

# DAS/SMALL CELLS & HISTORIC PRESERVATION:

An Analysis of the Impact of Historic Preservation Rules on Distributed Antenna  
Systems and Small Cell Deployment



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## **DAS/SMALL CELLS & HISTORIC PRESERVATION:**

### **An Analysis of the Impact of Historic Preservation Rules on Distributed Antenna Systems and Small Cell Deployment**

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#### **I. INTRODUCTION**

Distributed Antenna Systems (“DAS”) and small cell technologies are becoming an increasingly important part of wireless network infrastructure in the United States. Most agree that DAS and small cell deployment are critical components needed to achieve this country’s goal of universal wireless broadband coverage to all Americans.

Yet, the Federal Communications Commission’s (“FCC” or “Commission”) current historic preservation rules, adopted a decade ago to deal with the effects of traditional towers and macro site antennas on historic sites, are ill-suited to DAS and small cell technologies that do not rely on towers. Accordingly, this paper recommends alterations to the Commission’s preservation approach to better accommodate DAS and small cell technologies.

#### **II. BACKGROUND: DAS AND SMALL CELLS DEFINED**

The Commission has defined DAS as an “[a]lternative to the use of tall structures for cell sites.”<sup>2</sup> It has explained that DAS is comprised of a relatively large network small antenna nodes that are typically connected by fiber optic cable and “can be placed on such locations as utility poles, buildings, or traffic signal poles, in geographic areas where either constructing towers is not feasible, or where wireless traffic demands are too great to be met with fewer, large cells.”<sup>3</sup> The Commission has recognized that because DAS sites are unobtrusive, they are “particularly desirable in areas with stringent zoning regulations, such as historic districts.”<sup>4</sup>

The Commission has defined small cells as “low-powered wireless base stations intended to cover targeted indoor or localized outdoor areas ranging in size from homes and offices to

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<sup>2</sup> *Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, Fourteenth Report, 25 FCC Rcd 11407, 11578 n.757 (2010) (“Fourteenth Report”). These technologies complement, but do not replace the need for, standard towers, depending on the circumstances. Although DAS or small cells can be used in many settings, they often serve as supplements to standard cellular tower capacity, providing coverage in a targeted densely populated, high use, or aesthetically sensitive areas.

<sup>3</sup> *Id.*

<sup>4</sup> *Id.*

stadiums, shopping malls, hospitals, and metropolitan outdoor spaces.”<sup>5</sup> According to the Commission, small cells typically provide wireless connectivity in areas that “present capacity challenges to traditional wide-area macrocell networks,” and can also be used to “help fill in coverage gaps created by buildings, tower siting difficulties, and/or challenging terrain.”<sup>6</sup> In light of the physical characteristics of small cell facilities, the Commission is examining whether “any tailoring or streamlining of our environmental requirements is appropriate” for small cells.<sup>7</sup>

### **III. THE CHALLENGE: INTERPRETING PRESERVATION RULES IN LIGHT OF UNANTICIPATED NEW TECHNOLOGIES**

Because DAS and small cell antennas are commonly installed on existing structures, often existing poles within or near utility rights-of-way, they cause little ground disturbance and create almost no additional visual effect—a quality that recommends the technologies for use in and near historic districts. Yet, DAS and small cell solutions were not widely used when the signatories entered into the Collocation Agreement in 2001<sup>8</sup> and the Nationwide Programmatic Agreement (“NPA”) in 2004,<sup>9</sup> which largely focused on towers and other macro site deployments. As a result, while some of the provisions in these agreements appear capable of accommodating DAS and small cells, there are areas at which the technology and regulation do not comfortably mesh and the current procedures can actually discourage DAS and small cell use in historic settings.<sup>10</sup> In addition, preservationists are not fully aware of DAS and small cell technologies and their potential, often resulting in treatment more appropriate for macrocells.

#### **A. Collocation Agreement**

State Historic Preservation Offices (“SHPOs”) and industry members agree that DAS and small cell antennas—except when located on structures that (i) are 45 years or older, (ii) are located in or near historic districts, or (iii) are themselves historic—are excluded from review by SHPOs or Tribal Historic Preservation Officers (“THPOs”) under Section V of the Collocation Agreement.<sup>11</sup> However, this exclusion is limited in its practical application for DAS and small cells for three reasons.

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<sup>5</sup> *Commercial Operations in the 3550-3650 MHz Band*, Notice of Proposed Rulemaking and Order, 27 FCC Rcd 15594, 15596 ¶ 4 (2012).

<sup>6</sup> *Id.*

<sup>7</sup> *Id.* at 15639 ¶ 143.

<sup>8</sup> Nationwide Programmatic Agreement for the Collocation of Wireless Antennas (2001) (“Collocation Agreement”), *available at* 47 C.F.R. Part 1, App. B.

<sup>9</sup> Nationwide Programmatic Agreement for Review of Effects on Historic Properties for Certain Undertakings Approved by the Federal Communications Commission (2004) (“NPA”), *available at* 47 C.F.R. Part 1, App. C

<sup>10</sup> This is not intended as a criticism of either the Collocation Agreement or the 2004 NPA, as neither DAS nor small cell technologies were envisioned by the drafters at the time the agreements were created.

<sup>11</sup> Specifically, the Collocation Agreement states that “an [a]ntenna may be mounted on a building or non-tower structure without such collocation being reviewed under the consultation process set forth in Subpart B of 36 CFR 800” if the structure is less than forty-five years old; if the structure is not in or near a historic district; or if the structure is not eligible for the National Register or already a National Historic Landmark. Collocation Agreement, § V(A)(1)-(3).

First, because DAS providers deploy systems disproportionately in urban settings where most historic sites and districts are located, a significant number of their projects may be near historic sites and will therefore lose the Collocation Agreement exclusion.

Second, the 45-year rule in the Collocation Agreement that triggers SHPO/THPO review makes no distinction between buildings, which the agreement drafters had in mind, and other structures like utility poles favored for collocation by DAS and small cells. Wood Pole Industry estimates that approximately twelve percent of wooden poles—between 19 and 22 million poles—are 45-years or older, with the number growing as pole preservation technology improves.<sup>12</sup> Treating these poles as potentially eligible or even contributing resources would increase by a factor of 10 the estimated number of potentially eligible National Register and contributing sites in the country.<sup>13</sup>

Third, preservation practice (much like communications technology) is changing, and preservationists are increasingly considering “corridors” that include utility and highway rights-of-way as eligible for the National Register.<sup>14</sup> For example, electric transmission structures are regularly evaluated for National Register eligibility in California.<sup>15</sup> When this occurs, collocation on structures within the corridor, such as utility poles, lose the Collocation Agreement exclusion. Because DAS and small cells often utilize poles in utility rights-of-ways, considering these corridors eligible will disproportionately thwart the ability of these technologies to be utilized.

## **B. Nationwide Programmatic Agreement**

The NPA is the lodestar of historic compliance under the FCC’s rules, as it integrated the Collocation Agreement into its procedures and governs when the Collocation Agreement exclusions do not apply. In addition to the exclusions in the Collocation Agreement, the NPA introduced several additional exclusions, one of which applies to antennas located in or near

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<sup>12</sup> Christopher Joyce, *What’s Up with Those Utility Poles?*, NPR (Jan. 6, 2007, 4:00 PM), <http://www.npr.org/templates/story/story.php?storyId=6735420>; *Steel Utility Distribution Poles*, Steel Market Development Institute, <http://www.smdisteel.org/en/Construction/Utility%20Poles.aspx> (last visited Feb. 26, 2013); *Wood Poles: How Long Do They Last?*, Wood Pole Newsletter (North Am. Wood Pole Council), 1996, at 1, <http://www.woodpoles.org/PDFDocuments/wpnv20.pdf> ; see also RICHARD E. BROWN, *ELECTRIC POWER DISTRIBUTION RELIABILITY* 449 (2d ed. 2009). In addition to poles, studies show that a significant number of other utility grid features are past or approaching the 50-year mark.

<sup>13</sup> The National Park Service reports 88,441 places have been listed on the National Register while another 1,677,773 have been designated as “contributing resources.” See *National Register of Historic Places*, National Park Service, <http://www.nps.gov/nr/> (last visited Feb. 26, 2013).

<sup>14</sup> National Register nominations in recent years have increasingly included features usually associated with utility rights-of-way, such as streetlights. A search of the National Register database (<http://nrhp.focus.nps.gov/natregadvancedsearch.do>), for example, turned up 2,280 references to “street lights” listed individually or as contributing features. Likewise, historic roadway advocates are including utility poles—indeed, entire utility rights-of-ways—into their corridors. See, e.g., Paul Daniel Marriott, *The Preservation Office Guide to Historic Roads* 12 (2010), <http://www.historicroads.org/documents/GUIDE.pdf>. Moreover, even when utility rights-of-way are not included in a highway corridor, the highway’s eligibility negates the Collocation Agreement’s SHPO review exclusion, which depends on there being no eligible historic features near the collocation site.

<sup>15</sup> See Jeremy Daniel Adams, *Guide to Evaluating Electric Transmission Structures for the National Register of Historic Places*, submitted in partial satisfaction of the requirements for the degree of Master of Arts in public history at California State University, Sacramento, Spring 2010, at vi-v.

utility corridors.<sup>16</sup> The evolution of this exclusion bears review, because it examined antennas mounted on short structures. The Report and Order adopting the NPA explains the utility corridor exclusion as follows:

Due to the increasing usage of wireless services and advances in technology, providers of certain types of service are increasingly finding it feasible to utilize antennas mounted on short structures, often 50 feet or less in height, that resemble telephone or utility poles. Where such structures will be located near existing similar poles, *we find that the likelihood of an incremental adverse impact on historic properties is minimal. Moreover, it promotes historic preservation* to encourage construction of such minimally intrusive facilities rather than larger, potentially more damaging structures. *Therefore, the Nationwide Agreement excludes from Section 106 review facilities located in or within 50 feet of a right-of-way designated for communications towers or above-ground utility transmission or distribution lines*, where the facility would not constitute a substantial increase in size over existing structures in the right-of-way in the vicinity of the proposed construction.<sup>17</sup>

While the Report and Order language indicates a broad exclusion for antennas mounted on utility-type poles based on a finding that their impact on historic properties is minimal, the exclusion in the NPA itself is more circumscribed. It limits the provision to portions of a utility right-of-way not within boundaries of historic properties, as well as requires tribal consultation.<sup>18</sup> Nonetheless, the Report and Order findings offer a rationale (*i.e.*, encouraging antennas in utility rights of ways “promotes preservation”) and a strategy (*i.e.*, excluding antennas and short poles from Section 106 review) that can served as a basis for a DAS and small cell exclusion.

The NPA has further implications for DAS and small cell installations that require the installation of new poles. While the Collocation Agreement excludes from SHPO review DAS installations not near historic sites relying on existing structures, it is unclear if the Collocation Agreement extends to situations in which DAS providers must erect dedicated structures or poles for an antenna. At issue is whether DAS providers must consider utility-sized poles subject to the full SHPO consultation process Sections V and VI of the NPA that applies to new towers.<sup>19</sup>

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<sup>16</sup> NPA, § III(E).

<sup>17</sup> *Nationwide Programmatic Agreement Regarding the Section 106 National Historic Preservation Act Review Process*, Report and Order, 20 FCC Rcd 1073, 1098 ¶ 63 (2004) (footnotes omitted) (emphasis added) (“NPA Report and Order”). “Section 106” refers to Section 106 of the National Historic Preservation Act (“NHPA”), 16 U.S.C. § 470f, which requires federal agencies to give the ACHP a chance to comment on undertakings that affect National Register eligible sites.

<sup>18</sup> NPA, § III(E).

<sup>19</sup> *See* NPA, § II(A)(14) (defining as a tower “[a]ny structure built for the sole or primary purpose of supporting Commission-licensed or authorized Antennas”).

Finally, NPA procedures contemplate that each antenna site be evaluated individually when the antenna is located in or near a historic site. Thus, the cost and time associated with multiple studies and consultations can exceed that of a standard tower for both applicants and SHPOs.

In summary, the Commission should revisit the assumption that a wireless undertaking cannot be excluded when it occurs on or near a historic site if the effects, if any, are insignificant. This is particularly appropriate in and near utility rights-of-way, in which the Report and Order recognized that antennas and short utility pole-type structures have minimal effects on historic sites while greatly facilitating coverage.<sup>20</sup>

### **C. Preservationists' Understanding**

An important objective of this report was to determine how three preservation groups—SHPOs, the Advisory Council on Historic Preservation (“ACHP”), and the National Trust for Historic Preservation (“National Trust”)—perceived DAS and small cells.

*SHPOs.* To determine if the state offices were familiar with DAS and small cells, and, if so, how they were treating it, the National Conference of State Historic Preservation Officers (“NCSHPO”) surveyed its members. Twenty-three states responded, and information for the additional states was found in the public record. Initially, many SHPOs were not familiar with DAS and small cells—in some cases due to confusion over terminology and in other cases due to the misperception that DAS and small cells are the same as standard cellular equipment located on existing structures.

After SHPO staffs examined photographs of installations more closely, most respondents recognized that DAS was much more preservation friendly than standard towers and antennas. For example, one SHPO explained that “it appears that the effects [of DAS/small cells] will be minimal, just more visual clutter where it already exists,” while another remarked “I am struck by how less visually intrusive these installations are compared to the typical monopole installations that we review.”

*ACHP.* The ACHP staff’s response was much the same as the SHPO staffs. They expressed the opinion, based on the information provided,<sup>21</sup> that any adverse effects would be limited. ACHP staff also recognized that DAS/small cell antennas were significantly different from standard tower antennas and expressed the hope that the FCC would consider these differences in its deliberations. In particular, they recognized workload and resource issues could arise if it was necessary to review DAS sites individually.

*National Trust.* Similar to the ACHP staff, the National Trust had only a limited familiarity with DAS and small cells. After receiving an overview of DAS and small cells like that provided to

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<sup>20</sup> See also NPA Report & Order, 20 FCC Rcd at 1087 ¶ 35 (observing that the “NHPA does not require perfection in evaluating the potential effects of an undertaking in every instance”) (footnote omitted).

<sup>21</sup> ACHP staff was provided an overview of DAS and small cells like that provided to SHPOs. The orientation emphasized that DAS and small cells would rely heavily on utility right-of-ways, that the antenna would be located on the tops of utility poles and connected by fiber cables, that a control box would be located on the pole, and that the system would likely be used in high-density areas.

SHPOs, the National Trust’s representative recognized that DAS and small cells have a far less potential to produce adverse effects than standard towers.<sup>22</sup>

#### **IV. THE SOLUTION: ADJUST THE COMMISSION’S PRESERVATION STRATEGY TO ACCOMMODATE DAS AND SMALL CELL TECHNOLOGIES WITHOUT COMPROMISING PRESERVATION INTERESTS**

As discussed in Section III above, the Commission’s rules and procedures did not envision the emergence of DAS and small cell technologies and, without modification, they would have the unintended effect of thwarting their utilization. Accordingly, the Commission’s underlying preservation strategy—which is embodied in the Collocation Agreement and the NPA—should be altered to accommodate DAS and small cell technologies, particularly in light of changing preservation practices.

While a number of approaches were considered,<sup>23</sup> one option would be for the Commission to exclude DAS and small cell technologies as Section 106 undertakings, pursuant to the authority it reserved in Section I(B) of the NPA:

The Commission has sole authority to determine what activities undertaken by the Commission or its Applicants constitute Undertakings within the meaning of the NHPA. Nothing in this Agreement shall preclude the Commission from revisiting or affect the existing ability of any person to challenge any prior determination of what does or does not constitute an undertaking.<sup>24</sup>

An undertaking is defined in ACHP rules as “a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license or approval.”<sup>25</sup> Thus, pursuant to Section I(B) of the NPA, DAS and small cell installations can be considered to not be an undertaking.<sup>26</sup>

Even if DAS and small cell installations are assumed to be an undertaking, the Commission can still find, consistent with Section 800.3(a)(1) of the ACHP’s rules, that it “has no further obligations under section 106 or [the ACHP rules]” if the undertaking does not have the potential to cause effects on historic properties or any effects are *de minimis*.<sup>27</sup> Thus, pursuant to Section

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<sup>22</sup> The ACHP and the National Trust also encouraged that others be consulted, including the National Alliance of Preservation Commissions and the National Main Street Center.

<sup>23</sup> For example, while initially amending the NPA was thought to be the better way to accommodate DAS and small cells, preservationists preferred to avoid this approach.

<sup>24</sup> NPA, § I(B).

<sup>25</sup> 36 C.F.R. § 800.16(y).

<sup>26</sup> As discussed above, the installation of DAS and small cells is readily distinguishable from traditional macro-site tower construction, which the D.C. Circuit has recognized is a federal undertaking. *See CTIA - The Wireless Ass’n v. FCC*, 466 F.3d 105, 112-15 (D.C. Cir. 2006).

<sup>27</sup> *See* 36 C.F.R. § 800.3(a)(1); *Save Our Heritage, Inc., et al., v. FAA*, 269 F.3d 49, 58, 62-63 (1<sup>st</sup> Cir. 2001).

800.3(a)(1) of the ACHP's rules, the Commission need not require DAS and small cell installations to undergo a Section 106 analysis.

Indeed, the Commission has already found that “the likelihood of an incremental adverse impact on historic properties [from antennas on utility-type poles] is minimal,”<sup>28</sup> and that “it promotes historic preservation to encourage construction of such minimally intrusive facilities rather than larger, potentially more damaging structures.”<sup>29</sup> Because DAS and small cell antennas are smaller and the mounting poles lower than those the Commission was referring to in these findings, it follows that DAS and small cell effects are even more *de minimis* and even more unlikely to affect historic sites.<sup>30</sup> In fact, DAS and small cells have no more of an impact than any of the other many attachments on poles.

Alternatively, the FCC could ask the ACHP to invoke the “exempted category” provision of its rules. This provision allows for exemptions from Section 106 when “[t]he potential effects of the undertakings within the program or category upon historic properties are foreseeable and likely to be minimal or not adverse . . . .”<sup>31</sup> DAS installations and small cell deployments would almost certainly qualify given their foreseeable minimal effects, as discussed above.

Once the FCC requests an exemption (or in the alternative, if the ACHP chooses to do so on its own initiative), the ACHP can initiate it. The mechanism spelled out in 36 C.F.R. §§ 800.14(c)(1)-(5) is designed: a) to streamline federal preservation; and b) allow a federal agency to obtain ACHP review of proposed exemption (which in this instance would be excluding DAS and small cell deployments from Section 106 review).<sup>32</sup> It has been used previously by the ACHP, for example, to issue exempted categories for the interstate highway system and natural gas pipelines.<sup>33</sup>

The Commission will be the lynchpin needed to effectuate any of these alternative solutions.<sup>34</sup> Based on our interviews with the ACHP staff, several SHPOs, and National Trust staff, we

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<sup>28</sup> NPA Report and Order, 20 FCC Rcd at 1098 ¶ 63.

<sup>29</sup> *Id.*

<sup>30</sup> *See id.*

<sup>31</sup> 36 C.F.R. § 800.14(c).

<sup>32</sup> “Exempted categories” under Section 300.14(c) of the ACHP rules and “program comments” under Section 300.14(e) share procedural similarities, but the two are distinct. Exemptions are intended to remove from Section 106 compliance “those undertakings that have foreseeable effects on historic properties *which are likely to be minimal*,” which makes them appropriate for DAS. *See* ACHP, Revised Section 106 Regulations, Preamble, <http://www.achp.gov/regspreamble.html> (last visited Mar. 7, 2013) (emphasis added). By contrast, program comments are intended to give the ACHP the flexibility to issue comments on a particular class of undertakings, but “would not be appropriate” to handle Section 106 compliance requirements for categories of actions like DAS and small cell installations that only “may affect *few* historic properties.” *See id.*; ACHP, Guidance on Program Comments as a Program Alternative, Questions & Answers, <http://www.achp.gov/altguidance/qa.html> (last visited Mar. 7, 2013) (emphasis added).

<sup>33</sup> *See* Dave Berwick, Army Affairs Coordinator, ACHP, Presentation: Program Alternatives under 36 CFR Part 800, at 11, <http://www.slideserve.com/mendel/program-alternatives-under-36-cfr-part-800> (last visited Mar. 7, 2013).

<sup>34</sup> It appears that the FCC will also need to amend its own rules to effectuate these solutions.



believe that the preservation community will be receptive to altering the current framework. When the technology is fully explained, most recognize that DAS and small cells are fundamentally different from standard tower technology so as to merit different treatment. More importantly, all generally understand that DAS and small cell installations are in most instances beneficial to preservation interests.

## **V. CONCLUSION**

To summarize, without doing too much injustice to the complexities of the task, the Commission and industry have an opportunity to advance broad communications and preservation objectives while making less burdensome the industry's and the SHPOs' workload.