Chapter 5. Antenna Submission Guidelines

5.1 Introduction

In accordance with federal law and the D.C. Code, the Commission has the authority to review and approve the placement of antennas and their structures, including monopoles, towers, equipment buildings, and shelters located on federal land in the National Capital Region and on District-owned land in the District of Columbia. [1]

Similar to the Commission's review of site and building plans, the Commission exercises an approval authority for its review of antennas on federal land within the District of Columbia or on District-owned land in the Central Area. The Commission has an advisory authority for antenna projects located on federal land outside of the District in the National Capital Region or on District-owned land outside the Central Area. In general, the Commission's review focuses on:

- Protecting the skyline, historic resources, and scenic character of the nation's capital.
- Preserving the general appearance of federal buildings.
- Providing employees, visitors, and residents with a healthy and safe environment.

The Commission reviews three categories of antennas: permanent, temporary, and those associated with small cell infrastructure. The following sections describe the different antennas and their relative review processes, in addition to the specific criteria which guide NCPC's review. The applicant for antenna submissions is a federal or District of Columbia agency with jurisdiction over the property for which an antenna is proposed. Service providers are private companies that usually own and install the antennas. While agencies may work with the service provider to develop the submission, the agencies are the applicant.

5.2 Small Cell Infrastructure Antennas

Small cell antennas are smaller, low-power cell antennas usually attached to existing streetlight poles or placed on new poles. These antennas are the main infrastructure of an emerging, integrated telecommunications system that is currently being used to deploy the 5th generation, or 5G, networks. The service providers note these smaller, lower-power cell antennas need to be deployed close to users along the street at more frequent intervals because the signals do not travel as far as previous generations due to the large amounts of data that they are able to handle.

Small cell antennas proposed on federal or District of Columbia property, and open space in and around this property, are reviewed in accordance with the submission guidelines for permanent antennas in the next section. Small cell antennas proposed on public rights-of-way in the District of Columbia follow the District's review process. In 2018, NCPC worked with the District Department of Transportation to develop a federal interest map for the area around the monumental core in downtown Washington. Click here to see the federal interest map on page 14 of the Small Cell Design Guidelines. The map identifies specific locations where small cell antennas are permitted on new and existing light poles. NCPC will review any proposed deviations to this map, as well as any installations in public rights-of-way adjacent to federal buildings or sites.

[1] The review authority is based on provisions in Section 5 of the National Capital Planning Act of 1952, as amended, 40 USC § 8722(b) (1) and (d); D.C. Code § 6-641; and the International Center Act of 1968, as amended, P.L. 90-553(1968), Public Law 97-186 (1982) at Section 3, and the Telecommunications Act of 1966.

5.3 Temporary and Permanent Antennas

NCPC's Submission Guidelines categorize antennas as either temporary or permanent.

Temporary Antennas

Temporary antennas refer to antenna infrastructure, most often installed on the roof or side of a building, that are in place for a period of less than three months. Temporary antennas can also be located in the public right-of-way. These are known as cell-on-wheels (COWs); however, COWs are not reviewed by NCPC.

The installation of temporary antennas has increased significantly with the use of cell phones and requires a different review process given the limited duration of their installation. Since the Commission's review cycle can sometimes be longer than 30 days and there are several recurring events/festivals requiring the same antennas infrastructure every year, NCPC does not require the submission of temporary antennas that are installed for 90 days or less for large scale event such as the Smithsonian Folklife festival or a Presidential Inauguration. In lieu of a submission, NCPC requests notification of the proposed infrastructure and duration of installation. Agencies installing temporary antennas will need to meet all other regulations, such as the National Historic Preservation Act and Federal Communications Commission (FCC) guidelines, as required. All other antenna installations for greater than 90 days will follow the permanent antenna process. See Section 5.6 for more detail.

TIP

Temporary Antenna Review Process

Antennas installed for 90 days or less do not need to be reviewed by the Commission. The purpose of temporary antennas is most often to provide greater coverage for the public and support emergency responders during individual events that occur throughout the year. When a temporary antenna is to be located on a building rooftop, the applicant shall submit a temporary antenna notification to the Commission. This should include the following information:

- Duration of the installation
- Location
- Removal date
- Certification in accordance with FCC guidelines.

Along with this notification, the agency will also need to submit a site drawing or site photograph indicating the temporary antenna location. The form can be found here.

Permanent Antennas

For the purpose of the submission guidelines, NCPC defines permanent antennas as antenna infrastructure located on a building, monopole, or tower for a period greater than three months. The infrastructure may either be permanently affixed to, or free standing, on a building. Submissions for review of permanent antennas may include the relocation of an existing antenna, an addition to an existing antenna, or a replacement antenna, in addition to proposals for entirely new antenna equipment.

5.4 Review Criteria

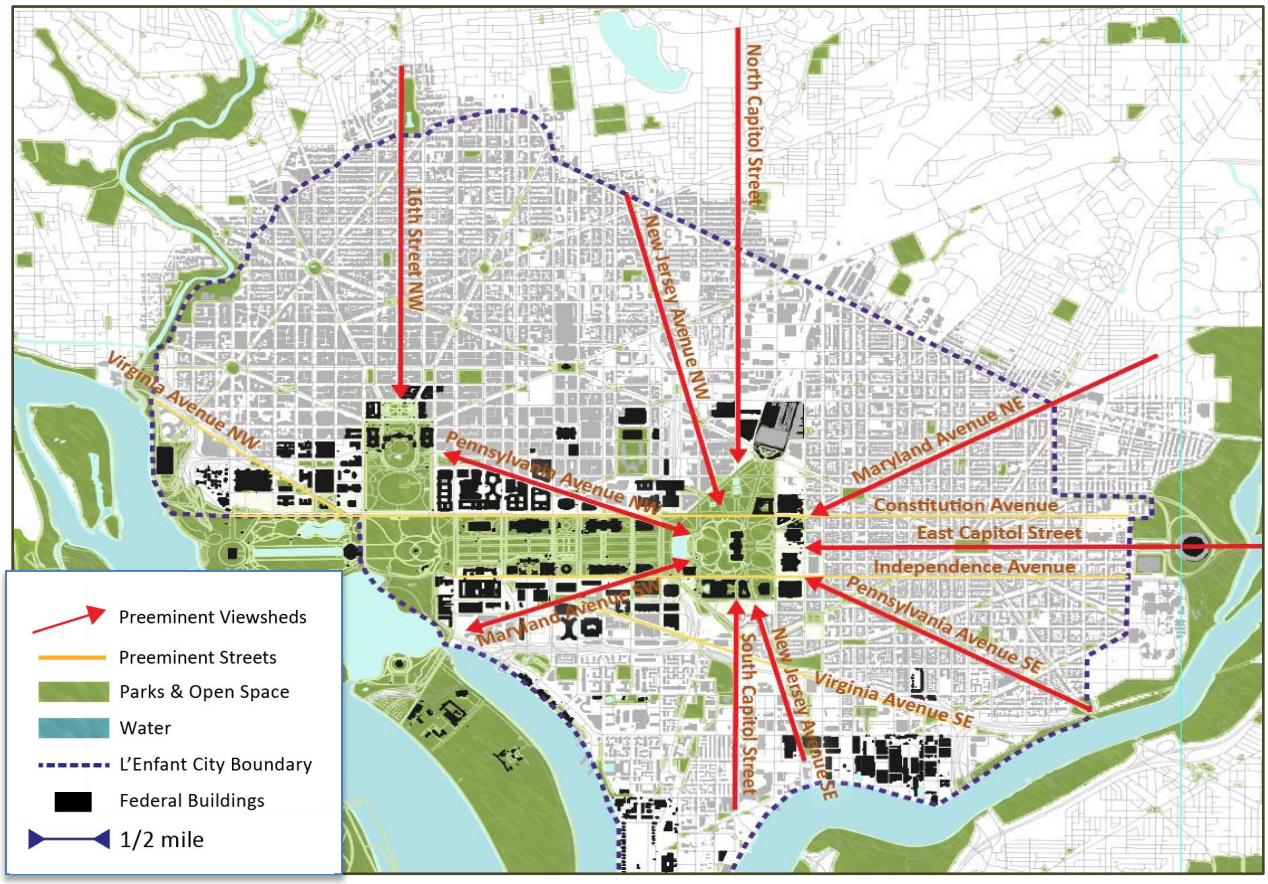
All proposals for the installation of permanent antennas and their support structures on federal property shall be consistent with the applicable policies contained in the *Comprehensive Plan for the National Capital's* Federal Elements. Policies specific to antenna installations are located in the Federal Environment Element (Section M) and the Parks & Open Space Element. Furthermore, all antennas and support structures erected within the District of Columbia shall be consistent with provisions of the Height of Buildings Act of 1910.

In addition to the policies listed above, antenna installations must meet criteria related to visibility, viewsheds, location/siting, safety, and materials listed in Table 23. For decades, NCPC has reviewed antennas in accordance with design and safety criteria; however, the recent increase in antenna installations has resulted in the need for additional criteria to address cumulative impacts of multiple antennas in one location and potential impacts to significant viewsheds.

Protecting Preeminent Viewsheds

While it is important to minimize the visibility impacts of antennas on all buildings in the city, NCPC recognizes a hierarchy of streets in the monumental core that deserve even greater protection given their importance in the nation's capital. As shown in the Preeminent Viewsheds Map (below) from the Comprehensive Plan's Federal Urban Design Element, there are a series of priority streets identified as preeminent streets/viewsheds where the siting of antennas should be carefully considered.

Figure 16: Preeminent Viewsheds



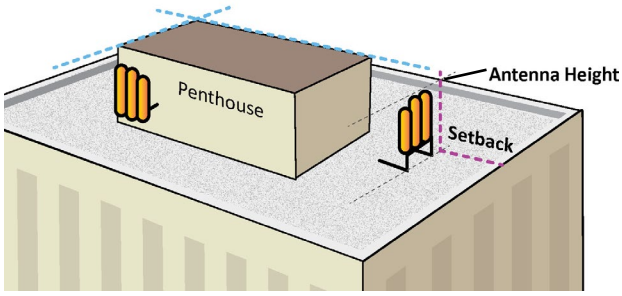
In order to protect these views, any new antennas placed on building rooftops in preeminent viewsheds need to adhere to the Design and Safety Criteria, including the Preeminent Viewshed Criteria #3 in Table 23.

Cumulative Impacts of Several Antennas on A Single Building

While a single antenna on a building may not have a significant impact on its view from the street, multiple visible antennas will. As the need for more antenna infrastructure increases, the issue of cumulative impacts

of multiple antennas is a growing concern. The best solution is identifying an overall rooftop strategy for buildings in high demand. For new buildings this should be done during the design phase. For existing buildings, the applicant shall catalog the number and location of rooftop antennas and develop an effecting screening strategy if they are visible from the ground or other important viewsheds. See Table 23 for specific criteria.

Table 27: Design and Safety Criteria

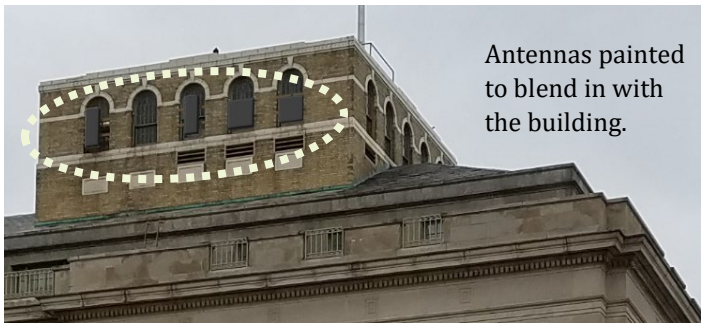
Design and Safety Criteria
1. *New building design* – Federal agencies should anticipate the need for antennas on all new buildings and incorporate, as necessary, any screening or other components into the building's design to reduce their visibility. As much as they may be anticipated, locations or zones on installations that permit antennas should be considered, identified, and included as part of federal agency master plans.
2. *General rooftop antenna siting* – Consistent with technical communications requirements, rooftop antennas should be: a) Installed at the lowest possible elevation above the roof line or, as a last resort, located on top of any penthouse structure. b) Set back from the edge of the building at a minimum distance at least equal to the antenna's height above the roof (1:1 ratio). See illustration below. c) Screened as appropriate from any public views in a manner that is sensitive to the building's architectural character unless the screening results in a greater impact on public views. d) Placed so the antennas do not exceed the wall height, when they are mounted on an existing mechanical penthouse. (see illustration below) e) No taller than the highest part of the enclosed equipment, if a stealth enclosure is used.    **Antenna Setback Illustration** *Setback is, at a minimum, equal to the height of the sled-mounted antenna (1:1).*
3. *Preeminent viewshed siting* – Rooftop antennas on buildings within these viewsheds (as seen in Figure 8): In consultation with NCPC staff, the applicant shall provide a viewshed analysis indicating how the proposal will minimize viewshed impacts through antenna location, screening, and/or material color that camouflages with the building. The analysis shall include photo simulations of the proposed equipment from the preeminent viewsheds/streets.
4. *Multiple antennas on a single building* – The applicant is required to submit a rooftop antenna plan when multiple antennas on a building rooftop are visible from the street. The plan should include a coverage impact analysis indicating how antenna placement on the rooftop will affect coverage, in

Design and Safety Criteria

addition to the analysis of the cumulative visual impacts of several antennas on the building and mitigation strategies (greater setbacks or a screening solution, etc.)

5. *Ground level antennas, including small cell siting* - Consistent with technical communications requirements, ground level antennas should be:
    a) Sited in locations that minimize public views.
    b) Installed at the lowest possible elevation above grade where appropriate.
    c) Screened to the extent practicable by landscaping to reduce visual impacts.

6. *Materials* - Antennas on existing federal buildings or ground level installations should not be bright, shiny, or reflective but should consist of materials that minimize their appearance from adjacent/nearby properties and public rights-of-way. Antennas on the side of a building or penthouse should be painted the same color as the building. When antennas are located on building rooftops such that the sky is the background, the antenna and related equipment should be painted light grey in color to minimize visibility.



7. *Lighting* - Maintenance lights, or illumination, shall only be permitted on antennas and support structures for the purpose of safe access to these facilities. This lighting shall remain off until access is needed. Illumination required by the Federal Communications Commission, the Federal Aviation Administration, or another federal government agency may also be permitted.

8. *Advertisement* - No commercial advertising shall be allowed on an antenna or support structures.

9. *Health* – Applicants must provide a certification that proposed antennas are in compliance with radio frequency (RF) radiation emission guidelines established by the FCC and the Occupational Safety and Health Administration. If other emission sources are nearby, the cumulative effect of the additional proposed antenna must also follow the FCC guidelines.

10. *Safety* – Antennas must be clearly marked and include screening, fencing, and/or another deterrent, to restrict public access and ensure safety.

5.5 Review Process for Permanent Antennas

The submission process for permanent antenna projects generally follows the same process for site and building plans with the exception that there is rarely a concept review. Depending on the scale and impact of the project, staff may decide to combine preliminary and final review into a single review. In some instances, the Commission may also delegate review to the Executive Director or except it from review. In accordance with Public Law 106-113, § 174 and NCPC's submission guidelines, the Commission will complete its full review process and take preliminary and final action on each proposed telecommunication facility no later than 120 days after receiving a complete project submission from the applicant. Small cell antenna review is slightly different, pursuant to FCC guidelines, which includes a 60-day review period for an application to collocate small wireless facilities on an existing structure and 90 days for review of an application for the attachment of small wireless facilities using a new structure. If the Commission does not take action within the mandated time frame it will constitute a failure to act and require an immediate issuance of an approval.

Pre-Submission Briefing

Figure 17: Submission Stages for Antennas: Pre-Submission Briefing

Pre-Submission Briefings, which occur prior to Commission review, provide NCPC staff and the applicant an opportunity to informally discuss the proposed project, identify potential issues, and establish coordination for planning/environmental/historic preservation review stages.

During the Pre-Submission Briefing, NCPC staff and applicants should discuss the following:

- Determine if the project requires Commission review.
- Determine which review stages are necessary.
- Identify whether the project meets the antenna criteria and the policies in the Comprehensive Plan.
- Establish a submission schedule.
- Identify if additional information is needed in the submission.
- Determine NEPA/Section 106 implications.

TIP

Pre-Submission Briefings are required for all projects. At the discretion of staff, Pre-Submission Briefings may be conducted via phone or email for small and less complex projects. For particularly large, complex, or long-term projects, additional consultations may be necessary.

Applicants should contact the Director of the Urban Design and Plan Review Division, or the assigned NCPC staff member, if known, by phone or email, to request a briefing. Contact information is available at www.ncpc.gov.

Table 28: Pre-Submission Briefing Requirements for Antennas

Pre-Submission Briefing Requirements for Antennas	
Required?	A Pre-Submission Briefing is required for antenna submission. This may be conducted by phone or email.

Pre-Submission Briefing Requirements for Antennas	
Timing	Briefings occur early in project development (e.g., 0-15 percent design development), prior to the initiation of NEPA/Section 106, substantial design, or location decisions.
Submission Content	Applicants are not required to submit any information to NCPC staff prior to Pre-Submission Briefings. However, applicants should be prepared to discuss the subject matter identified above. Any information that can be shared in advance will better prepare NCPC staff for the briefing.

Preliminary Review

Figure 18: Submission Stages for Antennas: Preliminary Review

The following table includes information that should be submitted with each antenna installation proposal at Preliminary Review, unless it is determined through the Commission's early consultation process that such information is not needed:

Table 29: Preliminary Review Requirements for Antenna Projects

Preliminary Review Requirements for Antenna Projects	
Required?	Preliminary Review is required. Staff may decide to combine Preliminary and Final Review for antenna projects.
Timing	Preliminary review occurs after tentative design decisions have been made but well before detailed design work begins (e.g., 25-35 percent design development).
Application Form	The application form is required.
NEPA	If the applicant has a NEPA responsibility, submit the draft NEPA document (Environmental Assessment (EA)/Environmental Impact Statement (EIS)) or the selection of a Categorical Exclusion (CATEX) applicable to the project. If only NCPC has a NEPA responsibility, NCPC will work with the applicant to develop this information.
NHPA Section 106	If the applicant has a Section 106 responsibility, include the Assessment of Effects for the Section 106 if relevant or documentation of the consultation process. If only NCPC has a Section 106 responsibility, NCPC will work with the applicant to develop this information.

Preliminary Review Requirements for Antenna Projects	
Project Report (content listed below)	Required. If the information below is not available, please describe why and whether it is forthcoming. Note: All documents should be accessible and adhere to Section 508 of the Rehabilitation Act of 1973, as amended in 1998 (29 U.S.C. § 794 (d)).

Table 30: Project Report Content for Preliminary Review

Project Report Content for Preliminary Review	
Project Overview	
Project Description	Describe, the proposed antenna installation in plain, non-technical language, including information for all of the proposed elements such as towers, monopoles, and equipment buildings and shelters (if applicable). The description should include: ▪ Information on the building or site location; ▪ The tenant agency where the antenna or tower is located; ▪ The proposed antenna's physical dimensions and the dimensions of existing antennas if the proposed antennas are replacements; ▪ Transmitting frequency and frequency of operation; ▪ The potential for accommodating additional antennas on the support structure; and ▪ Any other appropriate data regarding the particular installation consistent with security considerations.
Description of Existing Antennas (if applicable)	Describe any existing antennas located on the building and/or site, structure, or tower. The description should state the functional relationship of the proposed antenna (if applicable) to existing antennas as well as the status of any existing antennas proposed to remain.
Alternatives	Discuss the alternatives that were considered to meet the telecommunications needs of the applicant or the service provider and include a cell coverage map for the immediate vicinity of the proposed antenna showing the area that will be affected
Schedule	Describe the amount of time the antenna will be operational and in place.
Public Engagement	Describe the plan and status for engagement with the public for the project. Identify any community or local coordination initiated for the project, and include a summary of community comments and concerns, if available.
Coordination with Federal, State, and Local Jurisdictions	Describe the plan and status of coordination with affected federal agencies and state and local governments. If known, describe what coordination with federal, state, and local jurisdictions will be required or conducted voluntarily.
Detailed Project Information and Drawings	
Site Plan/ Construction Drawings	Provide a site plan and building roof plans and elevations (for antennas mounted on a building, structure or tower) showing the form, dimensions, and location of the proposed antenna(s) and any existing antennas that are proposed to remain.

Project Report Content for Preliminary Review	
Design Details	Describe the texture and color of antenna materials. Describe the screening plan, where appropriate, including proposed materials, color and texture of screening elements for rooftop and ground level installations.
Renderings/ Photo Simulations	Include sight line studies and photo simulations of the proposed installation and alternatives considered, illustrating the extent to which the proposed antenna(s) will be visible from surrounding streets, public open spaces, and nearby residential areas. Determine whether the proposed antenna will impact any important viewsheds. The submission must contain high quality photo simulations of views within close proximity of the proposed antenna(s) (1-2 blocks away) and further proximity (several blocks away) in addition to simulations of important viewsheds/historic resources that may be impacted. These simulations should include appropriate context including the entire building façade, to better understand how the proposed antennas affect the building composition. Views to the building should be shown without clouds and trees blocking the view where possible.
Environmental and Historical Considerations (may be cross-referenced with any NEPA/NHPA documentation if available)	
Historic Preservation	Identify the Area of Potential Effect (APE), historic resources within the APE, and any potential impacts. If known resources are present, describe the project's approach to addressing the resource (e.g., avoidance, rehabilitation, preservation, restoration, or demolition).
Environmental	Describe environmental impacts, including RF effects, on or near the project area, and the project's anticipated effect on these natural resources such as endangered and threatened species, and migratory birds, humans, trees, etc.
Safety Certifications	
Agency Certifications and Commitments	Provide a certification by the agency that the proposed transmitting antenna complies with the RF radiation guidelines adopted by the FCC and the health and safety regulations adopted by the Occupational Safety and Health Administration.

Final Review

Figure 19: NCPC Antenna Submission Stages

The purpose of Final Review is for NCPC to review any changes based on previous Commission comments. While most antenna submissions are processed in one review stage (combined Preliminary and Final Review), occasionally the Commission will ask the applicant to make refinements.

Table 31: Final Review Requirements for Antenna Projects

Final Review Requirements for Antenna Projects	
Required?	Final Review is required. Staff will determine whether the submission will be reviewed as a combined Preliminary and Final Review.
Timing	The Section 106 review process shall be complete prior to submitting the final proposal to the Commission for review. The NEPA process must be complete prior to submitting the final proposal to the Commission for review.
Application Form	The application form is required
NEPA	The final environmental document is required (Record of Decision or Finding of No Significant Impact) or a CATEX. Note: the MOA for Section 106 must be signed before a FONSI/ROD is issued.
NHPA Section 106	The final executed documentation (e.g. Statement of Effects, Memorandum of Agreement or Programmatic Agreement) is required.
Project Report	A project report is required. See content below. Note: All documents should be accessible and adhere to Section 508 of the Rehabilitation Act of 1973, as amended in 1998 (29 U.S.C. § 794 (d)).

Table 32: Project Report Content for Final Review

Project Report Content for Final Review	
Project Overview	
Project Description	Describe the proposed antenna installation in plain, non-technical language, including information for all of the proposed elements such as towers, monopoles, and equipment buildings and shelters (if applicable). The description should include: ▪ Information on the building or site location; ▪ The tenant agency where the antenna or tower is located; ▪ The proposed antenna's physical dimensions and the dimensions of existing antennas if the proposed antennas are replacements; ▪ Transmitting frequency and frequency of operation; ▪ The potential for accommodating additional antennas on the support structure; and

Project Report Content for Final Review	
	▪ Any other appropriate data regarding the particular installation consistent with security considerations.
Description of Existing Antennas (if applicable)	Describe any existing antennas located on the building and/or site, structure, or tower. The description should state the functional relationship of the proposed antenna (if applicable) to existing antennas as well as the status of any existing antennas proposed to remain.
Commission Comments	Describe how refinements made to the previous antenna submission address the Commission's comments.
Schedule	Describe the amount of time the antenna will be operational and in place.
Public Engagement	Describe the plan and status for engagement with the public for the project. Identify any community or local coordination initiated for the project, and include a summary of community comments and concerns, if available.
Coordination with Federal, State, and Local Jurisdictions	Describe the plan and status of coordination with affected federal agencies and state and local governments. If known, describe what coordination with federal, state, and local jurisdictions will be required or conducted voluntarily.
Detailed Project Information and Drawings	
Site Plan/Construction Drawings	Provide an updated site plan and building roof plans and elevations (for antennas mounted on a building, structure or tower) showing the form, dimensions, and location of the proposed antenna(s) and any existing antennas that are proposed to remain.
Design Details	Describe the texture and color of antenna materials. Description of the screening plan, where appropriate, including proposed materials, color and texture of screening elements for rooftop and ground level installations.
Renderings/ Photo Simulations	Include updated sight line studies and photo simulations of the proposed installation and alternatives considered, illustrating the extent to which the proposed antenna(s) will be visible from surrounding streets, public open spaces, and nearby residential areas. Determine whether the proposed antenna will impact any important viewsheds. The submission must contain high quality photo simulations of views within close proximity of the proposed antenna(s) (1-2 blocks away) and further proximity (several blocks away) in addition to simulations of important viewsheds/historic resources that may be impacted. These simulations should include appropriate context including the entire building façade, to better understand how the proposed antennas affect the building composition. Views to the building should be shown without clouds and trees blocking the view where possible.

Project Report Content for Final Review	
Environmental and Historical Considerations (may be cross-referenced with any NEPA/NHPA documentation if available)	
Historic Preservation	Identify the APE, historic resources within the APE, and any potential impacts. If known resources are present, describe the project's approach to addressing the resource (e.g., avoidance, rehabilitation, preservation, restoration, or demolition).
Environmental	Describe environmental impacts of the project, including RF effects, on natural resources such as endangered and threatened species, and migratory birds, humans, trees, etc. If there are impacts, describe how the project design mitigates the impacts.
Safety Certifications	
Agency Certifications and Commitments	Provide a certification by the agency that the proposed transmitting antenna complies with the RF radiation guidelines adopted by the Federal Communications Commission and the health and safety regulations adopted by the Occupational Safety and Health Administration.

5.6 Approval Time Limits

Commission approval of a permanent, non-federal antenna installation is limited to five years. This time period may be extended to ten years at the Commission's discretion where the proposed antenna(s) will not have an adverse visual impact on the monumental core and surrounding lands, designated historic buildings and districts, or nearby residential areas. All antennas that are no longer in use need to be removed. The Commission must also be satisfied that the wireless telecommunication technology proposed is not likely to be replaced in the next ten years by new technology that could either reduce the equipment's visibility or RF radiation levels. Antennas installed by the government for secure or emergency communications, by both federal and local governments, ordinarily do not have a time limit.

5.7 Renewal of Antenna Approvals

Federal agencies may submit requests to renew an existing antenna approval if the antenna is nearing its expiration date. This should be done through the NCPC submission portal several months prior to the antenna's expiration. Any antenna that does not receive reapproval by the Commission should be removed as soon as possible after the expiration of the Commission's approval period. Antennas no longer needed should be removed immediately and the sponsoring agency should notify NCPC in a letter that the antenna has been removed.

Each request for renewal should include the following information, unless it is determined through the Pre-Submission Briefing that such information is not needed:

1. A certification by the sponsoring agency or the telecommunication service provider that the proposed transmitting antenna complies with the RF radiation guidelines adopted by the FCC and applicable health and safety regulations adopted by the Occupational Safety and Health Administration.
2. A copy of the previous Commission approval.
3. A statement that:
    i. All conditions of the original approval are, and continue to be, satisfied.
    ii. The original installation is structurally sound and continues to meet all of the submission requirements.