of such an analysis is fairly obvious for safety reasons, especially so when the existing support structure is already carrying multiple antennas. Further, as the market enjoys more and more competition, with new entrants such as Cricket and Clearwire most recently deploying antennas in the County, existing towers and monopoles are filling up to their capacity. This increase in demand for space, along with the fact that many of the towers and monopoles are ten years or more old and may have not been inspected and maintained as they should have been over time, increases the risk of structural failure. The risk is heightened when the towers are of significant size or there are public areas or residential or commercial structures within a fall zone. For example, in connection with a pending application for a temporary cell tower, the TFCG has been advised that the temporary facility is needed because co-location is not feasible on the tower to which the antennas would otherwise be attached. That tower, which is 744 feet high and located in a residential area, is already overloaded, as it is currently supporting 400% of its original capacity. Structural modifications need to be made before any other antennas can be attached.

When the TFCG receives a structural analysis, the report is reviewed to ensure it does not contain obvious errors. Sometimes such reports identify problems, and then go on to propose remedies designed to correct the problems so that additional equipment can be installed safely. In one instance in 2006, however, Clearwire submitted a structural analysis that expressly stated that the planned installation would cause the tower to fail – yet Clearwire did not propose a remedy. A photo of the monopole is attached as Exhibit C. The County can only assume that Clearwire's staff either did not read the report that their company commissioned and paid for, or

that Clearwire's staff was not capable of understanding what the report said.[7] Even more remarkable, however, is that three years later, Clearwire submitted an application for siting on the same structure, without performing or proposing any changes to the structure; in this case, Clearwire simply omitted the structural analysis. The TFCG was only aware of the potential safety hazard because of its knowledge of the prior application.

In another case, Cricket submitted an application to attach antennas to a monopole, which was designed to replace a stadium light pole and was located next to stadium seating at a high school athletic field. The carrier's structural analysis, however, showed that the attachment could not be made safely until structural modifications were made to the monopole. A photo of the site is attached as Exhibit D.

These cases, and others like them, have caused significant delays in the application process through no fault at all of the County's. Given that these errors and omissions were only identified as result of the TFCG review process, it is hard to believe that restricting local discretion or imposing strict timeframes on local action will not increase the risk of serious harm to the public. It is clear that the wireless industry's internal review procedures are either inadequate, or are not carefully followed by the industry itself. The County submits that pressure on contractors and providers to get facilities in place causes them to take shortcuts; hamstringing local authorities will do nothing to make providers more careful.

Reliance on Outdated or Incorrect Information. Carriers have also been known to submit plans based on erroneous or outdated information, information that should have been known or readily learned by the applicant. For example, applications for co-location must take into account the current load on monopoles and towers, and the current uses of ground space in the

[7] While unflattering to Clearwire, the County prefers these interpretations to another possibility, which is that Clearwire deliberately submitted an application asking for the County to approve an unsafe installation.

vicinity, for obvious reasons. Yet applicants have been known to submit applications proposing to place antennas at locations that are already occupied by other antennas, and to place equipment shelters in spaces where a shelter has already been built. In other words, the applicants paid no attention to whether they would actually be able to do what they were proposing. These applications have to be reviewed, rejected, and revised, which simply wastes everybody's time.

In one recent case, an applicant provided the TFCG with coverage maps based on a computer model that placed the proposed antenna in the wrong place. This was a problem for the TFCG, since it could not determine whether it might be appropriate to recommend that a lower monopole be used if the coverage maps were inaccurate. But it also presumably would have been a problem for the carrier, if the application had been approved as submitted, because there was no guarantee that the carrier would obtain the coverage it desired if the antenna was installed in a different location than the model assumed would be the case.

Similarly, applicants have been to known to ignore established screening requirements for ground-mounted equipment. Again, applications without screening or landscaping plans must be revised.

The TFCG does its best to help carriers comply with the process. The TFCG has compiled a list of common problems, errors and omissions that it has found with applications, and has posted this list along with application materials on its website. A copy is attached as Exhibit E.

C. Requests for Co-Location Do Not Merit Special Treatment.

The wireless industry suggests that once a tower is in place co-location should be, if not automatic, then at least subject to minimal review. For example, Verizon believes Section 332(c)(7) should be amended to require approval of co-locations that do not result in a

"substantial increase" in an existing tower, and do not "materially change the appearance" of such a tower. But this approach presumes many things that are not true. Not only does it presume that such terms as "substantial increase" and "materially change" are readily definable, but it also presumes both that the applicants themselves always know what they are doing, and that adding antennas to an existing mounting structure never raises any additional issues beyond height and appearance. As noted above, however, applicants make mistakes. And sometimes a co-location request alters the effects of the overall structure in ways that are not immediately obvious. It is up to the local government to catch and correct errors.

For example, in one instance a carrier installed a shorter monopole than required by law, but elected to install it at a different location on the property than the one that had first been proposed. Consequently, when the carrier later sought to increase the height of the monopole to accommodate a request for co-location, the proposed new, taller structure would no longer meet setback requirements. In this case, co-location ended up requiring a special exception review.

Carriers sometimes agree to meet aesthetic requirements by installing "slimline" monopoles, or "uni-poles," in which antennas installed internally or flush-mounted to minimize the visual effects of the structure. If a carrier needs to add antennas, however, the original aesthetic purpose of the installation may be defeated. What started as minimal intrusions can become more and more intrusive, as external antennas are mounted or platforms added to accommodate a proliferation of antennas. Photographs of such a case in Prince Georges County are attached as Exhibit F.

Finally, in considering a co-location request, the TCFG must evaluate whether a new antenna will affect the cumulative amount of radio frequency radiation in the case of rooftop transmitters. The County complies strictly with the FCC's rules governing RF emissions, but it

also expects carriers to do so as well. Unfortunately, carriers do not always remember to consider the issue, or to point it out in their applications.

In other words, co-location requests are not necessarily dramatically different from initial siting requests. Furthermore, because it is difficult to anticipate the particular issues or problems that a particular request might raise, it is neither practical nor advisable to seek to limit local authority. The local siting process addresses more than just height and appearance, and must continue to do so.

* * *

The County also emphasizes that there would undoubtedly be unintended consequences of any attempt to impose strict time limits on the local siting review process. As discussed above, wireless providers themselves are responsible for many delays under the current system, because the adverse consequences of filing an incomplete or inaccurate application are small. For the Commission to further limit local authority, without recognizing that providers themselves cause delays, would inevitably result in a flawed process that would not advance the Commission's goals.

III. THE NATIONAL PLAN SHOULD CONSIDER COMPREHENSIVE REFORM FOR POLE ATTACHMENTS.

The NOI requested comment on whether pole attachment issues impede broadband deployment, NOI at ¶ 50, but relatively few commenters addressed this issue. In general, electric utilities argue for preserving their control over infrastructure, and against adopting lower rates for attachments used to provide broadband service.[8] Some providers of communications services, on the other hand, urge the Commission to open up access to existing poles.[9] The

[8] *See, e.g.*, Comments of UTC and Edison Electric Institute at 16-18; Comments of Southern Company Services, Inc. at 17-18

[9] *See, e.g.*, CTIA Comments at 21-24.

County offers the Commission a third perspective, in its role as an alternative broadband service provider.

The County has a strong interest in reform of the Commission's current pole attachment rules, because the County itself uses many miles of fiber optic cable, as described above. The County's FiberNet is attached to poles owned by commercial providers, and the County currently faces difficulties when installing new fiber facilities.[10] Many poles are either too short to carry another set of cables, or are structurally inadequate to support the additional load. An example of an overloaded pole appears in Exhibit G. In many cases, there is simply no space for either a new competitor or the County to attach facilities. In addition, existing pole owners can require as much as 18 months to extend poles or install taller poles, commonly referred to as "make-ready" work. Between the lack of space and the time needed for make-ready work to be done, the County is finding it more difficult to deploy additional broadband facilities. This in turn makes it more difficult to meet the needs of the public schools and the County library system, as well as the County's own internal broadband communications needs. Addressing pole attachment issues will therefore be an important part of a national broadband plan to facilitate deployment and access to broadband services and adoption.

The County also understands that providers of Distributed Antenna Systems ("DAS") may face difficulties in attaching their facilities to existing utility poles. Such systems link individual antennas mounted on utility poles with fiber optic cable along stretches of roadway, thus reducing the need for constructing support structures for wireless antennas. Easing the deployment of DAS facilities on utility poles may alleviate concerns regarding local procedures governing the installation of monopoles and wireless towers.[11]

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[10] *See* CTIA Comments at 19-20.

[11] *See* CTIA Comments at 19-20.

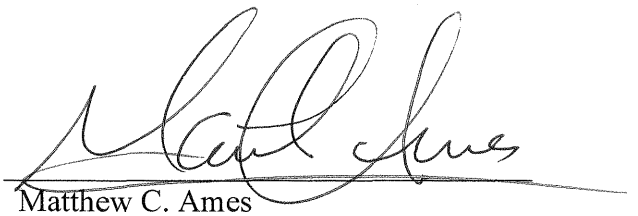
In addition, the County believes that the extension of smart grid technology provided for in the American Recovery and Reinvestment Act of 2009 offers an excellent opportunity for improving access to poles, and therefore access to broadband service. As existing infrastructure is upgraded to allow for the introduction of smart grid technology, provisions could be made to ensure that sufficient space is available for use by local governments as well as new providers. This is particularly important and reasonable, given the large amounts in public funds that are being expended for this purpose.[12] But if the national broadband plan does not address pole attachment issues, then the opportunity to facilitate shared uses and coordinate infrastructure could be lost. The County urges the Commission to coordinate proceedings within the FCC and before other agencies that address pole attachment and smart grid issues in an effort to resolve the space and make-ready issues mentioned above.

[12] The ARRA dedicates $4.5 billion to modernizing the electric grid, to include smart grid grants. American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-15, Title IV (2009).

CONCLUSION

Montgomery County supports the adoption of a national broadband plan that recognizes the active and central important role that local governments play in providing and promoting broadband access across the nation, and that gives full and fair consideration to the rights of local governments.

Respectfully submitted,



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July 21, 2009

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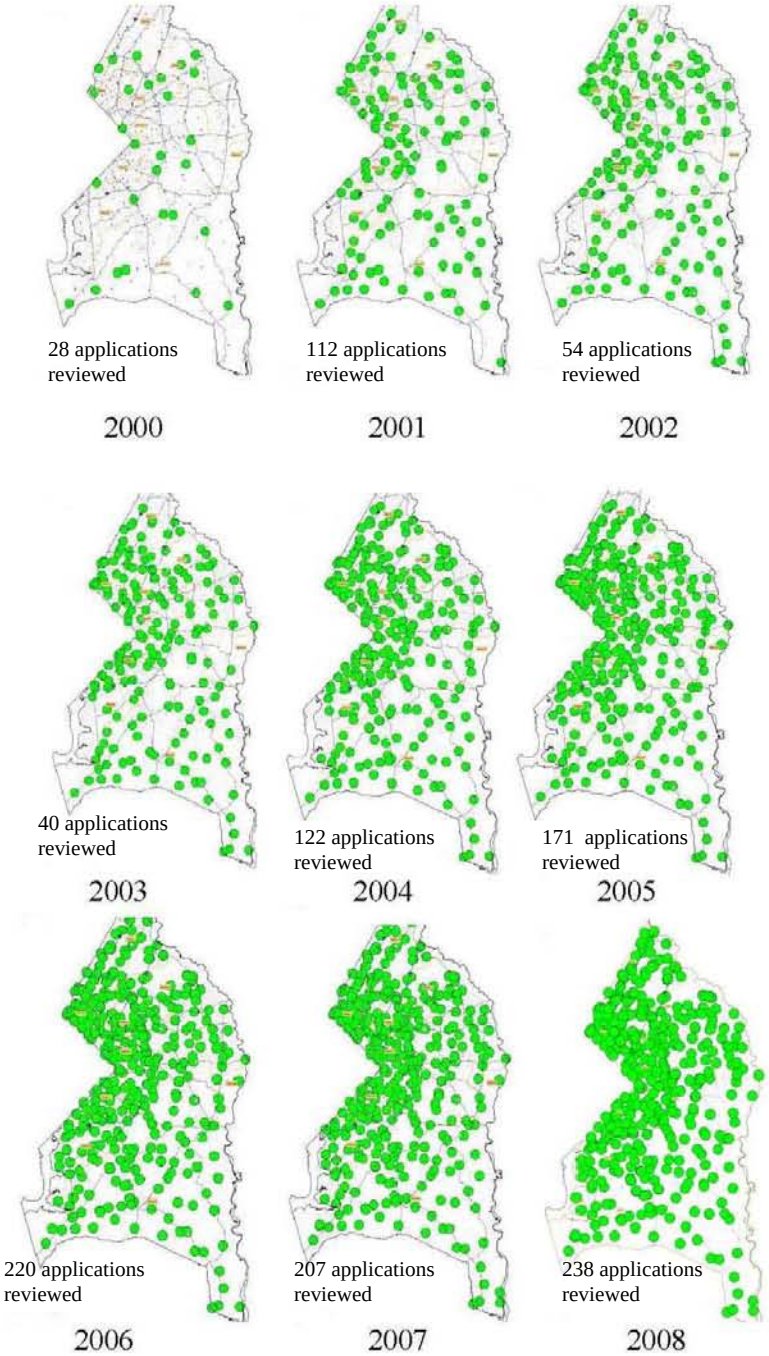
EXHIBIT A

Exhibit A: Locations of Antennas In Prince Georges County



Year-to-Date 2009 – 175 applications reviewed.

EXHIBIT B

Exhibit B

Effect of the New 'Rev G' Structural Standard on the Wireless Industry

Here are some stepping stones you can use to avoid puddles of confusion as adoption of the standard progresses across state and local jurisdictions.

by Edward A. Gazzola, M.Eng., P.Eng.

The new "Revision G" structural standard is becoming law in many states and local jurisdictions across the country, and with it comes a ripple effect that will affect those involved in the wireless industry (carriers, tower owners, structural-engineering firms, site-development firms, and companies buying or selling towers, to name a few). Towers that once passed a structural review may now fail, and towers that once failed a structural review may now pass. The following information should demystify this change that is about to sweep through our industry with a particular focus on what to expect and recommendations for preparing for it.

Adoption of the "Rev G" standard

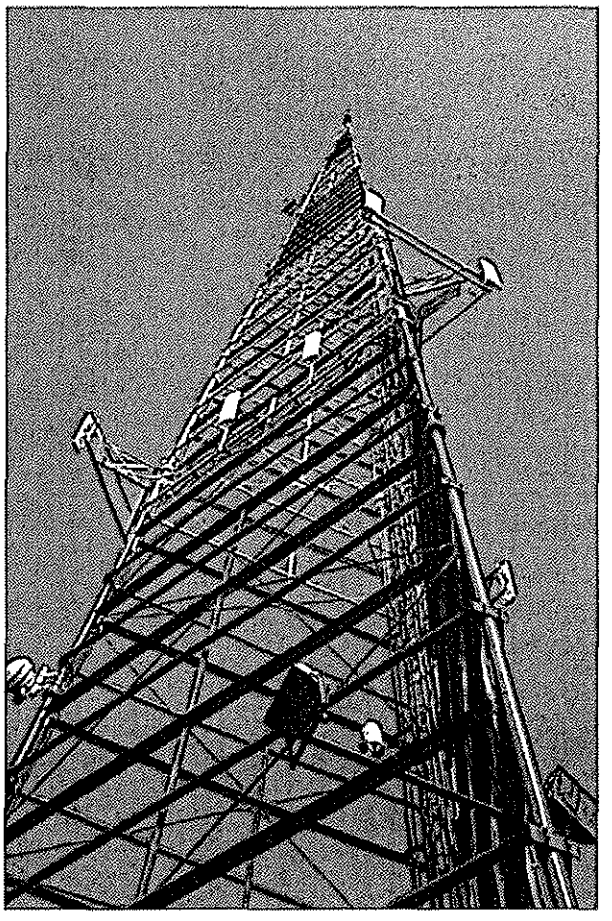
The new "Revision G" structural standard, TIA-222-G: Structural Standards for Antenna Supporting Structures and Antennas, became effective on Jan. 1, 2006. It was created under the auspices of the Telecommunications Industry Association in cooperation with the American National Standards Institute. It is the seventh revision to the standard since its first release in 1949. It is also the first revision in 10 years and contains the most significant industry-affecting changes since the fourth revision in 1987.

Like any industry-produced technical standard, it is not enforceable until it has been adopted as part of state or local building codes. In the first year following its release, only one state officially adopted the new standard—Florida, in December 2006. Although several states and local jurisdictions were anticipated to adopt Revision G this past summer, others may take several years to adopt the standard into law. It is also possible that some jurisdictions may never adopt the new standard. For companies working in multiple states, the next several years may be confusing for all involved.

New vs. old standard

So what are the big differences between the preceding standard, "Revision F," and the new standard, "Revision G"? The following summarizes, in non-technical language, six major changes:

1. Change in design philosophy — The approach for structural analysis of a tower has now been made consistent with the approach used for analyzing other structures, such as buildings and



bridges. Because of this change in philosophy, all the formulas engineers use for analysis have now changed, and may produce different results than in the past.

2. Modified wind loads — The approach used for determining the wind load on a tower has changed, again to be consistent with other structures. Rather than using the average speed of one-mile of wind, the highest gust over a three-second period is now used, thus potentially changing the wind load applied to a tower.

3. Mandatory ice loads — Currently, tower owners decide whether or not ice loads should be considered and to what extent. Historically, zero to one-half inch of radial ice was used. Under Revision G, ice loads are now mandatory and can vary from zero inches to one-and-a-half inches, thus potentially adding more load to the tower.

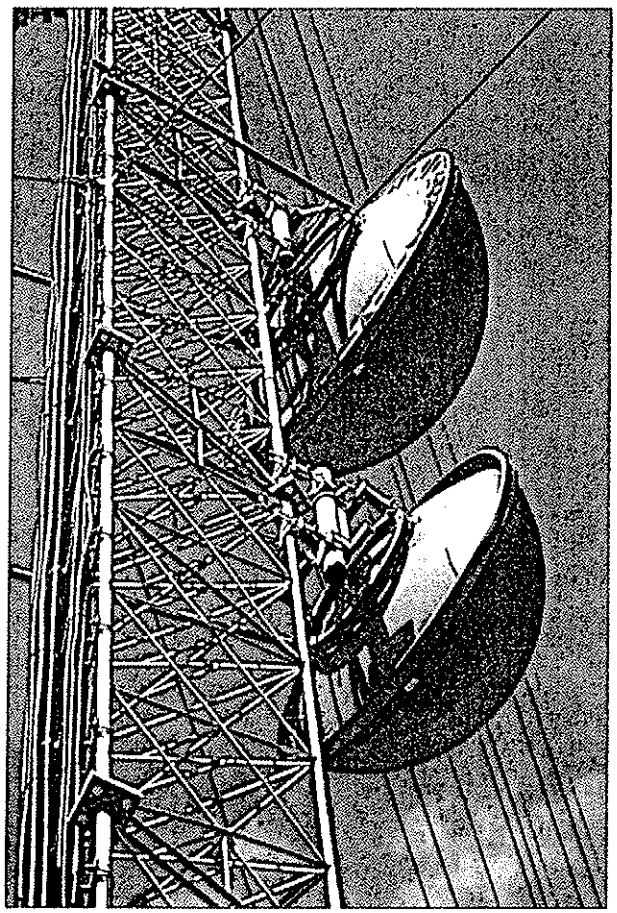
4. New site-condition factors — A new "exposure and topographic" factor has been added to the standard to address local site conditions. Towers located in open and exposed terrain, or on hilltops, are more exposed to local winds, and factors are now applied to increase the wind load to accommodate these conditions.

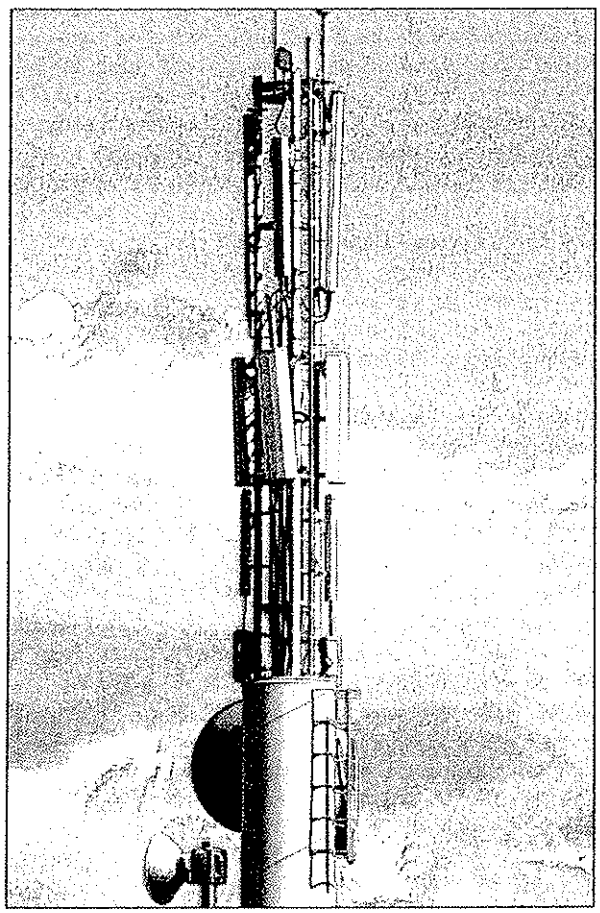
5. New risk-of-failure factors — A new "structure classification" factor has been added to address any increased risk to life or property in the specific location of the tower or to identify a tower that cannot afford to endure a loss of service; i.e., essential communications. There are now three classes of importance factors that can affect tower loading. Some counties have already made this increased factor mandatory, thus increasing stresses.

6. New seismic (earthquake) loading considerations — Seismic analysis, as it applies to towers, is now a mandatory requirement. This condition rarely governs for most towers; however, this new requirement may affect some towers in seismic areas.

The new standard has numerous other changes and additions, such as site-specific soil conditions, foundations, tower safety and antenna mounts. However, the foregoing are the major ones. In general, the analysis of towers is now more specific to site and tower types. So, what kind of result should we expect?

Although the new standard is not expected to generate significantly different results over the entire population of towers in the country, differences will appear in site-specific applications of the new standard. For example, due to local site conditions, Florida is seeing increased tower stresses. Thus, there is no means of forecasting results on a specific tower until a full structural analysis is conducted.





Confusion expected

As with any significant industry change, a certain amount of confusion is expected. Those involved can expect the following:

- There may be misunderstandings when dealing with municipal building departments.
- Some towers with reserve capacity under Revision F could now fail, and some recently reinforced towers could now pass.
- Potentially, more information, time and cost may be required to conduct a structural analysis.
- There may be increased upgrade costs for certain towers or in certain geographic areas.

It is incumbent on all participants in the wireless industry to educate themselves on these changes and prepare their organizations accordingly.

Much of the confusion will be because of uncertainty around the timing of when and how the new standard will be adopted in each jurisdiction and site-specific results.

How do we prepare ourselves?

The following are some recommendations to assist those involved in the industry to prepare for this change:

Carriers

- Educate your project and construction managers on the changes and their effects.
- Consider preparing for increased build time due to delays in data-gathering, analysis, permitting and upgrades.
- Be aware that tower owners may need to unexpectedly upgrade certain towers.

Tower owners

- Educate your sales teams on these changes to allow them to better explain the sometimes non-intuitive results to their customers.
- Establish internal policies on your approach to conducting structural analysis due to the timing around adoption of Revision G.
- Inventory your existing site documentation and identify potential problem sites in advance, as some of the effects and delays are predictable.

Structural engineering firms

- The standard is new and software upgrades are new, so check your results manually.
- Modify internal tools and systems to minimize delays for your clients.
- Plan extra time to explain unexpected results to your clients.

Site acquisition and development firms

- Don't skip over towers that you "know" failed last time; they may pass this time.
- Do your research on local building departments—which standard has been adopted and if there are any modifications.
- Consider factoring-in potential delays to the build plan.

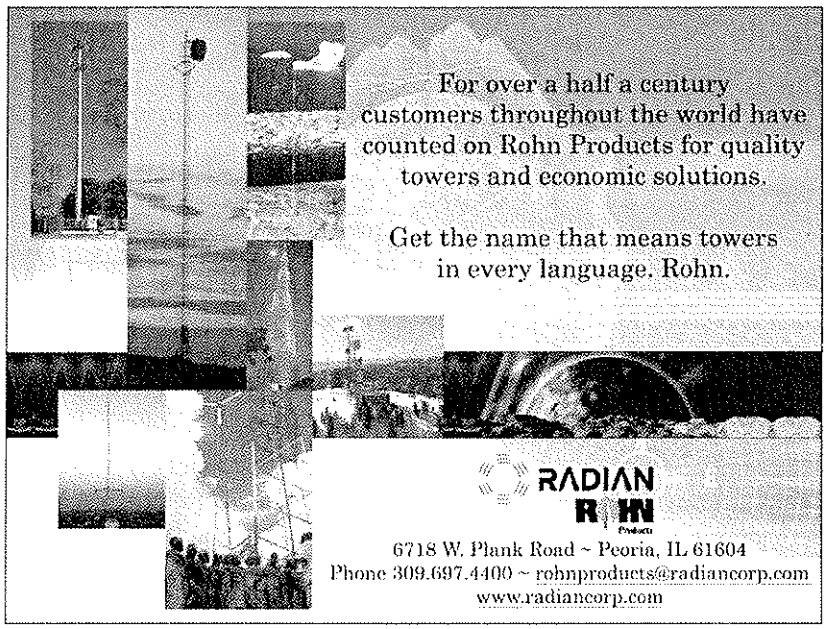
Companies buying or selling towers

- The value of the asset has changed because every specific tower's reserve capacity in the portfolio has changed.
- Involve a tower engineer in the transaction to provide guidance.
- Consider the portfolio as a number of individual assets and not as a whole (law of averages).

Preparation is key

The Revision G structural standard will soon become law in many states and local jurisdictions across the country, while other jurisdictions will be slower to adopt it—or might never do so. Towers that passed under the old standard may fail under the new standard, and vice versa. It is incumbent on all participants in the wireless industry to educate themselves on these changes and prepare their organizations accordingly. The adoption of this state-of-the-art standard, one that is consistent with other industry standards, is the right thing to do, but it may cause considerable pain along the way. As Julius Caesar said, "It is easier to find men who will volunteer to die, than to find those who are willing to endure pain with patience." agl

Gazzola is president of Atlanta-based Morrison Hershfield. The engineering firm has been an active member of the TIA/EIA-222 Tower Standard for the past 20 years, as well as other international tower standards.



Use Wireless Technology to Protect Towers As They Age

'Free Coffee Tomorrow,' the sign says, posted in some restaurants across North America.

By David J. Southern, P.E

Have you seen the joke? "Free Coffee Tomorrow." As soon as tomorrow comes, well, another tomorrow is on the horizon, with the renewed promise of free coffee. When tomorrow comes for many guyed towers that are at risk for corrosion damage, the consequences may be anything but free.

Tragic events involving anchor failures with guyed towers are drawing mostly regional interest with primarily minor property damage and some injuries. However, as evidenced in the aging buried metal industries, it may only be a matter of time before more serious consequences catapult this guyed tower anchor corrosion to the forefront of national telecommunications industry news. Consider tragic corrosion events such as the Carlsbad pipeline explosion (www.corrosion-doctors.org/Pipeline/Carlsbad-explosion.htm) or the Alaska pipeline shutdown (www.washingtonpost.com/wp-dyn/content/article/2006/08/07/AR2006080700131.html).

These tragic corrosion events led to new regulations in 2002 and 2006 within the federally regulated interstate transportation industry effectively stiffening regulatory oversight, inspections, reporting and certification of reports by senior company officers. As a result of the new laws, for the first time in history, company employees and officers are receiving jail time for negligence in corrosion practices and poor operating procedures.

North America's aging assets

Many of North Americas 30,000 guyed towers are celebrating their 20th birthday, as is the protective anchor coating that helps to keep them standing. Whether protected with a painted coating or a galvanized coating, these protective systems are nearing their expected lifespan, placing the future of many guyed towers at potential risk. The unseen danger to these giant structures is the corrosion often undetected several feel below ground level, making it almost impossible to inspect.

When the protective coatings fail, it is only a matter of time before destructive rust and corrosion significantly weaken the tension anchors.

Compounding the corrosion rate of buried metal tension anchors are two factors: new, unfriendly neighbors, and a changing environment.

New, unfriendly neighbors

Guyed tower structures are getting two new, unfriendly neighbors, one above ground and the other below grade.

Urban sprawl is pushing residential developments up the hill in search for more land and a better view, and as a result, increasing the hazardous consequence of a tension anchor failure. In terms of property damage and survivor litigation, catastrophic incident settlements could reach the millions. Towers that used to be in the middle of nowhere are now in the middle of somewhere and the new neighbors are more demanding and unforgiving.

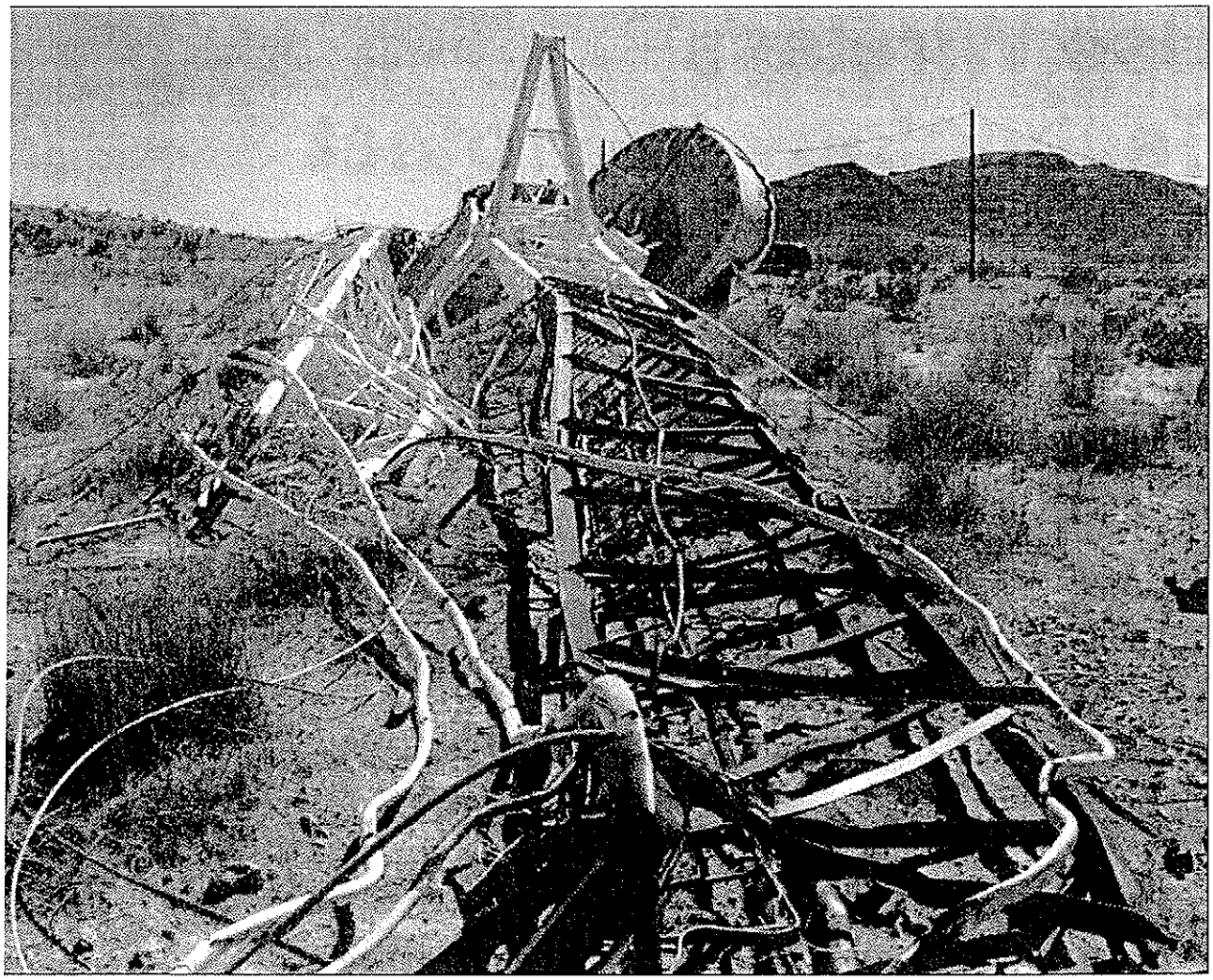
The other unseen danger to guyed tension anchor towers is below ground. New and existing cathodic protection systems designed to protect other buried metal structures can interfere with the protective nature of tension anchor coatings leading to early failure. While most cathodic protection systems are implemented to not interfere with guyed tower structures, they too are getting new unfriendly neighbors that can effect their performance including:

1. expanding pipeline operations.
2. DC-power mass transit.
3. cathodic-protected bridges
4. cathodic-protected airport runways
5. other cathodic-protected buried metal structures.

To protect both their buried metal assets and their corporate risk profiles, many operators of buried metal structures are resorting to wide-scale deployment of cathodic protection systems and remote monitoring to ensure their investment in protection and risk aversion stays on line full time.

Changing environment

Whether you believe in global warming or not, many believe weather patterns



No one wants to come to a tower site to investigate an outage and find this: a mangled tower sprawled across the ground. As towers age, corroded guy anchors pose an ever-increasing risk leading to tower collapse.

are changing in one way or another. In most cases, annual rainfall patterns and dry periods are changing and this natural phenomenon can lead to changes to corrosion attack on buried tension anchors. The change in corrosion is usually not for the good. Ground moisture is one of the four elements needed to create a galvanic corrosion cell on tension anchors and if annual rainfall patterns change, so does the corrosion potential.

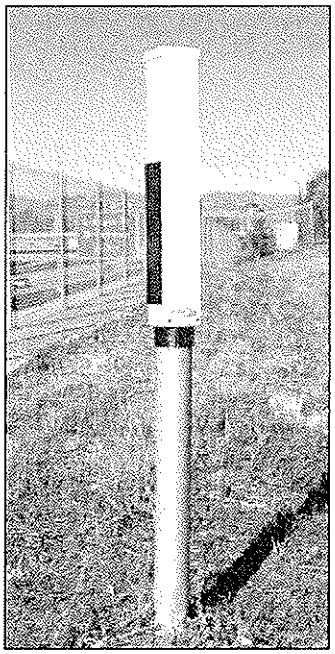
Some regional environmental changes in North America include high wind areas with record-setting wind speeds that can structurally load a tower to premature failure in the event of advanced unseen anchor corrosion.

Solutions

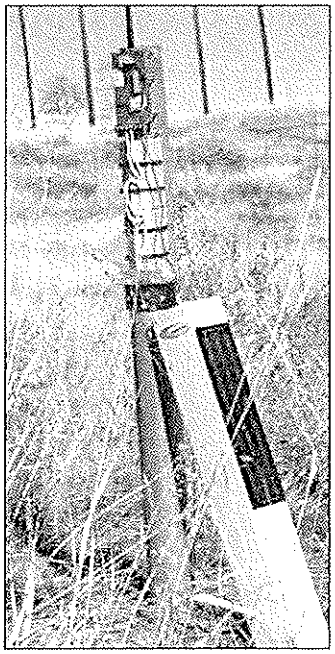
To ensure adequate protection of guyed towers a two-tiered corrosion prevention system is suggested. First install pre-engineered, passive sacrificial anode corrosion prevention systems providing a solution to all the corrosive conditions that might pose a threat to tower anchors. The sacrificial anode systems re-direct corrosion away from where it is not wanted and can provide superior anchor protection for 10 to 20 years.

To ensure the sacrificial anode systems operate as intended throughout their lifespan and are not subject to changing interference or environmental conditions, it is recommended the solution also include a permanent ground reference electrode and test-head to allow for quick and easy measurement to ensure the sacrificial anodes are providing adequate protection to the tension anchors. The systems are easy to install on new and existing towers, and provide protection that meets or exceeds tower industry standards and National Association of County Engineers (NACE) recommendations.

Within the past 20 years, remote advanced corrosion protection systems were put in place to help extend the life of guyed tower tension anchors. However, due to the often-remote location of the systems, they fell into disrepair and became increasingly difficult to



Many operators of buried metal structures are resorting to wide-scale deployment of cathodic protection systems and remote monitoring to ensure their investment in protection and risk aversion stays on line full time.



This cathodic protection monitor shows the data radio that monitors the anchor-to-soil ground potential voltage to ensure the sacrificial anode system maintains the tension anchors at the recommended –850 millivolt threshold per NACE standards.

maintain. Now the corrosion protection systems are also aging to the point of needing increased care and monitoring. Adding to the maintenance difficulties are land use restrictions, national security access issues and increased unexpected corrosion rates.

Early cell phone technologies led some companies to try monitoring the corrosion protection systems remotely. However, cost of implementation, spotty cell phone coverage, monthly service plan fees and questionable security restricted the widespread use of wireless technologies to solve this difficult problem.

Fortunately, a new and promising wireless technology was recently introduced into the corrosion protection for guyed towers with the potential to provide remote monitoring for an economical price with no recurring fees or costs.

For maximum piece of mind, a cathodic protection remote monitoring unit (CP RMU) radio should also be installed on tension anchor sacrificial anode test stations. The number of CP RMU radios installed per tower depends largely on the height of the tower, high consequence to third parties due to failure, number or tension cables and the number of known cathodic protection systems within the influence area. The CP RMU radios monitor the anchor-to-soil ground potential voltage to ensure the sacrificial anode system maintains the tension anchors at the recommended –850 millivolt threshold per NACE standards. The CP RMU radios monitor and report the anchor-to-soil ground potential values to a centrally located office computer, which in turn collects all the anchor-to-soil ground potentials for all the towers. Tower personnel can then remotely monitor the corrosion prevention systems without unnecessary travel, expenses and risk exposure.

Finish the job

For many of the same reasons why towers were constructed in the first place, tower corrosion prevention systems are being deployed today:

1. Public safety, company safety and operator safety.
2. Reduced operator windshield time, road usage, vehicle maintenance, risk exposure and general liability insurance.
3. Reduced operating costs: Operators spend time on vital company functions rather than driving around inspecting what can't be seen.
4. Automated and timely status reporting.
5. Timely operational data retrieval with enhanced automated trending capabilities and alarming functionality and automated operator notification.
6. Enhanced corrosion prevention performance: The systems get worked on in a timely fashion when problems arise, not three months later.

Today, multipurpose, built-for-purpose, all-in-one, corrosion protection remote monitoring, wireless, data communication radios monitor and report corrosion protection operations including anchor-to-soil potential, facility power status, facility interior temperature and backup battery voltage levels. They wire directly to field assets and feed critical tower operation information into existing or supplied company data systems without going outside the company's firewall security protection. The radios are relatively low cost, easy to install, have no licensing fees and no monthly recurring fees.

Each corrosion protection remote monitoring radio also can serve as an infinite data communication repeater site. Adding new radios extends the radio networks' ability to reach further into remote areas, thus enabling additional monitoring of remote compressors, energy fields, oil and gas wells, gas plants, pump stations and water towers.

Many energy and pipeline companies already own other similar radio products, and the new corrosion protection remote monitoring radios easily integrate into these existing systems with minimal investment and a tremendous return on investment.

Consider an advanced corrosion prevention and remote monitoring solution today and perhaps there will be free coffee tomorrow. agl

Southern is a cathodic protection product development manager with FreeWave Technologies where he is responsible for developing new remote monitoring technologies for corrosion prevention. He has a bachelor of science degree in engineering from the Montana School of mines with advanced education in remote automation. He can be reached at *dsouthern@freewave.com* or 866-923-6168; *www.freewave.com/cp4.*

EXHIBIT C

Exhibit C: Monopole Subject to Structural Failure if Additional Attachment Made

EXHIBIT D

Exhibit D: Monopole at Stadium Requiring Structural Modification

EXHIBIT E

Exhibit E

Common problems, errors, and omissions found with Application for Wireless Communications Site Coordination form that can slow processing and delay scheduling before the TTFCG.

1. Missing application form or wrong version of application form submitted – most recent version is dated "revised 03/01".

2. No vicinity map submitted. Typically a copy of the page from the latest ADC map book with the site identified with an arrow, circle, or other symbol showing where the site is.

3. Site plans and elevations do not show placement of existing antennas and related equipment or do not indicate the name of existing carriers.

4. RF propagation maps showing area-wide coverage before and after the siting are not always included. Although required for all applications, they are critical for review of any new tower or monopole to be constructed.

5. No listing of alternative existing structures within a one mile radius which may have been considered, and an explanation of why those locations could not be used. If there are any existing alternate sites, a copy of RF propagation analysis or results from drive tests will usually be requested if not submitted in anticipation of same.

6. Identification of the number of additional carriers a new tower or monopole may accommodate.

7. No copy of a structural analysis or structural engineer's certification form to demonstrate safety of attachment on questionable structure such as in cases of attachment to very old facilities or to structures that were not originally erected to support the large antenna arrays necessary for cellular and PCS services. Additionally, if structural capacity is used as justification for why existing structures are not being considered, a structural analysis or similar confirmation is required.

8. No copy of an FAA certification review or mention that a request for one has been submitted.

9. No current facility location and projected growth plan on file.

10. Address not shown or incorrect, missing or inaccurate latitude or longitude locations.

11. Conflicting information shown, such as different elevations shown on the application form or cover letter from what is shown on the plans, or differences in number or type of antennas between what is in the application text and on the drawings.

12. No heights of buildings, size of equipment sheds, distances from property lines shown on drawings, or in the text, or both.

13. No fax or e-mail numbers for contact person.

EXHIBIT F

Exhibit F: Co-Location Causes Substantial Alterations

This monopole was designed by the initial carrier to minimize the visual impact in the community a "slim-line" monopole with flush mount antennas. Over time, the a co-locator added three "T-Arm" standoff support for six additional antennas. The initial carrier replaced the first antennas with larger ones. Most recent co-locator added abbreviated platform to support six more antennas. Structural modifications had to be made to accommodate the latest antenna array. With each successive placement of antennas, the more visually intrusive the structure becomes.

EXHIBIT G

Exhibit G: Loaded Utility Poles